39th Congress of Société Internationale d'Urologie
October 17–20, 2019
Athenaeum InterContinental Athens

Featuring the 5th SIU Global Nurses' Educational Symposium

In conjunction with the 9th Eurasian Uro-Oncology Congress

SIU Around the WORLD ATHENS 2019

ABSTRACT BOOK

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Friday, October 18, 2019
1400–1530

MP-00.01

Potential Biomarkers for Diagnosis of Overactive Bladder in Urothelium Using Proteomic Analysis

Na YG, Shin JH, Song KH, Lim JS, Park JM, Yang SW, Lee JY

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Introduction and Objective: There are several molecular diagnostic markers of OAB, however clinical diagnosis of OAB is still symptom-based. The urothelium directly contacts with urine, secreted proteins from the urothelium could be released into urine. In previously study, we demonstrated that urothelial protein expression is dynamically altered by OAB. These altered proteins in OAB urothelium could be used as potential diagnostic markers. In this study we tried to compare the profile of proteins secreted by OAB urothelium with those secreted by normal bladder urothelium to identify molecular diagnostic markers for OAB.

Materials and Methods: The study was conducted using male Sprague-Dawley rats, subdivided into sham control (n= 40) and partial BOO groups (n= 60). Partial BOO was induced for 2 weeks and DO was confirmed with measuring cystometry. The urothelium was carefully removed from the smooth muscle layer under a dissecting microscope and its protein expression was analyzed by LTQ-Velos mass spectrometer. The identified proteins were analyzed to discover upstream molecules, and potential biomarkers that are associated with OAB by using Ingenuity Pathway Analysis (IPA) tool. The analysis was done against the Ingenuity Knowledge Base.

Results: The results of this analysis identified 17 putative upstream regulators. Complement component 3b/4b receptor 1-like, huntingtin, and inhibin α act as upstream regulators of Cryab, Aldoa, Tpm2, Myl9, Cnn1, Myh1, and C3, and may cause activation of muscle contraction. Six of the upstream regulators, huntingtin, inhibin α, integrin α2, complement component 3b/4b receptor 1-like, HNF1 homeobox B, and platelet derived growth factor family, may also affect positively the cell movement of leukocytes and neutrophils as well as cellular infiltration by leukocytes through the regulation of many other proteins identified in the urothelium. These regulators are involved primarily in inflammation and cytoskeletal organization.

Conclusion: Extracellular proteins expressed by urothelium that are released into the urine could also be used as non-invasive OAB diagnostic markers. These potential markers are closely related to the pathophysiological changes that occur in OAB. In addition, expression of the up-regulated proteins was verified by real-time PCR experiment. Detecting these proteins or their peptide fragments in urine may be a useful tool for the diagnosis. Verification of these proteins in the urine of OAB patients may be useful non-invasive diagnostic markers for OAB.

MP-00.02

Safety and Efficacy According to PD-L1 Status and Age in the Prospective International SAUL Study of Atezolizumab for Locally Advanced or Metastatic Urothelial or Non-Urothelial Urinary Tract Carcinoma

Bamias A[1], Sternberg CN[2], Loriot Y[3], Choy E[4], Castellano D[5], Lopez-Rios F[6], Gedye C[7], Zengerling F[8], Banna GL[9], De Giorgi U[10], Garcia del Muro X[11], Powles T[12], Duran I[13], James N[15], Geczi L[16], Masini C[17], de Ducla S[18], Fear S[18], Merseburger AS[19]

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Introduction and Objective: Atezolizumab, a monoclonal antibody targeting PD-L1, is an approved therapy for locally advanced/metastatic urothelial carcinoma based on results from the IMvigor210 and IMvigor211 phase II and III trials. The single-arm SAUL study (NCT02928406), which enrolled a broader patient population, demonstrated median overall survival (OS) of 8.7 months and a safety profile consistent with previous atezolizumab trials [Sternberg et al., Eur Urol 2019]. We report prespecified analyses of efficacy and safety according to PD-L1 status and age.

Materials and Methods: Patients with locally advanced/metastatic urothelial or non-urothelial urinary tract carcinoma received atezolizumab 1200 mg every 3 weeks until disease progression or unacceptable toxicity. Populations excluded from IMvigor211 (renal impairment, ECOG performance status 2, treated asymptomatic CNS metastases, stable controlled autoimmune disease, concomitant steroids, HIV positive, non-urothelial histology) were eligible. The primary endpoint was safety; OS and overall response rate were secondary endpoints. Predefined subgroup analyses included outcomes according to PD-L1 status (assessed using VENTANA SP142) and age in the overall population (and the IMvigor211-like subgroup for PD-L1).

Results: Between November 2016 and March 2018, 1004 patients were enrolled; 997 received atezolizumab. PD-L1 status was IC0/1 in 66% and IC2/3 in 27% (unknown in 7%). Efficacy is summarised in the table below. Incidences of grade 3 treatment-related adverse events were similar irrespective of PD-L1 status (overall population IC0/1 vs 2/3: 11% vs 16%; IMvigor211-like population IC0/1 vs 2/3: 11% vs 15%) or age (65 years: 13%; 75 years: 12%; 80 years: 10%).

Conclusion: OS and overall response rate appeared more favourable in the IC2/3 subgroup than the IC0/1 subgroup (overall and in the IMvigor211-like population). Atezolizumab was effective and well tolerated across subgroups, including elderly patients.

MP-00.02, Table 1.

Endpoint	All patients, PD-L1 status		IMvigor211-likea, PD-L1 status		All patients, ageb		
	IC0/1 (n=666)	IC2/3 (n=268)	IC0/1 (n=427)	IC2/3 (n=176)	≥65 years (n=624)	≥75 years (n=227)	≥80 years (n=78)
Deaths, n (%)	388 (58)	132 (49)	235 (55)	82 (47)	335 (54)	128 (56)	44 (56)
Median OS, months (95% CI)	7.9 (6.8–9.1)	11.6 (8.8–18.8)	9.0 (7.8–10.4)	14.5 (9.5–18.8)	8.5 (7.5–10.9)	8.3 (7.3–10.9)	8.3 (5.4–11.2)
6-month OS rate, % (95% CI)	57 (53–61)	67 (61–72)	61 (56–66)	72 (65–78)	60 (56–64)	61 (54–67)	59 (47–69)
Overall response rate, % (95% CI)	10 (8–13)	21 (16–26)	10 (7–13)	23 (17–30)	14 (12–17)	13 (9–18)	8 (3–16)

CI = confidence interval; IC0 = expression on <1% of tumour-infiltrating immune cells, IC1 = expression on 1% to <5% of tumour-infiltrating immune cells, IC2/3 = expression on ≥5% of tumour-infiltrating immune cells. aOverall population minus subgroups of special interest excluded from the IMvigor211 phase III trial of atezolizumab. bSubgroups not mutually exclusive.

MP-00.03

Modified Wallace Anastomosis Reduces Ureteroenteric Stricture Rates – Prospective Randomised Study of Ureteroenteric Stricture Rates after Ileal Conduit Urinary Diversion

Vukovic M, Kavaric P, Magdelinic A

Clinical Centre of Montenegro, Podgorica, Montenegro

Introduction and Objective: Our study addressed significance of modified Wallace 1 approach in terms of reduced ureteroenteric stricture rate and anastomotic leak, leading to relatively low postoperative morbidity rate.

Materials and Methods: Bladder carcinoma (BCa) patients scheduled for definitive treatment by open RC plus pelvic lymph node dissection (PLND) and ileal conduit urinary diversion were recruited from the urology clinics at Clinical centre of Montenegro, between January 2010 and January 2016. Patients were randomized in two groups, according to surgical technique. First group consisted of 70 patients treated by Wallace 1 technique, while second group of 70 examinees was treated with modified Wallace 1 technique, consisted of eversion of ureteral plate and bowel mucosa edges, which were anastomosed together in running fashion, while outher anastomotic wall was augmented with sero-serosal interrupted suture. The surgical protocol had been approved by the University of Montenegro institutional review board and conducted in accordance with the principles of the Declaration of Helsinki of World Medical Association. All patients were followed at least 12 months to provide complications and quality of life (QOL) data. For the primary objective, we hypothesized that the rate of ureteroenteric strictures would be at least 20% lower in first group; Secondary end points included rate of anastomotic leak, surgical time, intraoperative blood loss, rates of positive surgical margins (PSM) and 6-mo patient-reported QOL outcomes.

Results: Our study enrolled 140 patients who were randomized and underwent RC/PLND. Seventy were randomized to first group and the same number to second group. At 12 months, anastomotic stricture was observed in 12% and 3% of first and second group of patients, respectively ($p < 0.05$). The second group had significantly longer operative time ($p < 0.05$), but anastomotic leak rate was significantly higher in first group (17% vs 9%), while pathologic variables including positive surgical margins and lymph node yields were similar. Six months QOL outcomes were similar between groups.

Conclusion: This study revealed significantly lower anastomotic stricture rate using modified Wallace technique and reduced rate of anastomotic leak, which could be major issues in minimizing short term postoperative complications. Lack of our study is, however, short follow up period and small randomization groups.

MP-00.04

Laparoscopic Pyelolymphatic Disconnection for Refractory Chyluria

Singh BP[1], Pathak HR[2], Sankhwar SN[1], Kumar M[1]

[1]*King George's Medical University, Lucknow, India;*
[2]*Topiwala National Medical College, Mumbai, India*

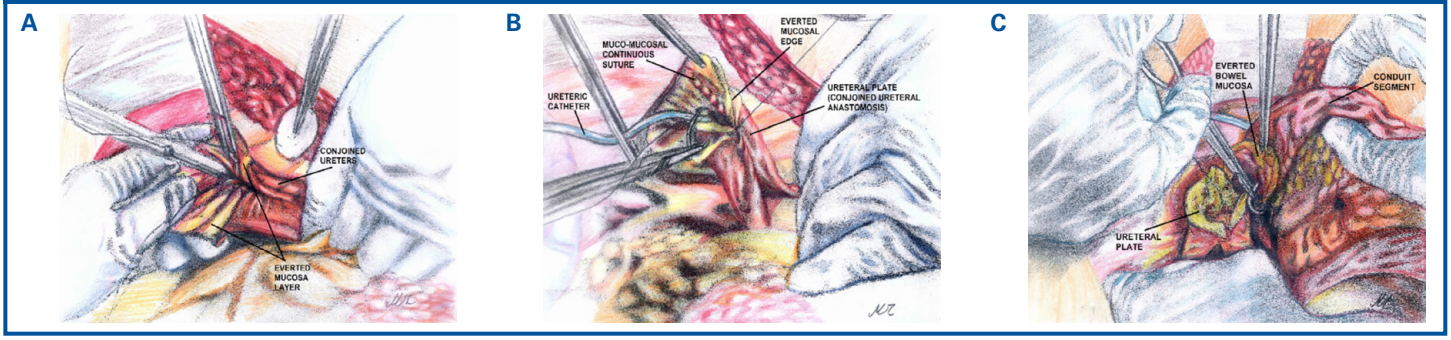
Introduction and Objective: Filarial or idiopathic chyluria is a debilitating and recurrent disease. Here we present our experience and outcomes of laparoscopic pyelolymphatic disconnection for refractory chyluria.

Materials and Methods: In 26 patients (>15 years of age) with filarial or idiopathic refractory chyluria (after failure of Medical treatment + 2 courses of instillation sclerotherapy), laparoscopic pyelolymphatic disconnection procedure was performed between March 2010 and Feb 2018 at 2 tertiary care institutions. Preoperative assessment included clinical examination, ultrasonography, intravenous urography, cystoscopy and retrograde pyelography ± CT scan, serum albumin, urine test for chyle, cholesterol, triglycerides and albumin. Of these, 25 patients underwent unilateral procedure and 1 underwent bilateral procedure. Transperitoneoscopic procedure included skeletonization of renal artery and vein, nephrolymphotomy and upper ureteral lympholysis using 3 or 4 ports. Postoperative assessment included clinical examination, serum albumin, urine test for chyle, cholesterol, triglycerides and albumin at 3, 6 and 12 months follow up. Thereafter patients were followed up clinically.

Results: Urine became clear in all patients immediately after surgery. In postoperative period, 4 patients had high (>1 liter/day) and/or prolonged (> 5 days) chylous drain output which settled in 3 weeks in all. Absence of urinary chyle, a significant ($p < 0.05$) increase in mean serum albumin and a significant ($p < 0.05$) decrease in mean urinary albumin, triglycerides and cholesterol was noted at 3 months follow up after the procedure. In follow up period, chyluria recurred in 3 patients; in one from ureter at 4 months on operated side, in another at 5 months from unknown site on operated side and in third at 12months from contralateral unoperated kidney. All these 3 recurrences responded to povidine-iodine instillation sclerotherapy. Thus, laparoscopic pyelolymphatic disconnection alone was curative in 23/26 (88.4%) patients and 25/27(92.6%) renal units at a mean follow up of 74.6 months.

Conclusion: For refractory chyluria, laparoscopic pyelolymphatic disconnection is an effective surgical treatment with low morbidity and offers an early full dietary freedom to these patients.

MP-00.03, Figure 1. **A** and **B:** Each ureter was spatulated for 2.5 - 3 cm and initial suture was placed at the apex of both ureters, through all layers; thereafter, further muco-mucosal running suture of everted posterior medial ureteral wall edges was placed; **C**: Lateral edges of the newly formed ureteral plate and the everted ileal mucosa (from the proximal end of conduit segment) were anastomosed in a running fashion;



MP-00.03, Table 1. Patient characteristics

RC/PLND (N=140)	Group I (n=70)	Group II (n=70)
Anastomotic stricture, n (%)	8 (12)	2 (3)*
Estimated blood loss, ml (SD)	810 (250)	780 (320)
Operative time, mean (SD)	260 (25.31)*	330 (32.1)
Anastomotic leak, n (%)	12 (17)	6 (9)*
Mean follow up time, mo (IQR)	16 (12-31)	14 (12-27)

Group I – Wallace I technique
Group II – modified Wallace I technique
* Statistically significant difference between corresponding groups ($p<0.05$)

MP-00.05

Characterization of Escherichia coli Isolates in Invasive Urinary Tract and Bloodstream Infections following Post-transrectal Ultrasound-guided Prostate Biopsy

Spiessens B[1], Donskey C[2], Abbanat D[3], **Saade E**[2], Poolman J[4], Go O[3], Ibarra de Palacios P[5], Hermans P[4], Gravenstein S[6]

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Introduction and Objective: Transrectal ultrasound-guided prostate biopsy (TRUS-PB) is performed in approximately 1 million individuals in the US annually. TRUS-PB introduces risk for infectious complications, with Escherichia coli (E. coli) the most commonly reported pathogen. Use of vaccination to prevent such E. coli infections may be feasible, and to this end, Janssen are developing an extra-intestinal pathogenic E. coli (ExPEC) vaccine (ExPEC10V) for prevention of invasive ExPEC disease (IED). Here we characterize clinical prevalence of bacteremic IED (BIED), BIED with urinary tract infection (BIED-UTI) and non-bacteremic invasive E. coli disease with urinary tract infection (NBIED-UTI). Distribution of E. coli O-serotypes in patients with confirmed invasive E. coli disease (IED) who had undergone a TRUS-PB was also examined.

Materials and Methods: Data from patients following TRUS-PB identified within the Veterans Health Administration electronic medical record system from 2009–2017 were collected. Patients with *E. coli* present in urine or in blood cultures within 30 days post-procedure were identified. Those patients with *E. coli* identified in blood cultures were considered to have BIED; those with *E. coli* present in both blood and urine were considered to have BIED-UTI. Charts of patients with *E. coli* present in the urine were reviewed to confirm NBIED-UTI. *E. coli* O-serotypes were analysed by agglutination in isolates obtained from 60 patients with confirmed IED.

Results: The study cohort comprised 168,043 patients (mean ± SD age 65 ± 6.9 years; 66% White, 26% Black or African American) who underwent their first TRUS-PB. Of these, 1,220 (0.73%) had a culture-confirmed IED within 30 days post-procedure; 517 (0.31%) had culture-confirmed BIED (of whom 454 [88%] had BIED-UTI), with 703 (0.42%) having culture-confirmed NBIED-UTI. In total, 1,157 patients (0.69%) had culture-confirmed IED-UTI with or without bacteremia. Baseline characteristics of these subsets were similar to the overall population. Prevalence of ExPEC10V O-serotypes (O1, O2, O4, O6, O8, O15, O16, O18, O25, and O75) was 58%.

Conclusion: This study confirms current literature, showing a significant risk of IED following TRUS-PB and further characterises the prevalence of different types of IED and O-serotypes. These data may guide targeted development of an ExPEC vaccine against IED.

MP-00.06

Feasibility of Personalized Peptide Vaccination for Urothelial Cancer Patients Without Distant Metastasis as a Preventive Cancer Vaccine

Suekane S, Ueda K, Nishihara K, Noguchi M, Yutani S, Shichijo S, Itoh K, Igawa T

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Introduction and Objective: Urothelial carcinoma (UC) is a cancer that is easy to relapse due to the theory of multicentric occurrence and the theory of intracavitary seeding cancer cells. We verify whether personalized peptide vaccination (PPV) which has a recurrence prevention effect of UC patients without distant metastasis.

Materials and Methods: This study was a phase II clinical trial of PPV to administer four peptides with peptide-specific IgG antibody confirmed for UC patients from 2008 to 2016. We examined the recurrence-free time, the distant metastasis-free time and the overall survival time in UC patients without distant metastasis.

Results: Of 30 UC patients without distant metastasis, median age was 67 years (43-89) in 21 males and 9 females. Clinical stage I was 14 patients, stage II was 5 patients, stage III was 11 patients, 23 renal pelvic ureteral cancer patients, and 7 bladder cancer patients. The median recurrence-free time in all patients was 21.1 months (95%CI, 6.1-42.5) and the median overall survival time (MST) was 55.0 months (96%CI, 12.3-not reached). The MST of 10 UC patients without recurrence did not reach the median, and the MST of 20 UC patients with recurrence was 20.2 months (p= 0.0402). The median distant metastasis-free time was 21.1 months, the clinical stage I was 36 months, stage II was 23.8 months, and stage III was 6.1 months (p= 0.0363). The median recurrence-free time was 37.2 months (95% CI, 12.6-81.1) in 19 UC patients without chemotherapy before PPV, and that of 11 UC patients with chemotherapy before PPV was 6.1 months (95% CI, 1.8-8.6) (p<0.0001). The MST did not reach the median (19% CI, 55.0 - not reached) in 19 UC patients without chemotherapy before PPV, and that of 11 UC patients with chemotherapy before PPV was 10.9 months (95% CI, 6.8-20.2) (p<0.0001). The peptide-specific IgG antibody titers showed an enhancing effect both before PPV, after 1 cycle PPV, and after 2 cycles PPV. The peptide-specific IgG titers of 19 UC patients without chemotherapy before PPV were significantly enhanced as compared to that of 11 UC patients with chemotherapy before PPV (p= 0.02, p= 0.03, p= 0.03). Only 4 patients (13.3%) in 30 UC patients without distant metastasis newly observed distant metastasis after PPV.

Conclusion: These results suggest that the PPV might contribute to prevent the recurrence of UC patients without distant metastasis.

MP-00.07

Robot-Assisted Partial Nephrectomy Across the Channel: Analysis of Patient Characteristics and Perioperative Outcomes from the UK and France

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Introduction and Objective: Partial nephrectomy (PN) is recommended for the treatment of kidney cancers less than 7 cm. Recently, this has become more feasible with the use of the surgical robot. The aim of this study is to investigate and compare patient characteristics and perioperative outcomes of robot-assisted partial nephrectomy (RAPN) in the UK National Health Service (NHS) and the French healthcare systems.

Materials and Methods: Records were extracted from the British Association of Urological Surgeons (BAUS) and the French Kidney Cancer Research Network (UroCCR NCT03293563; CNIL-DR-2013-206) databases for all patients who underwent RAPN between January 2014 and December 2016 in the ten highest-volume centres in the UK and UroCCR network. Patient characteristics were age, sex, body mass index (BMI), ASA, the rate of incidental discovery, indication for PN, TNM stage and whether or not the patient had a preoperative biopsy. Perioperative outcomes included ischaemia type (warm, cold or zero), mean warm ischaemia time (WIT), operating time (OT), estimated blood loss (EBL), transfusion rate, intraoperative complications, conversion-to-open rate, length of hospital stay (LOS), positive surgical margin (PSM) rate, histological subtype, Fuhrman grade and the occurrence of postoperative complications.

Results: A total of 1181 RAPNs in the UK and 956 in France were performed by the ten highest volume RAPN centres. A greater proportion of RAPNs were undertaken for absolute indications in France compared to the UK ($p < 0.05$) and patients in France had more advanced tumour stage ($p < 0.05$). In France, histological Grade was higher than in the UK, in keeping with the more advanced tumour stage ($p < 0.05$). Operative times were longer in France than the UK, but warm ischaemia times were shorter ($p < 0.05$). Estimated blood loss was significantly higher in France compared to the UK ($p < 0.05$) and there was a trend to higher transfusion rate. The postoperative complication rate was reported to be higher in France than the UK (17.8% vs 10.2%, $p < 0.05$).

Conclusion: RAPN characteristics varied between France and the UK, which might be accounted for by the degree of experience with RAPN, progress along the learning curve, and more challenging cases being undertaken.

MP-00.08

Prediction of Pentafecta Achievement Following Laparoscopic Partial Nephrectomy: Implications for Robot-Assisted Surgery Candidates

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Introduction and Objective: In clinical practice, objective basis for the choice between laparoscopic partial nephrectomy (LPN) and robot-assisted partial nephrectomy (RAPN) is scarce. The objective is to evaluate surgical outcomes, assess the individual benefit from LPN to RAPN, which can guide clinical decision-making.

Materials and Methods: Patients who underwent LPN or RAPN for a localized renal mass in our center between Jan 2013 and Dec 2016 were included. The surgical outcome of LPN and RAPN was the pentafecta achievement. A multivariable model was fitted to predict the probability of pentafecta achievement after LPN. Model-derived coefficients were applied to calculate the probability of pentafecta achievement in case of LPN among patients treated with RAPN. Locally weighted scatterplot smoothing method was applied to plot the observed probability of pentafecta achievement against the predicted pentafecta probability in case of LPN.

Results: A total of 1,393 patients were included, 790 of them underwent LPN, 603 of them underwent RAPN. RAPN group had a significantly higher pentafecta achievement (54.6% vs. 41.1%, P< 0.001) than LPN. Multivariable analyses identified that tumor size, distance of the tumor to collecting system or sinus, and preoperative eGFR were independent predictors of pentafecta after LPN. According to these three variables, the nomogram for predicting pentafecta after LPN was established. The calibration performed well, and the C-index was 0.66. All patients can benefit from LPN to RAPN (P < 0.001). When RAPN was chosen over LPN, the increase in the probability of pentafecta achievement was greatest in intermediate-probability (30-50%) patients. With the increase or decrease of the probability of pentafecta, the benefit of RAPN decreased.

Conclusion: When pentafecta achievements are assessed, the benefit of RAPN over LPN varies from patient to patient. Patients at intermediate-probability of pentafecta achievement after LPN benefit the most from robotic surgery, which may be the potential ideal candidates for RAPN. The proposed method can be used to guide surgical approach-choosing for individual patients.

MP-00.09

Low-Intensity Extracorporeal Shock Wave Therapy in Patients with Erectile Dysfunction

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Introduction and Objective: The aim of present study was to evaluate the efficacy and safety of low-intensity extracorporeal shock wave therapy (Li-ESWT) in patients with erectile dysfunction (ED).

Materials and Methods: The present randomized, sham controlled, double-blind prospective study was performed at two referral hospitals. Participants were randomized to receive a placebo treatment or Li-ESWT in a 1:1 ratio for 6 weeks. ED was evaluated at screening, 4 and 7 weeks after treatment. Participants were asked to complete the international index of erectile function (IIEF-EF), questionnaire, erection hardness scale (EHS), and sexual encounter profile questionnaire (SEPQ 2 and 3). The development of complications was investigated.

Results: A total of 95 patients were recruited into this study, 81 participants completed the study. The median change in IIEF-EF domain score in the Li-ESWT group was 4.0 and -1.0 in the sham group (P < 0.0001) at the 7 weeks follow-up. 48% (22/46) of patients had EHS <3, and of these, 77% (17/22) revealed improvement with treatment (P < 0.0001). A significant improvement was verified in the change from baseline in the percentage of "Yes" responses to SEPQ2 and 3 in the Li-ESWT group VS sham group at 7 weeks follow-up (91.3 % vs 69.4 %; $P = 0.0076$ and 50 % vs 14.3 %; $P = 0.0002$, respectively). No patients reported any pain or other adverse event during treatment or follow-up.

Conclusion: Based on our study results, we suggest that Li-ESWT may have a role to improve erectile function. Furthermore, it is safe. We think that Li-ESWT is an attractive new treatment modality for patients with ED.

MP-00.10

The Development of a Validated Patient Reported Outcome Measure (PROM) for Penile Curvature Surgery

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Introduction and Objective: Subjective measures of successful penile curvature surgery are poorly defined. We describe the development of a PROM for patients with stable Peyronie's disease (PD) undergoing surgery in a single centre.

Materials and Methods: Structured interviews identified four domains for assessment - penile appearance (PA), erectile function (EF), sexual relationships and quality of life (GQoL). A RAND consensus group of UK andrologists defined PROM 1. PA questions were created de-novo. EF and GQoL questions were based on IIEF and EQ5-D questionnaires respectively. PROM 1 was piloted on all patients undergoing PD surgery with test-retest design. A second iteration PROM 2 was created after statistical analysis and patient feedback, and retested. Internal consistency was assessed using Cronbach's alpha (CRα). Wilcoxon Signed Rank test were used to assess test-retest consistency. Variability and bias were assessed using a Bland Altman plot.

Results: PROM 2 was completed preoperatively by 102 men with response rates >90%. CRα for PA showed consistency (0.60) omitting length and pain questions. ED and sexual relationship constructs showed consistency (CRα= 0.92, 1.43). GQoL construct was not consistent (0.12). GQol pain/anxiety questions coupled with erectile pain questions from PA construct showed consistency (CRα= 0.99). Wilcoxon Signed Rank test for PA indicated significant improvements in pain (p= 0.025), and poorer subjectivity of shape (P= 0.005) between test and re-test questions. Variability remained consistent for increasing PA scores.

Conclusion: Relationship and ED questions were answered consistently and demonstrated content validity and reliability. A modified penile appearance domain has been included in the final statistically validated PROM that can now be used.

MP-00.11

Patient Derived Organoid to Model Penile Squamous Cell Carcinoma

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Introduction and Objective: Penile cancer is a rare disease associated with high morbidity and mortality, with penile squamous cell carcinoma (PeSCC) accounting for >95% of penile cancers. Locoregional lymph node status is the most clinically significant prognostic factor. There is limited evidence on which to base management decisions thus in vitro models are critical for the understanding of carcinogenesis, metastasis and assessment of appropriate therapeutics. We aim to establish a panel of pre-clinical models in PeSCC across the spectrum of disease stage and treatment response, to facilitate the study of the molecular drivers of carcinogenesis and the assessment of novel therapeutic agents.

Materials and Methods: Fresh tumor tissue samples from the resection specimens of 16 patients were collected over a 10-month period. This included 16 primary penile cancers with matched lymph node metastasis (LNM) in 3 patients. The organoids are currently in evolution by way serial passaging. The organoids are being systematically validated by cellular morphology, immunohistochemistry staining whole exome sequencing, tumorigenicity studies, human papilloma virus (HPV) profiling and short tandem repeat analysis.

Results: To date we have established 8 organoid lines, 6 from primary tumor and 2 from matched LNM. Once characterized, further investigation into the biology, chemo and radio-sensitivity of the lines will be undertaken.

Conclusion: To our knowledge, these are the first PeSCC organoid models to be established. This proof of principle study represents a strategy for the study of rare cancer phenotypes.

MP-00.12

Non-Transecting Bulbar Urethroplasty with Oral Mucosal Graft

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Introduction and Objective: We have developed the augmented non-transecting anastomotic urethroplasty procedure (ANTABU) for selected long non-traumatic bulbar urethral strictures with an obliterative segment component as an alternative to simply augmenting the entire stricture.

Materials and Methods: Between January 2012 and December 2017, 45 patients underwent ANTABU in a single referral reconstructive urology unit. They were followed up clinically, by flow rate analysis and urethrography. Subjective outcome was assessed by means of a validated Patient Reported Outcomes Measure (PROM) questionnaire. Mean follow-up was 14.8 months (range 12-38.2months). Postoperative urethrography was available in 43 (96%) patients and flow rates in 38 (84%). Pre and postoperative PROMS were filled by 32 (71%) patients. Failure was defined as the need for any re-intervention (including endoscopic) or patient dissatisfaction with the outcome. Surgical technique involves excision of the spongiofibrosis in the tightest segment of a longer bulbar stricture in a non-transecting fashion with the rest of the dorsal stricturotomy augmented with a buccal graft.

Results: 37 (82.2%) strictures were idiopathic, 2 (4.4%) post-TURP and 6 (13.4%) catheter-related. Mean stricture length was 5.4 cm (range 3 – 9 cm). The mean length of obliterative spongiofibrosis excised from the stricture in a non-transecting fashion was 1.2 cm (range 0.5 – 2 cm). The oral graft was harvested from the cheek in 37 (82%) patients and sublingually in 8 (18%). 2 of 43 (5%) patients had radiological evidence of stricture recurrence. Mean flow rate of the cohort at least 1 year postoperatively was 25.4mL/s. 28 of 32 patients (87.5%) reported that they were satisfied or very satisfied with the outcome of their surgery. 1 patient was unable to void due to detrusor failure. 13 (29%) patients developed some degree of post-micturition dribble following their surgery which was tolerable in all. Erectile dysfunction lasting longer than 6 months and requiring treatment was reported in 1 patient (2%).

Conclusion: ANTABU allows excision of the narrowest segment of spongiofibrosis without disrupting the integrity of ventral spongiosal blood flow, reconstituting the urethral plate to a wider calibre, avoiding an almost circumferential substitution in this area. This also permits the use of narrower and shorter oral grafts with reduced donor site morbidity. We have demonstrated excellent results with this technique in the short to intermediate term.

MP-00.13

Liposomal Bupivacaine Local Infiltration for Buccal Mucosal Graft Harvest Site Pain Control: A Single-Blinded Randomized Controlled Trial

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Introduction and Objective: A novel liposomal formulation of bupivacaine is available as a 96-hour delayed release formulation. Given that patient reported pain from the Buccal Mucosal Graft (BMG) harvest site is worst in the first 1-2 days following surgery, infiltration of this medication has the potential to dramatically reduce post-operative pain in these patients. We aim to assess the efficacy and safety of liposomal bupivacaine infiltration on the BMG harvest site in alleviating pain by evaluating the post-operative pain score, narcotic requirement and associated morbidities.

Materials and Methods: After IRB approval, a single-blinded randomized controlled trial was conducted among adult patients with urethral stricture, that were evaluated suitable for substitution urethroplasty using BMG. Patients were randomized using computer generated allocation scheme to group 1 (liposomal bupivacaine) and group 2 (control). Patient demographic and peri-operative data were collected. Outcome assessed were: post-operative day 1 -2 narcotic use, converted as cumulative morphine equivalents on a 24-hour basis. A validated survey with 10-point visual analogue scale for evaluation of patient reported oral pain score, associated oral morbidities, and oral conditions on post-procedural day 1-3 and 1-month follow-up. Fisher-exact test and independent T-test was used to analyze the data with statistical significance set at 0.05 level. (Clinicaltrials.gov registration NCT03720223)

Results: A total of 50 eligible patients were enrolled, 7 were excluded according to predefined exclusion criteria (Group 1: 21, Group 2: 22). No significant baseline characteristics difference was noted between the treatment groups. Compared to group 2, a significantly lesser narcotic requirement was noted among the patients in group 1 on post-op day 1 (IV Morphine equivalent mean difference 8.58; 95%CI 1.59, 15.56, p=0.017). No significant between group difference was noted for narcotic requirements on post-op day 2. Likewise, no between group difference was noted for post-procedural oral pain score, and oral morbidities on post-op day 1 to 3, and at 1-month follow-up. For post-procedural oral conditions, a significantly higher number of patients in group 1 have reported oral numbness at post-op day 2 (14 (87.5%) vs 8 (44.4%); p=0.013), which was not sustained and equivalent to group 2 at 1-month follow-up.

Conclusion: Our study showed that Liposomal bupivacaine infiltration to the BMG harvest site is safe and may adequately address the postprocedural oral pain, with noted significantly fewer narcotic requirements at post-op day 1. Although, higher incidence of oral numbness can be reported among these patients on post-op day 2, which was not long-lasting. Future studies may consider evaluating the cost-effectiveness to determine suitability for routine use.

MP-00.14

Pericyte-Derived Exosome Regenerates Cavernous Tissue and Restores Erectile Function in Diabetic Mouse

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Introduction and Objective: Therapeutic potential of exosomes as bio-nanoparticles was recently unveiled in animal models for cardiovascular diseases and neuropathies. We have found that pericytes are abundantly distributed in the erectile tissue and play important roles in regulation of penile erection, including promoting angiogenesis and neural regeneration through interacting with endothelial cells (Diabetes 2018, Sci Rep 2015). We, herein, investigated whether and how pericyte (PC)-derived exosome restores erectile function in diabetic mice.

Materials and Methods: PCs were harvested from mouse corpus cavernosa and cultured. The cell suspension was sequentially extruded through ultrafine filtering and two-step OptiPrep gradient technique to acquire purified exosomes as nanovesicles. Diabetes was induced by intraperitoneal injection of streptozotocin into 8-week-old C57BL/6 male mice. At 8 weeks after the induction of diabetes, the animals were distributed into 3 groups: control nondiabetic mice and diabetic mice receiving two successive intracavernous injections of PBS (days -3 and 0; 20 μL) or PC-derived exosome (days -3 and 0; 5 μg in 20 μL of PBS). Two weeks after treatment, we measured erectile function by electrical stimulation of the cavernous nerve. The penis was harvested and stained with antibodies to PECAM-1, smooth muscle α-actin, NG2, and βIII-tubulin. We also determined angiogenic potential of PC-derived exosome in an ex vivo aortic ring assay and in primary cultured mouse cavernous endothelial cell (MCEC) and pericyte (MCP) mono-culture or co-culture system in vitro.

Results: Intracavernous injections of PC-derived exosome significantly improved erectile function in diabetic mice, which reached up to 91% of control values. PC-derived exosome induced significant restoration of cavernous contents of endothelial cells, smooth muscle cells, pericytes, and neuronal cells in diabetic condition. Moreover, it promoted microvascular sprouting from aortic ring and accelerated tube formation in primary cultured MCEC and MCP mono-culture or co-culture system in vitro.

Conclusion: PC-derived exosome successfully restored erectile function through enhanced cavernous angiogenesis and neural regeneration in diabetic mice. Intracavernous delivery of exosomes derived from cavernous tissue can be a good strategy for the treatment of intractable ED in a near future.

MP-00.15

Extraintestinal Pathogenic Escherichia coli Disease Following Transrectal Ultrasound Prostate Biopsy: An International Prospective Analysis

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Introduction and Objective: Extraintestinal pathogenic Escherichia coli (ExPEC) is a leading cause of invasive infections in adults. Invasive ExPEC disease (IED), in particular, bacteremia, is widely reported in patients undergoing transrectal ultrasound-guided prostate biopsy (TRUS-PB). ExPEC10V is a 10-valent vaccine candidate in development for prevention of IED. This study evaluated incidence of IED in patients undergoing TRUS-PB, O-serotype distribution, antibiotic-resistance profiles of associated *E. coli* isolates, and prevalence of specific vaccine-covered O-serotypes.

Materials and Methods: This prospective, non-interventional study enrolled adult men (18 years) undergoing TRUS-PB in USA, Canada, Japan, and 5 EU countries. The TRUS-PB procedure was performed according to local policy, including preferences of prophylactic antibiotics. Data collection during the 30-day post-biopsy period included IED episodes, defined as microbiological confirmation of E. coli in any sterile site, including blood, and/or E. coli in urine with no other identifiable site of infection and reporting fever or hypothermia, or 2 predefined clinical symptoms. Prevalence of E. coli O-serotypes, percentage of strains resistant to different antibiotics and percentage of multi-resistant E. coli strains were summarized.

Results: Total of 4951 patients were enrolled, and 4935 (99.7%) underwent TRUS-PB (95.1% received prophylactic antibiotics); 98.9% completed the study (US= 29.3%, Czech Republic= 17.5%, Japan= 16.2%, Poland= 13.9%) with mean age, 66.9 years (White= 76.1%, Asian= 18.2%, African-American= 4.0%). Overall incidence of IED was 0.67% (33/4935 patients; 95% CI: 0.46-0.94%); highest incidence was in US (2.4%, 11/457). Prevalence of ExPEC10V O-serotypes (O1, O2, O4, O6, O8, O15, O16, O18, O25, O75) 52.0% (95% CI: 31.3%-72.2%). Isolates were resistant to 1 antibiotic for 22 patients (88%; 95% CI: 68.8-97.5%), 2 antibiotics for 21 patients (84%; 95% CI: 63.9-95.4%), and 3 antibiotics for 13 patients (52%; 95% CI: 31.3-72.2%). E. coli isolates showed highest resistance rates to levofloxacin and ciprofloxacin (76%; 95% CI: 54.8-90.6% for both).

Conclusion: This international study provides current estimates of IED incidence following TRUS-PB. E. coli O-serotype distribution and associated antibiotic-resistance profiles from IED cases in the 30 days following TRUS-PB may guide antibiotic use and development of a prophylactic vaccine.

MP-00.16

A Comparative Evaluation of Video Endoscopic Inguinal Lymphadenectomy (VEIL) vs. Conventional Inguinal Lymphadenectomy (CIL) in Penile Carcinoma

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Introduction and Objective: Presence and magnitude of the inguinal nodal metastases are the most important determinants of the oncologic outcome in patients with penile cancer. Conventional open inguinal lymph node dissection (CIL) is associated with major complications. Video Endoscopic Inguinal Lymphadenectomy (VEIL) is a novel technique in which we try to remove lymph nodes by endoscopic surgery. We plan to do prospective comparative study of VEIL v/s CIL in patients having carcinoma penis with clinically impalpable as well as palpable low volume inguinal lymph nodes.

Materials and Methods: Total 25 patients of Penile Carcinoma were enrolled from 2012 to 2018 mean age 51 yr (38 years to 68 yrs). CIL was performed on one side and VEIL on other side of each patient. Perioperative Results of two groups were compared.

Results: Operative time for CIL vs VEIL is 77 v/s 139 minutes. Intra operative complications are 0% in both gps. Skin related complications are 0 % in VEIL while in CIL gp has 30 % Superficial skin changes, 20 % skin dehiscence & 15 % Lymphorea. Mean Lymph Node yield in CIL & VEIL is 9.1 v/s 9.8. Mean drain duration is 4.3 vs 7.5 days and drain output is 80 ml Vs 128 ml in CIL v/s VEIL.

Conclusion: In our early experience, VEIL is a safe and feasible technique in patients with penile carcinoma with non-palpable and palpable low volume inguinal lymph nodes. It allows the removal of inguinal lymph nodes within the same limits as in conventional surgical dissection and potentially reduces perioperative surgical morbidity with comparable oncological outcome.

Moderated ePosters Session 1 Prostate Cancer

Friday, October 18, 2019
1400–1530

MP-01.01

Knockdown of COPS3 Inhibits the Proliferation, Migration and Invasion of Prostate Cancer Cells

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Introduction and Objective: To assess the function of COPS3 in prostate cancer, and explore the mechanisms underlying it.

Materials and Methods: The protein expression of COPS3 in prostate cancer tissues and paired adjacent normal tissues were analyzed by immunohistochemistry. COPS3 mRNA and protein in prostate cancer cell lines (DU145 and PC3) were checked using qRT-PCR and Western Blotting respectively. CCK-8 and clonal formation assay were performed in DU145 and PC3 cells after knockdown COPS3 by si-RNAs. Western Blotting was performed to investigate the molecule mechanism related with proliferation of renal carcinoma cell after knock-down of COPS3.

Results: Our work discovered that the protein expression of COPS3 in prostate cancer tissues was higher than that in the matched non-tumor prostate tissues. In addition, tissues from bone metastasis of prostate cancer had a high percentage of overexpressing COPS3. After knockdown of COPS3 gene in DU145 and PC3 cells, two classic human prostate cancer cell lines which had a high level of COPS3, the abilities of migration, invasion and proliferation were inhibited. Finally, after knockdown the expression of COPS3, protein levels of phosphorylated P38 MAPK and N-cadherin was significantly decreased, and the protein levels of E-cadherin was significantly increased.

Conclusion: In conclusion, COPS3 may be closely related to the metastasis of prostate cancer. Knockdown of COPS3 inhibited the progress of Epithelial-Mesenchymal Transition (EMT) in PCa cells through reducing the levels of phosphorylated P38 MAPK.

MP-01.02

A Polymeric Paste-Drug Formulation for Focal Treatment of Prostate Cancer

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Introduction and Objective: Focal therapy (FT) has emerged as a treatment option for low- to intermediate risk prostate cancer (PCa), to balance risks for urinary and sexual morbidity of radical treatment with the psychological burden of active surveillance. In this context, we developed ST-4PC, an injectable, polymeric paste formulation containing docetaxel (dtx) and biclutamide (bic) for image guided FT of PCa. The objective of this work was to evaluate the in vitro characteristics and in vivo toxicity and efficacy of ST-4PC.

Materials and Methods: In vitro drug release was evaluated using high-performance liquid chromatography. In vivo toxicity of blank and drug-loaded ST-4PC was assessed in mice and rats. Tumor growth inhibition was evaluated in LNCaP s.c. and LNCaP-luc orthotopic xenograft models. Mice were monitored weekly for weight loss, tumor volume (TV) and serum PSA. For the orthotopic model, mice were additionally monitored for bioluminescence.

Results: ST-4PC demonstrated a sustained and steady release of the incorporated drugs with 50% dtx and 20% bic being released after 14 days. No systemic toxicity was observed. Dtx dose dependent local side effects were observed in the s.c. but not in the orthotopic model illustrating the limitations of s.c. models for the evaluation of local cytotoxic therapy. Full dose ST-4PC (1/4% dtx/bic) significantly reduced TV, serum PSA and bioluminescence compared to both, blank paste control and 1/4% dtx/bic dissolved in a non-sustained release formulation.

Conclusion: Image-guided FT using ST-4PC demonstrated promising inhibition of PSA progression and tumor growth and has shown to be safe in vivo warranting further clinical evaluation.

MP-01.03

The Predictive Value of Lesion Size for Prostate Cancer Detection by MRI/TRUS Fusion Guided Biopsy.

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Introduction and Objective: To describe the effect the size of prostate lesions found using multiparametric magnetic resonance (mpMRI) has on the detection rate of (clinically significant) prostate cancer (CSPCa) using MRI/US fusion biopsy.

Materials and Methods: A total of 536 patients scheduled for prostate biopsy for elevated total PSA were analysed. All patients underwent multiparametric MRI (evaluated by PIRADS v1 system) prior to biopsy. MRI/US fusion guided biopsy was followed by systematic 12 core biopsy in all patients. We evaluated the sizes of mpMRI detected lesions and detection rates of PCa and CSPCa in targeted biopsies with lesions smaller than 5 mm, 5 - 10 mm, 10 - 15 mm, and larger than 15 mm. The mean patient age was 63 (31-80) years. Mean PSA was 8.94ng/mL. Mean prostate volume and volume of transitional zone was 62.3 mL and 34.5 mL respectively. In 107 patients with benign or low-risk lesion (PIRADS 0-2), targeted biopsy was not performed and they were excluded from subsequent evaluation, leaving 429 patients with PIRADS 3-5 lesions for assessment.

Results: We found 392 PIRADS 3 lesions with an average volume of 0.33 cm^3, 271 PIRADS 4 lesions with an average volume of 0.99 cm^3, and 66 PIRADS 5 lesions with an average volume of 3.9 cm^3. The results of the detection of overall prostate cancer and CSPCa for defined lesion diameters in individual PIRADS groups are presented in the following table.

Conclusion: In PIRADS category 4 and 5, larger lesion size increases the detection rate of (clinically significant) prostate cancer. This, however, is not true for PIRADS 3 lesions. Lesion size should therefore not be used for prediction of the presence of prostate cancer in PIRADS category 3 lesions or patient pre-biopsy triage.

MP-01.04

The Role of 68Ga-PSMA Positron Emission Tomography/Computerized Tomography for Preoperative Lymph Nodes Staging in Intermediate/High Risk Patients with Prostate Cancer: A Diagnostic Meta-Analysis

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Introduction and Objective: To comprehensively evaluate the accuracy of ^{68}Ga-PSMA positron emission tomography/computerized tomography (PET/CT) for preoperative lymph node staging using histological results of dissected lymph nodes as reference standard in patients with intermediate/high risk of prostate cancer (PCa).

Materials and Methods: A systematic search of PubMed (Medline), Embase (Ovid), and the Cochrane Library were searched up to February 2019. We included studies investigating the accuracy of 68Ga-PSMA PET/CT in primary lymph node staging before radical prostatectomy (RP) and pelvic lymph node dissection (PLND). The pooled sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and the summary receiver operating characteristic (SROC) curve with an area under the curve (AUC) of 68Ga-PSMA PET/CT test were calculated.

Results: Eight studies comprising 523 patients were identified. Based on per-patient analysis, the sensitivity and specificity for 68Ga-PSMA PET/CT in primary staging ranged from 0.38 to 1.00 and from 0.67 to 1.00, reaching a pooled sensitivity of 0.71 (95% CI: 0.49–0.86) and a pooled specificity of 0.93 (95% CI: 0.85–0.97). Overall accuracy was revealed by the SROC curve with AUC of 0.93 (95% CI:0.90–0.95). Using one lymph node as unit, the pooled sensitivity and specificity was 0.70 (95% CI: 0.49-0.85) and 0.99 (95% CI: 0.96-1.00), respectively. Overall accuracy was revealed by the SROC curve with AUC of 0.96 (95% CI: 0.94-0.98). Pooled PPV and NPV all reached above 0.8. Additional sensitivity analysis by excluding heterogenous studies revealed comparable results.

Conclusion: Patients without lymph node metastatic status can rarely be misdiagnosed by 68Ga-PSMA PET/CT. However, the relatively low sensitivity of 70%, though superior to those for traditional imaging approaches, are not strong enough to forgo lymph node staging by PLND.

MP-01.05

PSMA Tc-99m SPECT vs Ga-68 PET for the Staging of Prostate Cancer: A Pilot Case Series

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Introduction and Objective: Prostate Specific Membrane Antigen (PSMA) scans are becoming increasingly prevalent for primary staging of prostate cancer or following biochemical recurrence. The most commonly utilized modality remains Gallium-68 PET which requires a PET scanner which are less readily available. PSMA bound to Tc-99m is a more recent development which requires a SPECT scanner which are more prevalent and cheaper. We aimed to compare the imaging findings in patients undergoing PSMA scans with both modalities.

Materials and Methods: Analysis of a prospective database of all patients undergoing a Tc-99m PSMA scan was used to identify patients undergoing concurrent Ga-68 PSMA PET scans between June 2017 and August 2018. Patients were included if the 2 PSMA modalities were performed within 3 months of each other. Demographic data and imaging findings were collected for analysis. Data were analysed using SPSS 24.0

Results: Six patients underwent both PSMA Tc-99m and Ga-68 scans within 3 months of each other. Five were done for primary staging while one was performed for biochemical recurrence. In the primary staging group, one case had localized disease on Ga-68 PSMA while Tc-99m PSMA showed a single external iliac lymph node metastasis. Histopathology showed the Tc-99m scan to be correct with positive lymph node metastasis found at radical prostatectomy and lymph node dissection. Two cases showed localized disease only on both Ga-68 and Tc-99m PSMA. One case showed widespread bony and lymph node metastasis, though the volume of disease was slightly higher on Ga-68 compared to Tc99m PSMA. One further case showed the presence of a sacral lymph node metastases on both Ga-68 and Tc-99m PSMA. For the patient with biochemical recurrence both, the Tc99m and Ga-68 scan showed no evidence of recurrent or metastatic disease.

Conclusion: Our study is the first Australian study to directly compare Ga-68 to Tc-99m PSMA imaging. It shows early evidence that Tc-99m PSMA may be a suitable alternative to Ga-68 with the additional benefits of lower cost and more widespread availability of the required SPECT scanners.

MP-01.06

Who Dies of Localized Prostate Cancer? A Natural History Study in Singaporean Men

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Introduction and Objective: Prostate Cancer (PCa), the third most frequently diagnosed cancer among Singaporean males, accounts for 13.0% of the cancers diagnosed between 2011-2015. There has been little data on the natural history of localized PCa, nor a clear definition of lethal PCa in this population. We aim to describe the natural history of men with clinically localized PCa and which patients are suitable for expectant management.

Materials and Methods: In total, 1679 patients diagnosed with PCa between 2001-2008 were identified from Singhealth's prostate cancer data registry. Patients with non-adenocarcinomatous histology, metastatic disease, definitive local or systemic therapy, absent PSA/histology/T-staging, and unknown cause of death were excluded. Competing risk analysis for cumulative incidence and subdistributional hazard ratio (sdHR) were performed using the Fine-Gray model. Analysis were performed with R 3.5.3.

Results: Overall, 198 patients were analyzed. Median age of diagnosis was 73 (IQR 66-78) years, median PSA 8.9 (IQR 4.5-16.6), median follow up was 10.07 (IQR 5.73-12.4) years; 17 PCa and 79 non-PCa deaths. 110 (55.6%), 80 (40.4%) and 8 (4.0%) had Charlson Comorbidity Index (CCI) 0-3, 4-6 and 7; 91 (46.0%), 63 (31.8%), 37 (18.7%) and 7 (3.5%) had low-, intermediate-, high-risk and locally advanced PCa. Cumulative incidence of overall mortality, PCa mortality and non-PCa mortality was 42.1%, 11.8% and 49.1%. Age, comorbidities and CCI was statistically significant for non-PCa mortality. sdHR of non-PCa mortality with CCI and D'Amico risk classification as a competing risk regression model was significant for CCI 4-6 (sdHR 3.02 CI 1.87-4.88, p <0.01) and CCI 7 (sdHR 7.50 CI 2.66-21.18, p <0.01). PCa mortality of D'Amico high-risk PCa patients with CCI 0-3 and 4 was 55.6% and 14.6% (p= 0.026). sdHR of PCa mortality in this population was significant for CCI 0-3 (sdHR 3.55 CI 1.08-11.7, p= 0.036).

Conclusion: In this cohort of older men treated conservatively, those with CCI 4 had a significant risk of non-PCa mortality; a more conservative approach should be strongly considered for these patients. On the other hand, men with high-risk PCa and CCI 3 are likely to die of prostate cancer and may represent candidates for aggressive treatment.

MP-01.07

High Prevalence of Residual Tumor in the Prostate after Contemporary Systemic Therapy

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Introduction and Objective: Systemic treatment can have significant survival benefits when used early for metastatic hormone-sensitive prostate cancer. Whether local therapy in this setting adds benefit is unclear. Effectiveness of aggressive systemic therapies in local control is a relevant topic. We tested the hypothesis that tumors in the prostate may not be eradicated by aggressive systemic treatment.

Materials and Methods: We conducted a systematic review of neoadjuvant trials of chemo- and hormonal- therapies in prostate cancer focusing on evaluation of pathological outcome measured by pT0 rates.

Results: Docetaxel and hormonal therapies resulted in pT0 rates of 2.0% and 3.6%, respectively. In spite of a substantially decreased intra-prostatic androgen after new androgen targeted therapies (abiraterone), pT0 rate remained low at 5.5%. High Gleason score was an independent predictor for poor pathological response to systemic treatment (adjusted p=0.01).

Conclusion: Given the high prevalence of residual tumor in the prostate after aggressive systemic treatment (docetaxel or new androgen targeted therapy), it seems reasonable to test whether definitive control of the primary tumor may contribute to delayed progression when combined with contemporary systemic treatment for men with metastatic hormone-sensitive prostate cancer.

MP-01.08

KDM6B is Negatively Regulated by AR and Prompt Prostate Cancer Progression via Demethylation of H3K27 at the CCND1 Promoter

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Introduction and Objective: KDM6B, as a stress-inducible H3K27me3 demethylase, plays an oncogenic or antitumoral role in malignant tumors depending on different cell types. However, how this histone modifier affects the progression of prostate cancer and its specific mechanism are still unknown. We aim to explore the role of KDM6B in the progression of prostate cancer and the underlying mechanism.

Materials and Methods: The public databases and the microarray were used to assess the clinical relevance of KDM6B. The role of KDM6B in the progression of prostate cancer was studied in vitro and in vivo. The mechanism was then explored by CHIP-assay, IP and Mass spectrometric analysis.

Results: We systemically using clinical data, in vitro cellular biological researches and in vivo mouse model to reveal the oncogenic role of KDM6B in prostate cancer. KDM6B could serve as a predictor for the early recurrence of prostate cancer. Additionally, GSK-J4, as the inhibitor of KDM6B, could suppress the vitality and progression of prostate cancer, and can serve as a promising agent for the treatment of prostate cancer. Mechanistic exploration reveals that AR decreases the transcription of KDM6B, and KDM6B combined with smad2/3 prompts the expression of CCND1 via demethylating H3K27me3 on the promoter of CCND1.

Conclusion: KDM6B could serve as a predictor for the early recurrence of prostate cancer. KDM6B could be a novel therapeutic target for the intervention of PCa progression.

MP-01.09

An ABL Kinase- AXL-AKT Signaling Axis Regulates the Metastatic Capacity of Castration-Resistant Prostate Cancer

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Introduction and Objective: We have previously shown that ABL family kinases suppress the malignant behavior of metastatic castration-resistant prostate cancer (mCRPC) via inhibition AKT activity. But how loss of ABL kinase signaling activates the AKT signaling pathway and the impact on metastatic capacity in vivo was unknown. The objectives of this study were to determine the effect of ABL kinase

loss-of-function on metastasis and identify signaling mechanisms linking ABL to AKT.

Materials and Methods: In our pre-clinical model of mCRPC, we used a matched set of GFP-labeled ABL deficient tumor cells to monitor metastasis after orthotopic implantation in mice. We mined our reverse phase protein microarray dataset for signaling proteins that could link ABL kinases to AKT and used pharmacological inhibition and immunoblotting to validate candidates in 3D growth assays that simulate metastatic outgrowth in vivo.

Results: ABL deficient tumor cells displayed dramatically increased dissemination from the orthotopic implantation site to visceral organs, including lung, liver, and kidney. Stable depletion of both ABL kinase isoforms by RNAi produced the strongest effect, indicating that ABL1 and ABL2 cooperate to limit metastasis in vivo. In addition to AKT pathway activation, we now find that AXL, a receptor tyrosine kinase that potently signals to AKT, is upregulated in ABL-deficient mCRPC cells. BGB324, an AXL inhibitor under clinical investigation, abolishes the growth of ABL-deficient mCRPC cells in a 3D matrix.

Conclusion: Our results confirm that ABL kinases can function as metastasis suppressors *in vivo* and identify AXL, a receptor tyrosine kinase linked to therapy resistance in multiple cancers, as a potential target in aggressive mCRPC.

MP-01.10

Identifying Cupric Oxide as a Potential Anti-Metastasis Drug for Prostate Cancer Through Integrative Bioinformatics Analysis and Compound Library Screening

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Introduction and Objective: Identify compounds that can be used in metastatic prostate cancer and optimize high-throughput drug screening strategies.

Materials and Methods: Metastasis-related modules were identified through weighted gene co-expression network analysis based on microarray GSE 6919. Hub genes were confirmed by QPCR across different prostate cell lines and clinic samples. Pivotal genes were determined through integration of RNA and TF-target associated interactions. Using the DrugBank database, we applied molecular networks to predict drugs that may suppress tumor metastasis. Drug repositioning analysis and confirmation of drug screen were conducted using the compound library. Confirmation of selective cytotoxicity of cupric oxide was carried out via invasion, transwell and apoptosis assay.

Results: We identified 5 metastasis-related modules. Of these modules, two were identified to represent core dysfunction modules in which five hub genes were determined for each module. Five of these 10 genes correlating with prostate cancer progression. In addition, 36 drugs were identified to be potentially active with tumor metastasis. Finally, we identified 4 compounds that have never been reported to be related to cancer therapy. Of these, cupric oxide was determined to have the best chemotherapeutic potential in treating prostate cancer metastasis.

Conclusion: This study introduced a valuable approach for drug discovery which combined bioinformatics methods with screening by the compound library. Cupric oxide showed the best potential in treating prostate cancer metastasis and warrants further investigations.

MP-01.11

Predictive Value of Circulating Tumor Cell Stem Cell Marker CD133 on the Therapeutic Effect of Androgen Deprivation Therapy in Patients with Newly Diagnosed Metastatic Castration-Sensitive Prostate Cancer

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Introduction and Objective: To investigate the predictive value of circulating tumor cell counts and CD133 expression on time to castration resistant prostate cancer (CRPC) in patients with newly diagnosed metastatic castration-sensitive prostate cancer (CSPC).

Materials and Methods: The patients enrolled in this study were all newly diagnosed CSPC patients with high metastatic burden, and were given androgen deprivation therapy (ADT, including luteinizing hormone–releasing hormone analogues and first generation androgen-receptor inhibitors). The age, PSA, number of metastatic lesions and other baseline factors were collected at the time of diagnosis. The CanPatrol technique was used to detect the number and the expression of CD133 of circulating tumor cells (CTCs) in the peripheral blood of patients. The primary endpoint of this study was castration resistance.

Results: A total of 108 patients were enrolled in this study, among which 93 (86.1%) patients had detectable CTCs, and the median number of CTCs was 4. After a median follow-up of 24 months, 90 patients (83.3%) progressed to CRPC. At the end of follow-up, the proportion of patients progressed to CRPC with high CD133 expression was significantly higher than that of patients with low CD133 expression (including no expression) (91.5% vs 77.0%, P= 0.046). The median time to CRPC for patients with high CD133 expression and low expression was 11.0 and 14.0 months, respectively (P= 0.030, Log rank test). Univariate analysis showed that high CD133 expression and metastatic lesions greater than 10 were prognostic risk factors for progression to CRPC (P= 0.039 and 0.025, HR=1.555 and 1.624, respectively); in the multivariate analysis, the high expression of CD133 and the number of metastatic lesions greater than 10 both failed to independently predict time to CRPC, but high expression of CD133 showed a weak trend (HR= 1.460, 95% confidence intervals= 0.954-2.234, P= 0.081).

Conclusion: The high expression of CD133 on CTCs of patients with newly diagnosed metastatic HSPC showed a weak trend of shorter time to CRPC. This result needs further research in larger scale clinical trials.

MP-01.12

Insertion of a Biodegradable Balloon Spacer Between Prostate and Rectum Prior to External Beam and Proton Beam Radiotherapy in the Treatment of Carcinoma of Prostate: Early Experience From a Single UK Centre

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Introduction and Objective: Approximately 38% of patients report RTOG grade 2 or worse bowel toxicity with hypofractionated prostate radiotherapy. We present a prospective review of the safety and efficacy of insertion of a biodegradable balloon spacer between rectum and prostate prior to proton (PBT) or photon therapy in a single UK centre.

Materials and Methods: Between April 2018 and March 2019, 25 consecutive patients underwent insertion of a Bioprotect™ balloon prior to prostate radiotherapy. Mean age was 63 years (range 49 to 76). Median PSA was 7.6 (range 2.2 to 88). Twenty-two patients had localised disease (T1/2), 1 locally advanced (T3a) and 2 metastatic disease (T3b, M1). Twelve patients had hormone therapy prior to implantation. Prostate volumes ranged from 13.8 to 70mls (mean 35.5mls). Anticoagulants (except aspirin) were stopped 7 days prior to implantation. Patients received antibiotics and an enema pre-procedure. A single surgeon implanted all balloons transperineally under general anaesthetic in a dorsal lithotomy position using a bi-planar ultrasound probe and a brachytherapy stepper unit. Blunt dissection was employed to create a space for the balloon between the rectum and Denonvilliers' fascia. Post-implantation, 12 patients had hypofractionated radical PBT and 13 photon VMAT radiotherapy. Toxicity data were prospectively collected using RTOG scoring. Evaluation MRI imaging of the balloons was performed 24 hours post-implant.

Results: The first 10 patients were a 23-hour stay; the last 15 were day cases. All 25 patients had successful balloon implantation. Evaluation MRI showed a mean AP separation of rectum and prostate of 2.1cm (range 1.7 to 2.5cm) and a mean balloon length of 4.5cm (range 4.2 – 4.7cm). Post-operatively, one patient developed transient urinary retention that resolved within 48 hours. There were no wound or implant infections and no haematomas. Mild perineal discomfort occurred in 65% patients in the first 7 days. To date, there have been no reported grade 2 or worse acute rectal toxicities.

Conclusion: Initial results suggest insertion of a BioprotectTM balloon between rectum and prostate is a safe and effective method of limiting acute radiation proctitis in men undergoing radiation therapy for prostate cancer.

MP-01.13

CamPROBE: A Safe, Simple, Affordable Local Anaesthesia Transperineal Biopsy Device

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Introduction and Objective: The primary method of diagnosing prostate cancer (PCa) worldwide is transrectal ultrasound guided (TRUS) biopsy, which is known to cause infections and sepsis. Infection rates are rising due to widespread emergence of antibiotic resistance, producing a health crisis especially in the developing world. The problem is the TRUS biopsy needle repeatedly puncturing the faecal-lined bowel wall. Transperineal (TP) biopsies have revolutionized PCa diagnosis safety as needles puncture the more sterile perineum. They remain underutilized in poorer nations because of prohibitive general anaesthetic costs. The solution is to perform TP biopsies under minimal local anaesthesia (LA) in the out-patient setting, thus saving costs. Here, we describe the development of a bespoke low-cost device to facilitate easy and safe LA TP prostate biopsies.

Materials and Methods: The Cambridge Prostate Biopsy Device (CamPROBE) features an integrated LA delivery needle sheathed within a coaxial cannula designed to penetrate from perineal skin to prostate capsule. The CamPROBE is inserted at only 2 points either side of the mid-line. It is then advanced to the prostate under freehand ultrasound guidance (no gantry/grid required). Removal of the LA delivery needle then allows for a standard biopsy needle via the tapered proximal end of the cannula. It can be repositioned to reach different areas without re-puncture (youtube.com/watch?v=uFrfEm2LxDE&t=5s). The ergonomic design allows easy use by a single operator.

Results: High-quality prostate biopsy cores were taken in 30 men by a surgical steel prototype. There were zero incidences of infection or sepsis. LA use was low (10-15 mLs per patient) and there were no side effects or complications. Procedure time (20-30 minutes) and total hospital time (~1 hour) is suitable for outpatient procedures. Patients tolerate it well (mean pain scores 3/10) and over 85% of men preferred CamPROBE to TRUS. CamPROBE has now been developed into a low-cost disposable device (~$6-13 USD) and is in multi-centre clinical trials. Early data suggests similar performance.

Conclusion: Device costs are low and can be used in any healthcare setting that performs TRUS without any additional consumables. CamPROBE combines the safety of the transperineal route with the affordability of outpatient procedures.

MP-01.15

Outcomes of Pathologically Localized High-Grade Prostate Cancer Treated with Radical Prostatectomy

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Introduction and Objective: Although radical prostatectomy Gleason score (RP GS) is one of the most important prognostic factors for prostate cancer (PC), adjuvant radiation therapy (ART) is recommended for the case with adverse features without considering RP GS. We investigated the outcomes of pathologically localized high grade (GS 8-10) PC and compared those of pT3 GS 7 PC.

Materials and Methods: Of 1,585 men who underwent radical prostatectomy between 1995 and 2015, the cohort was divided into 3 groups: group 1—RP GS 7(3+4) and pT3 in 760, group 2—RP GS 7(4+3) and pT3 in 565, and group 3—RP GS 8-10 and pT2 in 260. We compared biochemical recurrence (BCR), all-cause mortality (ACM), and prostate cancer-specific mortality (PCSM) risk among the groups using Cox regression and competing risk analysis.

Results: At a median follow-up of 58 months (interquartile range 37-85), 721 men experienced BCR and 84 died (22 due to PC). BCR-free survival rates were lower for group 3 compared to group 1 (P <0.001), but there was no difference between group 2 and 3 (P= 0.638). For ACM, there was no difference among the groups. PCSM rates were higher for group 3 than group 1 and 2 (P= 0.001 and P= 0.005, respectively). This association persisted in multivariable models after adjusting for clinicopathological variables.

Conclusion: RP GS 8-10 and pT2 PC showed higher BCR and PCSM rates compared to RP GS 7 and pT3 PC. These findings suggest that localized high-grade PC should be considered in decision of ART.

MP-01.16

A Systematic Review and Meta-analysis of Negative Predictive Value of Multi-parametric MRI as a Pre-biopsy Triage Tool

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Introduction and Objective: Diagnosis for prostate cancer (PCa) has been evolving over the years with new imaging modalities and biopsy techniques being integrated into the pathway. Prostate biopsy is associated with complications. Increasing evidence has been accumulated for the efficacy of multiparametric magnetic resonance imaging (mpMRI) in PCa diagnosis. However, MRI as a pre-biopsy triage test, or its true negative predictive value in prostate cancer, remains controversy and uncertain. The aim of the systematic review is to determine if mpMRI can be used as a pre-biopsy triage tool to avoid unnecessary biopsies.

Materials and Methods: The systematic review was carried out following PRISMA-P standard. Databases searched include Embase, MEDLINE, Cochrane databases. Inclusion criteria are: 1) prospective cohort study or randomised control trials in adult males; 2) all patients had mpMRI followed by prostate biopsy by study design. This may include patients who underwent primary biopsy or patients who previously had negative biopsies. A meta-analysis was carried out to calculate the pooled NPV and PPV of mpMRI in overall and clinically significant PCa. Further subgroup analysis performed include: biopsy naïve vs previous negative biopsy; mpMRI performed with versus without an endorectal coil; TRUS versus TP biopsy approach.

Results: Thirty-four prospective studies were included in the meta-analysis, involving 9,298 men. The median prevalence was 50% for overall cancer and 31% for csPCa. For overall PCa, mpMRI had a pooled NPV of 75.1%, sensitivity of 0.85 [95% CI 0.81-0.89] and specificity 0.53 [95% CI 0.43-0.63]. For csPCa, the NPV was 85%. NPV of mpMRI as a signifcant negative correlation with overall cancer prevalence (r= -0.59, p <0.01). With 30% overall cancer prevalence, the estimated NPV for mpMRI is 89% (0.86-0.92). For csPCa, there is no significant correlation between NPV and csPCa prevalence (r= -0.08, p= 0.76). Meta-analysis suggests that MRI has an estimated NPV of 95% (CI 0.91-0.97) given a csPCa prevalence of 30% and 88% with a 50% prevalence.

Conclusion: MRI may be considered as a pre-biopsy triage test in detecting csPCa and avoiding overdiagnosis of insignificant cancer. In well risk-stratified patients, MRI may have a role to avoid unnecessary biopsies.

Moderated ePosters Session 2 Basic Science/ Infections

Friday, October 18, 2019
1400–1530

MP-02.01

Systemic Infusion of Autologous Adipose Tissue-Derived Mesenchymal Stem Cells in Peritoneal Dialysis Patients: Feasibility and Safety

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Introduction and Objective: Using mesenchymal stem cells (MSCs) is regarded as a new therapeutic approach for improving fibrotic diseases. The aim of this study to evaluate the feasibility and safety of systemic infusion of autologous adipose tissue-derived MSCs (AD-MSCs) in peritoneal dialysis (PD) patients with expected peritoneal fibrosis.

Materials and Methods: This study was a prospective, open-label, non-randomized, placebo-free, phase I clinical trial. Case group consisted of nine eligible renal failure patients with more than two years of history of being on PD. Autologous AD-MSCs were obtained through lipoaspiration and expanded under good manufacturing practice conditions. Patients received 1.2 ± 0.1×106 cell/kg of AD-MSCs via cubital vein and then were followed for six months at time points of baseline, and then 3 weeks, 6 weeks, 12 weeks, 16 weeks and 24 weeks after infusion. Clinical, biochemical and peritoneal equilibration test (PET) were performed to assess the safety and probable change in peritoneal solute transport parameters.

Results: No serious adverse events and no catheter-related complications were found in the participants. 14 minor reported adverse events were self-limited or subsided after supportive treatment. One patient developed an episode of peritonitis and another patient experienced exit site infection, which did not appear to be related to the procedure. A significant decrease in the rate of solute transport across peritoneal membrane was detected by PET (D/P cr= 0.77 vs. 0.73, P= 0.02).

Conclusion: This study, for the first time, showed the feasibility and safety of AD-MSCs in PD patients and the potentials for positive changes in solute transport. Further studies with larger samples, longer follow-up, and randomized blind control groups to elucidate the most effective route, frequency and dose of MSCs administration, are necessary.

MP-02.02

CRISPR/dCas9-Mediated Activation of Multiple Endogenous Target Genes Directly Reprograms Human Foreskin Fibroblasts into Leydig-like Cells

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Introduction and Objective: Recently, Leydig cells (LCs) transplantation reveals a promising strategy for treating male hypogonadism. However, generating functional Leydig-like cells through traditional methods still has some defects for clinical applications. It seems that targeted activation of endogenous gene is more advantageous than ectopic overexpression of the exogenous reprogramming factors. Therefore, the aim of this study was to demonstrate whether targeting the promotor of Nr5a1, Gata4 and Dmrt1 (NGD) could convert the human foreskin fibroblasts (HFFs) into functional Leydig-like cells (iLCs) via the CRISPR/dCas9 synergistic activation mediator system (CRISPR/dCas9 SAM).

Materials and Methods: In the present study, we first constructed the stable Hsd3b-dCas9-MPH-HFFs cell line using the Hsd3b-EGFP, dCas9-VP64 and MS2-P65-HSF1 lentiviral vectors, and further infected it with single guide RNAs (sgRNAs). Next, we evaluated the reprogrammed cells including reprogramming efficiency, the characteristics of testosterone production, expression level of the Leydig steroidogenic markers by qRT-PCR or western blotting.

Results: Our results showed that the reprogramming efficiency was close to 10 percent, the reprogrammed iLCs secreted testosterone rapidly, more importantly responded effectively to the stimulation from human chorionic gonadotropin (hCG) and meanwhile expressed Leydig steroidogenic markers, such as steroidogenic acute regulatory protein (StAR), cytochrome P45017A1 (CYP17A1) and cytochrome P450 cholesterol side chain cleavage (CYP11A1).

Conclusion: Our findings demonstrate that simultaneously targeted activation of endogenous genes NGD are able to directly reprogram HFFs into functional iLCs by the CRISPR/dCas9 SAM technology, and thus it has a promising potential for male androgen-deficient diseases.

MP-02.03

Relationship Between Glomerular Filtration Rate and Bone Mineral Deficiency in Chronic Kidney Disease Patients with Obstructive Uropathy

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Introduction and Objective: The relationship between bone mineral density (BMD) and estimated glomerular filtration rate (eGFR) in medical renal disease is still controversial; in chronic obstructive uropathy this is largely unknown. This study was done to investigate relationship between eGFR and BMD levels in chronic obstructive uropathy with renal insufficiency.

Materials and Methods: This prospective study in a tertiary care institution from December 2016 to September 2018 recruited 100 adult patients with obstructive uropathy and deranged renal function. Surgical/medical renal optimization was done to achieve a nadir serum creatinine before assessing eGFR by EC renal scan. BMD (at lumbar vertebrae L 2 - L4, by DXA Scan) was compared between patients with eGFR[2] (Group A, n= 50) and patients with eGFR >60ml/min/1.73m^2 (Group B, n= 50). Vitamin D levels were also assessed in group A patients. Chi-square, independent t- test/Mann Whitney test, spearman rank correlation coefficient, univariate/ multivariate linear regression tests were applied and SPSS ver21.0 was used for statistical analysis. ROC curves were used to define cut off levels of eGFR for osteoporosis and osteopenia.

Results: Overall a positive correlation was seen between eGFR and BMD in patients with obstructive uropathy (Correlation Coefficient: 0.43, p= 0.0004). BMD, T-score and Z-score were significantly lower in Group A vs. Group B patients (p= 0.0002, p= 0.002 and p= 0.004 respectively). In group A, Vitamin D deficiency and low Vitamin D levels were seen in 38% and 48% patients respectively. On multivariate regression analysis, male gender and eGFR by EC scan were positively associated with BMD in group A (p= 0.002 and p= 0.011 respectively). ROC curves showed cut off values of eGFR of 42.87 ml/min/1.73m^2 and 30.87 ml/min/1.73m2 for osteopenia (sensitivity 74.5%, specificity 63.2%, p= 0.0216) and osteoporosis (sensitivity 70.83%, specificity 80.43%, p< 0.0001) respectively in patients with eGFR < 90 ml/min/1.73m^2.

Conclusion: BMD levels are significantly reduced with reduction in eGFR in chronic renal insufficiency with obstructive uropathy. Those with eGFR < 42 ml/min/1.73m2 and females are at higher risk of BMD loss, warranting adequate pharmacological interventions to decrease fracture risk in such patients with obstructive uropathy.

MP-02.04

Oxidative Stres-Induces Alterations in the Bladder of Rats Treated with Nicotine

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Introduction and Objective: Nicotine is the principal alkaloid of tobacco, is addictive and may have a direct effect on carcinogenesis. Cigarette smoking (CS) is a risk factor for bladder dysfunctions such as incontinence and poor bladder and urethral contraction. Furthermore, CS is proved to induce overproduction of reactive oxygen species. In the present study, we investigated the effects of nicotine-induced alterations in oxidative stress in the rat bladder and whether abstinence may have a beneficial effect.

Materials and Methods: Adult male rats were exposed to nicotine dissolved in drinking water for 10 weeks (100 μg/mL; Nico group; n=10). Another group was treated with nicotine for seven weeks (100 μg/mL) followed by three weeks of abstinence (Abst group; n=10). Control group (n=10) had free access to drinking water during the experimental period which lasted 10 weeks. The animals were sacrificed

and oxidative stress parameters (4-hydroxynonenal (4-HNE); malondialdehyde (MDA); 8- hydroxyguanonisine (8-OHdG)) were evaluated in the bladder by immunohistochemistry (IHC). Cotinine, a metabolite of nicotine, was measured in the serum and the urine. The expression and localization of nerve growth factor (NGF), as a key protein for bladder dysfunction was investigated by IHC.

Results: Nicotine treatment resulted into strong expression of 4-HNE localized both in the urothelium and the smooth muscle cells of the bladder in Nico group, while in Control and Abst groups the expression was mild and localized in the urothelium. MDA showed moderate to strong expression in the urothelium of Nico group, while DNA oxidative damage marker 8-OHdG was strongly expressed both in urothelium and muscle cells area in Nico group. Cotinine levels were significantly decreased in the serum and urine in Abst group compared to Nico group. NGF expression in the urothelium of Nico group was moderate compared to poor expression in the other two groups.

Conclusion: Nicotine treatment for 10 weeks induced upregulation of lipid peroxidation and DNA oxidative stress, all elements of carcinogenesis initiation or bladder dysfunction. Abstinence from nicotine for three weeks could decrease these parameters. Urologists need to inform their patients about the relationship between smoking and urological disease and motivate them to participate in a smoking cessation program as part of their treatment.

MP-02.05

Role of Corticotropin-Releasing Factor on Bladder Function in Rats with Psychological Stress

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Introduction and Objective: Stress-related peptide corticotropin-releasing factor (CRF) and CRF-related peptides are distributed in the peripheral viscera such as the bladder. We investigated the contribution of psychological stress (PS) and CRF on bladder function.

Materials and Methods: Male rats received sham stress (SS) or PS using a communication box method for 120 min every day for 7 days. One group of rats received the intraperitoneal CRF-R1 antagonist antalarmin for 7 days during stress exposure.

Results: Mean voided volume per micturition was significantly lower in PS rats compared to SS rats, which was antagonized by antalarmin treatment. Increases in plasma and bladder CRF, and mRNA expressions of bladder CRF, CRF-R1, and M2/3 muscarinic receptors, were found in PS rats. CRF did not influence bladder contraction in itself; however, stress increased the response of muscarinic contraction of bladder strips. These changes were antagonized by antalarmin treatment.

Conclusion: PS reinforces M3 receptor-mediated contractions via CRF-R1, resulting in bladder storage dysfunction.

MP-02.06

Low Intensity Shockwave Treatment Improves Bladder Receptors' Changes in a Diabetic Rat Model

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Introduction and Objective: The therapeutic potential of low intensity extracorporeal shock wave therapy (LI-ESWT) in erectile dysfunction is being increasingly recognized, with supporting evidence from animal and human studies. However, there is a scarcity of data on the impact of LI-ESWT on the bladder. We used an experimental model of diabetic rats to investigate the molecular effect of LI-ESWT on the diabetic bladder.

Materials and Methods: Fifteen 8-week old male Wistar rats were randomized into 3 groups. A control group (Control bladder CB; n= 5), a group of diabetic rats without treatment (DM, n= 5) and a group of diabetic rats treated with LI-ESWT (DM-ESWT; n= 5). Diabetes mellitus type II was induced by a single intraperitoneal dose of streptozotocin (60 mg/kg). Twenty days after the induction of DM, each rat in the DM-ESWT group received 300 shockwaves with an energy flux density of 0.09 mJ/mm2 at 2 Hz (Medispec ED 1000). Sessions were repeated three times/week for two weeks, followed by a two-week washout period. The bladder was then harvested and quantitative Real Time Polymerase Chain Reaction (qRT-PCR) was performed to analyze the expression pattern of the Transient Receptor Potential Vanilloid 1 (TRPV1), interleukin 1β (IL1b) as well as the muscarinic acetylcholine receptorts M1, M2 and M3 (MAChR1, MAChR2 and MAChR3) in the bladder tissue.

Results: The expression of TRPV1, IL1b, and MAChR2 genes was significantly different between the three groups (p= 0.002, 0.000 and 0.011, respectively). The expression of all genes appeared to be increased in the DM group when compared to CB group, but was statistically significant only for the TRPV1 and IL1b genes (p= 0.002 and 0.000, respectively). Treatment with LI-ESWT significantly reduced the expression of the IL1b and MAChR2 genes (p= 0.001 and 0.011, respectively). A tendency for reduced expression was noted for TRPV1 (p= 0.069) as well.

Conclusion: In this rat model, induction of diabetes was associated with increased expression of bladder receptors related to mechanosensation (TRPV1), inflammation/ischemia (IL1b), and bladder contraction (MAChR2). Treatment of the diabetic rat bladder with LI-ESWT partly restored the expression of TRPV1, IL1b and MAChR2 receptor genes, indicating a possible therapeutic potential of this treatment modality in diabetic cystopathy.

MP-02.07

Anti-inflammatory Effects of Indoleamine 2,3-dioxygenase Inhibition in the Male Genital Inflammation

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Introduction and Objective: Indoleamine 2,3-dioxygease (Ido) catalyzes the first and rate-limiting step of tryptophan catabolism. In a previous study, we showed that the male genital Ido expression in the mice are higher than that of other organs. Ido is induced in various tissues during systemic inflammation and plays a key role in immune response. Anti-inflammatory effects of IDO inhibition for systemic inflammation was already reported, but the effect for local inflammation was still unclear. We investigated anti-inflammatory effects of Ido inhibition using 1-methyltryptophan (1-MT) in the male genital inflammation model.

Materials and Methods: Ten to twelve weeks old C57BL/6 male mice were used through the study. In preliminary examination, we confirmed the effect Ido inhibition using 1-MT 100μg and validity of modeling using lipopolysaccharide (LPS) 100μg. Based on the results of preliminary examination, LPS was injected three hours after 1-MT administration. After modeling, male genitalia were removed in a time-dependent manner. Inflammatory changes were analyzed using comprehensive cytokines/chemokines assay for determining representative candidates. Biochemical and immunohistochemical changes were analyzed using representative candidates.

Results: Histological analysis showed that invasion of inflammatory cells and destruction of ductal structure were observed in the male genital inflammation model of 1-MT(-) mice compared with that of 1-MT(+) mice. Comprehensive cytokines/chemokines assay showed that decreased expression of inflammatory promoting cytokines/chemokines (epididymitis: IL-1α, IL-6, CCL3, CXCL1. Prostatitis: IL-16, TREM-1, CXCL10, CXCL12) were observed in male genital inflammation model of 1-MT(+) mice compared with that of 1-MT(-) mice. Same results were obtained from separate quantitative assay and immunofluorescent staining.

Conclusion: Ido is involved in immunological reactions via cytokines/chemokines in the male genitalia. Inhibition of Ido may contribute to protection of the male genital inflammation. Therefore, Ido inhibitor might be a novel target therapy for the male genital inflammation.

MP-02.08

Changing Paradigms in the Presentation and Outcomes of Emphysematous Pyelonephritis

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Introduction and Objective: Emphysematous Pyelonephritis (EPN) is traditionally associated with high morbidity including need of emergency nephrectomy and mortality rates upto 43%. However, the presenta-

tion, management and prognosis of EPN has changed with time.

Materials and Methods: We retrospectively analyzed the cases of EPN managed at our center from January 2015 to May 2018. We evaluated the age, sex, comorbidities, presence of calculi, fever, laboratory parameters, culture reports, class of EPN (Huang Tseng classification), presence of associated renal abscess, sepsis and signs of septic shock. Our outcome variables included duration of hospital stay, need of elective nephrectomy and mortality. The patients were managed with early empirical antibiotics followed by culture-based treatment. PCD placement was the rule with selected exceptions based on the amount of gas and clinical and laboratory parameters. Selected cases underwent elective nephrectomy during a second admission. We also compared our data to an old cohort at our institute, which was published a decade ago.

Results: We had a total of 66 patients with a median age of 51 years. Fifty-one (77.27%) were diabetics with median HbA1c of 9.25 and median insulin requirement of 57 units/day. Nine patients had renal and 15 had ureteric calculi. The number of patients with EPN classes 1,2,3a,3b and 4 were 6,27,9,18 and 6 respectively. Thirty-six presented with sepsis (47.36%) and 12 developed signs of septic shock/organ dysfunction (15.8%). We had one mortality (1.31%), and this patient had extensive associated necrotizing fascitis. PCD was placed in 63 patients. Median duration of PCD was 12.5 days and it was placed in 66 patients. Median hospital stay was 11 days. No patient needed emergency nephrectomy and 15 (19.76%) underwent nephrectomy on an elective basis. In comparison with our historical cohort, we found similar rates of sepsis but lower rates of organ dysfunction, mortality, emergency nephrectomy and higher rates of PCD placement.

Conclusion: With early empirical coverage and use of percutaneous drainage, EPN has an improved prognosis. Mortality and emergency nephrectomy are rare occurrences, although the affected kidney may be rendered non functional and need elective removal.

MP-02.09

Phosphorylation of CREB in Dorsal Root Ganglia after Uropathogenic Escherichia Coli Infection in Rat Urinary Bladder

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Introduction and Objective: Bladder stimulation induces up-regulation of neurotrophins which may contribute to voiding reflex. Phosphorylated responsive element of binding protein (p-CREB) is an important transcriptional factor in the neurotrophin signaling pathway. Recent study reported that p-CREB was up-regulated in afferent neuron of rat DRG (dorsal root ganglia) by chemical induced cystitis. The aim of our study was to examine the change of p-CREB in rat DRG after repeated uropathogenic Escherichia coli infection of rat bladder.

Materials and Methods: The involvement of CREB signaling in acute and chronic E. coli infection was characterized by measuring p-CREB using a specific antibody. Adult female Sprague–Dawley rats weighing 280 ± 20 g were prepared in this study. Total 19 rats were induced into acute *E. coli* infection (n=7) or into chronic *E. coli* infection (n=6) or control (n=6). After control or *E. coli* infection, all animals were anesthetized and then perfused with 0.05 M phosphate-buffered saline (PBS), followed by 4% paraformaldehyde. After perfusion, the spinal cord and DRG were quickly removed and post-fixed for 6 hours. In DRG from control and acute/chronic cystitis rats, p-CREB cell profiles were counted in 6-10 sections of each DRG. For p-CREB immunoreactivity, DRG cells exhibiting intense nuclear staining were considered positively stained. The cell profiles of p-CREB immunoreactivity in each DRG section were presented as mean ± standard deviations (SD) of the mean.

Results: p-CREB-IR in acute cystitis group did not show significant difference when compared with group A ($p>0.05$). In chronic cystitis group, p-CREB-IR in the L1–L6 and S1 DRG was significantly greater than control ($p<0.05$), and p-CREB-IR in the L3–L6 and S1 DRG was significantly greater than that in acute cystitis group ($p<0.05$). In control and acute cystitis group, p-CREB-IR in the L4-L5 DRG was significantly smaller than the other DRGs ($p<0.05$). p-CREB-IR in the L6 and S1 DRG was significantly greater than L4-L5 DRG among chronic cystitis group ($p<0.05$).

Conclusion: Under repetitive infection, p-CREB expression in DRG cells may be related to the changes in bladder-originated factors, influencing on micturition reflex pathways.

MP-02.10

Renal Salvage, an Achievable Goal in Patients with Emphysematous Pyelonephritis: Outcomes of an Algorithmic Renal Preserving Strategy

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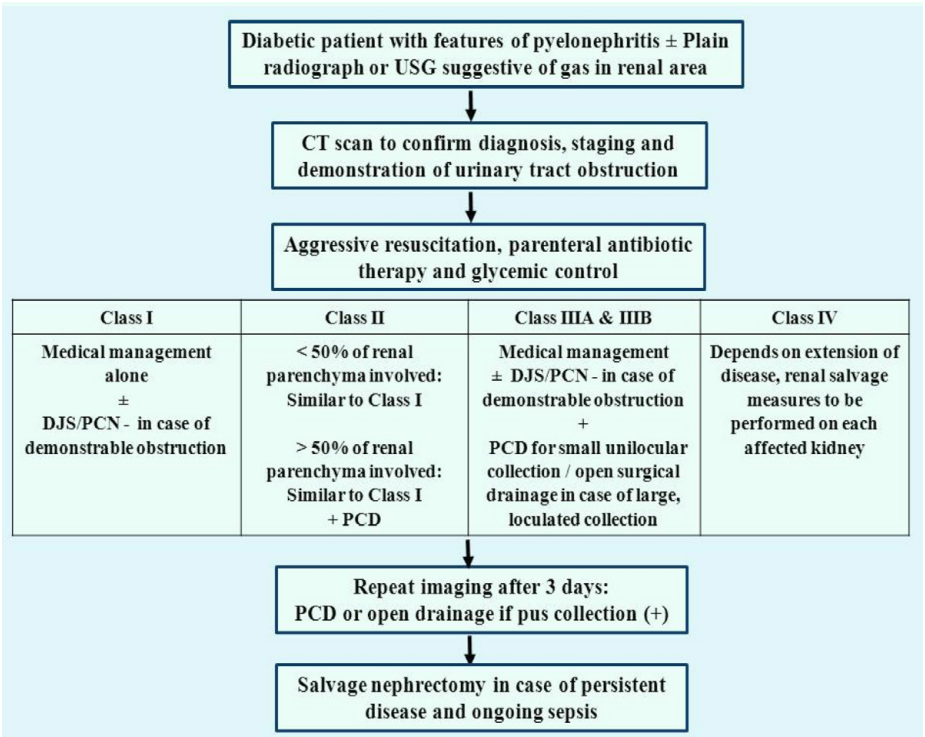
Introduction and Objective: Emergency nephrectomy has been the time-honoured treatment of choice for Emphysematous Pyelonephritis (EPN), a fatal gas forming necrotizing infection. Recent years have seen a shift towards non-extirpative approach aimed to achieve higher rates of renal salvage, limiting the indications for nephrectomy to severe grades of the disease. This study aimed at analysing the outcomes of initial renal preserving measures, algorithmically applied across grades of EPN.

Materials and Methods: We prospectively analysed the clinical data and outcome of 36 consecutive patients of EPN in 4 years study period, treated by initial renal preserving measures which include aggressive resuscitation, parenteral antibiotics, effective drainage of infected fluid/ gas and relieving the urinary tract obstruction. The drainage procedures employed were Double J stenting (DJS), Percutaneous Nephrostomy (PCN), Percutaneous drainage (PCD) of collection and open tube drainage (OTD). Huang-Tseng CT based classification system was used to categorise the patients as well as to employ suitable treatment modality (Figure 1).

MP-02.10, Figure 1. Algorithm of renal salvage protocol in Emphysematous pyelonephritis (EPN)



DJS- Double J stenting, PCN-Percutaneous Nephrostomy, PCD-Percutaneous tube drainage.
USG-Ultrasonography, CT: computerized tomography.
*Class I to IV- Haung Tseng classification

Results: The mean age of the patients was 57.5±12 years with a female preponderance (2:1). Four patients (11%) were managed by Medical Management (MM) alone which includes aggressive resuscitation, glycaemic control, parenteral antibiotics. DJS/PCN was performed in 16 (44%) patients. PCD±DJS/PCN was done in seven (19%) patients and open tube drainage (OTD)±DJS/PCN was done in 8 (22%) patients. Two patients (6%) who initially underwent PCD were subsequently subjected to undergo open tube drainage [OTD] as they had frequent clogging of the drain tube and persistence of collection in the perinephric space. Only two (6%) patients required salvage nephrectomy. The overall survival rate was 94%.

Conclusion: Our hospital based renal preserving strategy not only improved the survival but also decreased the need for Nephrectomy.

MP-02.11

Bacterial Prostatitis is a Significant Finding in Patients with Symptomatic Urethral Stricture Disease

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Introduction and Objective: Urinary tract infections are commonly associated with urethral strictures, but the evidence for bacterial prostatitis is limited to one brief report over 30 years ago.(1) Urethral stricture symptoms and prostatitis-like symptoms are similar and we considered that undiagnosed bacterial prostatitis may be contributing to the patient's presentation.

Materials and Methods: A 3 year prospective observational study was conducted. Male patients with symptomatic penile and bulbar urethral strictures, who were being assessed for urethroplasty, consented to prostate cultures using a three-pot modified Meares and Stamey technique. Patients with concurrent positive urine cultures were excluded. Patients underwent cystoscopic assessment including cystoscopic urine collection (pot 1), stricture dilatation, clean catch urine and prostate massage. Prostate fluid was collected (pot 2) along with post-massage first void urine (pot 3). Samples were individually cultured by a dedicated microbiologist. Culture results were compared with cultures those obtained from a control group of patients with prostatitis-like symptoms over the same time period with no history or evidence of stricture. NIH-prostatitis symptom scores were recorded in both groups. Significance of the cultures was assessed by a dedicated medical microbiologist who was blinded from the patient's clinical presentation. Statistical significance was assessed by Chi square.

Results: 100 patients underwent the 3-pot culture. 57 (Group 1) had a confirmed stricture (15% penile, 56% bulbar, 29% panurethral). 43 (Group 2) had no evidence of stricture. Mean prostatitis symptom scores were 7 for pain, 5 for urinary and 5 for bother in each group. In Group 1, 47% of patients had a uniquely positive bacterial prostate culture with a recognised uropathies, and in Group 2 21%. This finding was statistically significant (p=0.0087). Clean catch urine was positive in 15 % of Group 1 and 2.6% of Group 2.

Conclusion: This study has shown for the first time in contemporary practice, that bacterial prostatitis is present in a large number of symptomatic patients with urethral strictures. It is also confirmed to be a statistically significantly higher incidence than in a cohort of patients with clinical prostatitis alone. We recommend validation of our findings and suggest that patients with urethral strictures should be screened and treated for bacterial prostatitis before any urethral reconstructive surgery is undertaken.

MP-02.12

Risk Factors for Extended-Spectrum Beta-Lactamases in Urinary Tract Infection

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Introduction and Objective: Extended-spectrum beta-lactamases (ESBL) are enzymes that confer resistance to most beta-lactam antibiotics, including penicillin's, cephalosporins, and the monobactam aztreonam. Infections with ESBL-producing organisms have been associated with poor outcomes. Because of increase in use of antibiotics and aging population, the share of ESBLs in urinary tract infections is increasing. In this study, we investigated the prevalence of ESBL-positive in urinary tract infections and risk factors.

Materials and Methods: From January 1 to December 31, 2018, we studied patients who were cultured in urine culture at our hospital. Among these examination, ESBL screening test is conducted if Escherichia coli (E. coli) or Klebsiellosis species are cultured. Besides, we collected patients' age, sex, and underlying diseases (hypertension, diabetes mellitus, central nervous disease, and kidney disease), and whether during hospitalization or not. With this information, we statistically analyzed the correlation with results of ESBL screening using T-test or chi-square test.

Results: During the period, 703 urine culture tests have positive results, and ESBL screening was performed on 410 tests with 358 E. coli (87.3%), and 52 Klebsiellosis species (12.7%). The mean age of the 410 patients was 71.0 years 293 patients were female, and 117 patients were male. In underlying diseases, 210 patients had hypertension, 108 had diabetes mellitus, 105 had central nervous diseases, and 37 had kidney diseases. 76 tests were conducted during hospitalization, and 334 were under outpatient. In sampling methods, 340 urine samples were voided, and 70 samples were catheterized. After ESBL screening tests, 120(29.3%) tests showed positive results. The older the patient was, the higher the probability of ESBL positive (p-value = 0.018). Male patients were more likely to be infected with ESBL-positive microorganisms than female (p-value < 0.001). Infections during hospitalization were more likely to be positive than outpatient (p-value < 0.001). In underlying disease, patients with diabetes mellitus or central nervous diseases were more likely to be infected with ESBL-positive microorganisms than patients without these diseases (both p-value < 0.001). In contrast, patients with kidney diseases were less likely to be infected with ESBL-positive microorganisms (p-value < 0.001). Hypertension showed no statistical significance (p-value = 0.480).

Conclusion: In this study, patients who is male, older, under hospitalization, or with diabetes mellitus or central nervous system diseases were more likely to be infected with ESBL-positive microorganisms. We believe that the results are associated with decreased patient immunity, impaired urine output, and increased exposure to antibiotics.

MP-02.13

Effect of Anticholinergics on Symptoms Reduction in Acute Bacterial Cystitis Patients

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Introduction and Objective: We investigated the effectiveness of anticholinergics on irritative symptoms of acute bacterial cystitis (ABC).

Materials and Methods: Between December 2018 and February 2019, a total of 58 patients were treated of ABC with antibiotics and with/without additional anticholinergics. Mean patient age was 48 years (range 21 to 90) and all patients were female. Thirty-three patients (57%) received anticholinergics and the other did not take anticholinergics. All patients were treated with appropriate antibiotics according to the urine culture results. Patients prescribed with inappropriate were not enrolled in this study. Antibiotics consist of ciprofloxacin, fosfomycin, cefalosporins. Anicholinergics were prescribed with solifenacin, propiverine. Patients symptom scores were compared with urinary tract infection symptom assessment questionnaire (UTISA Korean version).

Results: After seven days, all patients showed urinalysis under 5 WBCs per high power field. Patients were divided into two groups according to additional anticholinergics (anticholinergics group and control group). Pre-treatment UTISA symptoms scores sums (question 1~7) were 13.1 ± 3.4 in anticholinergics group (AC group) and 12.7 ± 2.8 in control group. Post-treatment UTISA symptoms cores sums were 3.7 ± 1.2 in AC group and 5.6 ± 2.6 in control group ($p < 0.05$). Most patients in AC group indicated symptoms changes of improvement (n= 28, 84%), whilst in control group (n= 20, 72%) (p= 0.13). Furthermore, improvement grades were 5.1 ± 1.7 in AC group and 3.9 ± 1.9 in control group ($p < 0.05$).

Conclusion: Most patients of acute bacterial cystitis can be treated with antibiotics alone. However, some cases did not resolve completely after appropriate antibiotics. After resolution of bacteriuria, a few patients still complain the irritative urinary symptoms continue. In this situation, additional anticholinergics could control the persisting urinary symptoms.

MP-02.14

Can Targeted Prophylactic Antibiotics Reduce the Risk of Bacteremia After Transrectal Ultrasound Guided Prostate Biopsies?

Huned D

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Introduction and Objective: Despite recent advances, transrectal ultrasound-guided biopsy (TRUS-Bx) of prostate is still the gold standard for upfront prostate biopsy. Our objective is to assess the efficacy of

targeted prophylactic antibiotics (TPA), with the use of pre-procedural rectal swabs (RS), at reducing the risk of post-procedural infection. We also aim to determine the incidence of ciprofloxacin-resistant (CR) organisms based on RS.

Materials and Methods: RS was introduced from April 2015 through October 2017 to screen for CR-organisms. Single dose 500 mg-1 g ciprofloxacin would be given 1 hour before in ciprofloxacin-sensitive (CS) cases. In CR cases, single dose of appropriate antibiotics would be given 1 hour before. The control group received empirical prophylactic antibiotics (EPA) cover i.e. single dose gentamicin from January 2012 through March 2015. All cases had sterile urine cultures no longer than a month before. Post-antibiotics were given at surgeons' discretion.

Results: Race, age, diabetes, hypertension and number of cores taken, were comparable between TPA (n= 836) and EPA (n= 978) groups. 32.5% of the TPA cohort with CS-organisms received other antibiotics in addition to ciprofloxacin. 99.6% and 74.3% received post-antibiotics in the EPA and TPA groups respectively (p= 0.000). Bacteremia rates were significantly lower in TPA group (0.6%, 5 of 836) than EPA group (1.9%, 19 of 978), (p= 0.012). The CR rate was 45.8%.

Conclusion: RS-guided use of TPA significantly reduced bacteremia, which translates to reduced healthcare costs and may have a role in populations with a high CR rate.

MP-02.15

Hospital Admission Rate for Urosepsis Following Trus Biopsy in Patients with Pre-Biopsy Rectal Floral Screening and Targeted Antibiotic Prophylaxis

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Introduction and Objective: Transrectal ultrasound guided biopsy of the prostate (TRUBP) remains the gold standard for the diagnosis of prostate cancer. Urosepsis is a serious potential complication of TRUBP associated with high morbidity. We performed a retrospective analysis of urosepsis admission rates following TRUBP in a single tertiary centre; where a targeted antibiotic regime is performed based on a pre-biopsy rectal swab screening for ciprofloxacin resistance.

Materials and Methods: Eight hundred and fifty-four TURBPs were performed (systematic TRUBP and/or MRI/US fused) in Hamilton from January 2015 to December 2017. Urosepsis was defined as hospital admission within 14 days of biopsy with confirmed infection on blood culture or MSU and with at least two of the systemic inflammatory response syndrome (SIRS) criteria. Antibiotic prophylaxis was ciprofloxacin 1 g 2 hours pre-biopsy and 500 mg BD post procedure orally; unless resistance was detected. If resistance was detected, then ceftriaxone 1 g or ertapenem 1 g I.V. was administered instead as appropriate.

Results: Ciprofloxacin resistance was detected in 92 (10.8%) of rectal swabs. 62 (7.2%) were ceftriaxone sensitive, and 30 were Extended Spectrum Beta-Lactamase (ESBL) positive. 4 patients (0.47%) presented with urosepsis, all had a prior negative screen, but 2/4 grew resistant E. coli in the blood culture. Only 1 patient required admission to the High Dependency Unit. There were no deaths nor Intensive Care Unit admission. Mean length of stay in hospital was 4.5 days.

MP-02.15, Table 1. Detection of Ciprofloxacin Resistant Organism

	Frequency	Percent
Yes	92	10.8
No	734	86.5
Sample Unsuitable	23	2.7

MP-02.15, Table 2. Description of Isolated Bacteria following Rectal Swab

	Frequency	Percent
E.coli	61	66.3
ESBL E.coli	30	32.6
K. pneumoniae	1	.1

Conclusion: Targeted antibiotic prophylaxis for TRUBP results in a low, but non-zero urosepsis rate, while minimising the use of I.V. antibiotics.

MP-02.16

Perception of Interstitial Cystitis/ Painful Bladder Syndrome by Members of Bladder Health UK: A Cross Sectional Study

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Introduction and Objective: Interstitial Cystitis/Painful bladder Syndrome (IC/PBS) is a complex urological disorder that significantly affects the quality of life of its sufferers. Patient reported quality of life is emerging as an important concept in overall treatment regime in many disease areas and IC/PBS is no exception. This study was aimed at evaluating patient perception of IC/PBS amongst members of the Bladder Health UK support group.

Materials and Methods: This was an online cross sectional study where a hyperlink containing Brief Illness Perception Questionnaire (B-IPQ) was sent to members of the group with a diagnosis of IC/PBS aged 18-80.

Results: A total of 165 respondents completed the 10-point scale domain of the questionnaire, whilst 175 completed the aetiology domain out of 601 members who were approached. 95% of the respondents felt that their condition would continue indefinitely; 75% believed that they were well informed about their condition and are seriously concerned about it. In the aetiology domain, perceived causes of IC/PBS were: no idea (19.4%), infection and inflammation (29.1%), lifestyle (22.3%), pelvic surgery/procedure (6.3%), diet and medication side effects (4.6% each), childbirth (2.3%), autoimmune diseases, endometriosis, genetics, and sjogren's syndrome (1.7% each), neurological disorders, menopause/cancer and miscellaneous (1.1% each), sexual activity and fibromyalgia (0.6% each). Other perceived causes included allergies, irritable bowel syndrome, asthma, constipation, adenomyosis, chronic fatigue syndrome, systemic lupus erythematosus, bed wetting, childhood abuse, late motherhood and colonoscopy.

Conclusion: These results under scores the burden that IC/PBS poses on its sufferers. It also provides a basis for further research to investigate any causal relationship between IC/PBS and the causes identified by participants.

MP-02.17

Intra-Urethral Flora and Post-Cystoscopy Urinary Tract Infection in Males – A Clinical Study

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Introduction and Objective: Role of distal urethral flora in post-cystoscopy urinary tract infection (UTI) is unclear. Various guidelines recommend antibiotic prophylaxis when aberrant host factors are present. However, office cystoscopy (OC) is associated with UTI in 10-15% of patients. We conducted this study to isolate and define the role of distal urethral bacterial microflora in post-procedural UTI in males undergoing OC. Additionally we sought to determine whether irrigation of urethra with betadine reduces UTI's compared to standard surgical preparation.

Materials and Methods: It was a prospective, single centre, double blind randomised study on healthy males (age: 15-75) with sterile urine culture, undergoing OC. Distal urethral culture was taken after standard part preparation with betadine 5% just before OC using sterile cotton swab. It was first incubated in 1% brain heart infusion broth and then on Blood agar and MacConky's agar. The operating surgeon and the microbiologist were blinded to each other's findings of pre-operative flora. Patients were then randomised into two groups, with or without an additional urethral 2% betadine instillation. No post procedural antibiotics were given. Urine cultures were obtained in all cases at 48 hours and 1 week or as clinically indicated. Follow up was done for 30 days. UTI was defined and antibiotics given if there was any new onset genitourinary symptom and/or significant bacteriuria at 48 hours or sepsis.

Results: In total, 122 patients were included with mean age of 56 years (31- 74). Growths on distal urethral swab were seen in 97. Most common organisms were Staphylococcus epidermidis in 23 (18.9%), Staphylococcus heamolyticus 21 (17%) and Enterobacter faecalis 16 (13%). Other species like E coli, Staphylococcus aureas, Staphylococcus hominis, Streptococci were also seen. UTI occured in 29 (23.7%) patients, E coli being most common isolate in 17(58%). Three patients (10%) had the same organism on pre-procedure urethral swab and subsequent urine culture. In control group UTI episode was seen in 21 (34.4%) as compared to 8 (13.1%) in intervention group (p= 0.006).

Conclusion: Distal urethral commensal flora is diverse but has got limited role in causing UTI after endourological intervention. Irrigating distal urethra with betadine caused significant decrease in post procedural UTI.

Moderated ePosters Session 3 BPH/ Voiding Dysfunction

Friday, October 18, 2019
1545–1715

MP-03.01

Aquablation for BPH in Large Prostates (80-150 cc): 1-year Results from WATER2 Study

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Introduction and Objective: To report 12-month safety and effectiveness outcomes of the Aquablation procedure for the treatment of men with symptomatic BPH and large-volume prostates.

Materials and Methods: 101 men with moderate-to-severe BPH symptoms and prostate volumes of 80-150 cc underwent a robotic-assisted Aquablation procedure in a prospective multicenter international clinical trial. Baseline demographics and standardized postoperative management parameters were carefully recorded in a central independently monitored database. Functional and safety outcomes were assessed at 12 months postoperatively.

Results: Mean prostate volume was 107 cc (range 80-150). Mean operative time was 37 minutes and mean Aquablation resection time was 8 minutes. The average length of hospital stay following the procedure was 1.6 days (range same day to 6 days). Mean IPSS improved from 23.2 at baseline to 6.2 at 12 months ($p<0.0001$). Mean IPSS quality of life improved from 4.6 at baseline to 1.3 at 12-month follow-up ($p< 0.0001$). Significant improvements were seen in Qmax (12-month improvement of 12.5 cc/sec) and post-void residual (drop of 171 cc in those with PVR >100 at baseline). No patient underwent a repeat procedure for BPH symptoms. In sexually active men, RE was only 19%.

Conclusion: With 1 year of follow-up, the Aquablation procedure is demonstrated to be safe and effective in treating men with larger prostates (80-150 cc), with an acceptable complication rate and without significant increase in procedure or resection time compared to smaller size glands.

MP-03.02

WATER vs WATER II: Aquablation Therapy for Benign Prostatic Hyperplasia with Comparative 1 year outcomes

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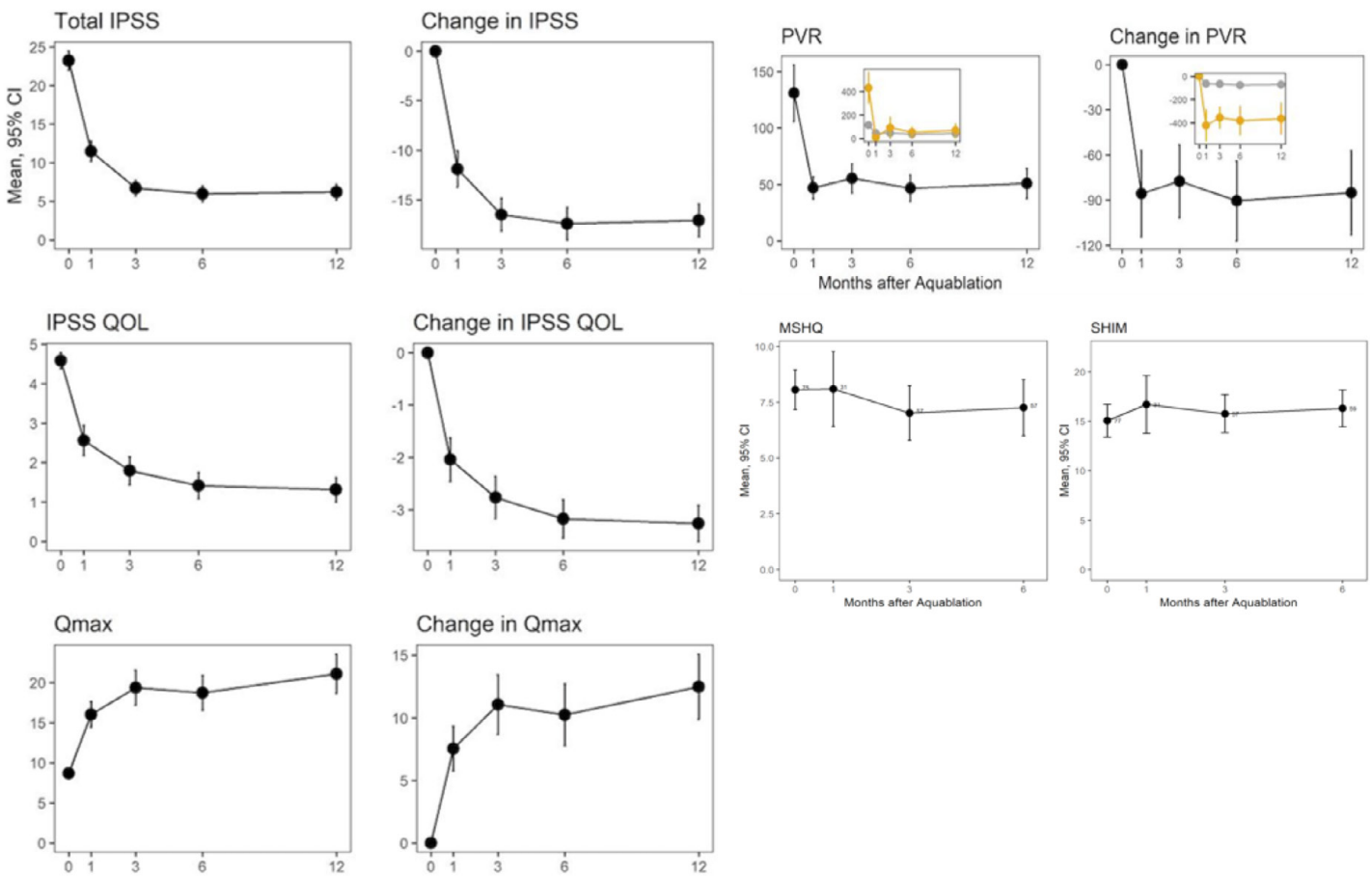
Introduction and Objective: Surgical options are limited when treating large (>80 cc) prostates for lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH); there is a need for novel surgical approaches with shorter learning curves and effective treatment. Aquablation (AquaBeam System, PROCEPT BioRobotics, Inc., USA), an ultrasound-guided, robotically executed waterjet ablative procedure, could be this novel tool. This analysis compares the outcomes of Aquablation in 30 cc to 80 cc prostates with the outcomes in 80 cc to 150 cc prostates.

Materials and Methods: WATER (NCT02505919) is a prospective, double-blind, multicenter, international clinical trial comparing the safety and efficacy of Aquablation and TURP in the treatment of LUTS/ BPH in men 45 to 80 years old with a prostate between 30 cc and 80 cc. WATER II (NCT03123250) is a prospective, multicenter, single-arm international clinical trial of Aquablation in men with a prostate between 80 cc and 150 cc. We herein report baseline parameters and 6-month outcomes in 116 WATER

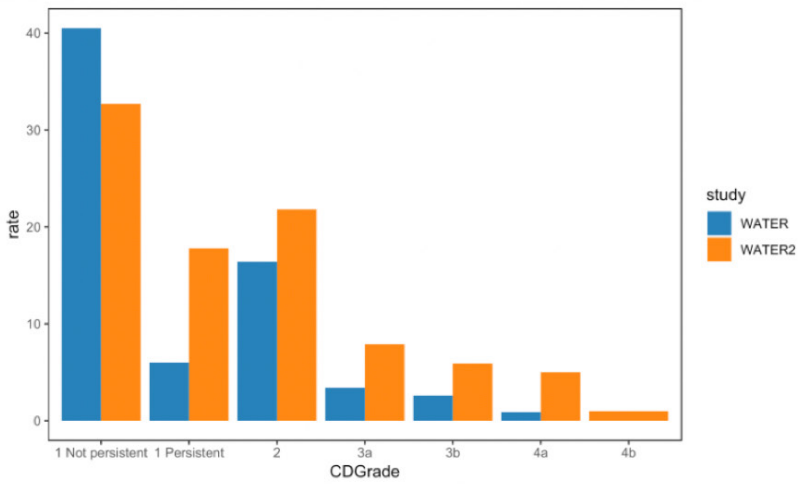
MP-03.01, Figure 1.



MP-03.02, Table 1. Procedural Outcomes

	WATER cohort			WATERII cohort			
	Mean	SD	Range	Mean	SD	Range	P-Value
Resection Time (minutes)	3.9	1.4	2 – 11	8	3.2	2.5-17	<.0001
Operative Time (minutes)	37.3	16.5	10-96	37.3	13.5	15-97	.0275
In and Out (minutes)	23.3	8.7	9-62	31	12.9	11-94	<.0001
Number of passes	1.1	0.3	1-2	1.8	0.6	1-3	<.0001
Transrectal Ultrasound (minutes)	39.7	15.2	15-94	54.5	19.2	24-111	<.0001
Time from discharge to catheter removal (days)	Will need to look into this						

MP-03.02, Figure 1. Change in International Prostate Symptom Score, Quality of Life, Voiding Subscale, and Storage Subscale



New onset anejaculation	10%	19%	**.5541**
Change in ISI at 6 months	-1.2 (2.5)	-1.6 (3.9)	0.5543
PSA Reduction at 6 months			
Raw value	-1.2 (2.5)	-3.0 (4.7)	**.0012**
As percent	-18 (46)	-17 (74)	**.9167**
Re-INTERVENTION RATE at 1 year due to recurrent BPH symptom	3 (2.6%)	0 (0%)	**.2501**
CATHETER USE	I responded with those on a catheter at 12 months = 0%		

(W-I) and 101 WATER II (W-II) study subjects undergoing Aquablation. Students' t-test or Wilcoxon tests were used for continuous variables and Fisher's test for binary variables.

Results: Mean operative time was 33±17 minutes in W-I and 37±13 minutes in W-II. The average length of stay post-procedure was 1.4±0.7 days (W-I) vs. 1.6±1.1 days (W-II). Mean changes in IPSS and IPSS quality of life were substantial, occurring soon after treatment and averaging (at 6 months) 16.9 and 3.5 points, respectively, in W-I and 17.4 and 3.2 points in W-II (p=.6046 and .2607 respectively). By 3 months, Clavien-Dindo grade 2 or higher events occurred in 19.8% of W-I subjects and 34.7% of W-II subjects (p=.4680). One W-I subject (0.9%) and 6 W-II subjects (5.9%) required postoperative blood transfusion (p=.0517).

Conclusion: Aquablation clinically normalizes outcomes between patients with a 30 cc to 80 cc prostate and patients with an 80 cc to 150 cc prostate treated for LUTS/BPH with an expected increase in the risk of complication. It is effective in patients with large prostate glands (>80 cc) with acceptable complications.

MP-03.03

Efficacy and Safety of Mirabegron vs. Placebo Add-On Therapy in Men with Overactive Bladder Symptoms Receiving Tamsulosin for Underlying Benign Prostatic Hyperplasia (PLUS)

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Introduction and Objective: The objective was to study the efficacy and safety of mirabegron vs. placebo for treating overactive bladder (OAB) symptoms in men concurrently receiving tamsulosin for lower urinary tract symptoms (LUTS) due to underlying benign prostatic hyperplasia (BPH).

Materials and Methods: This 12-week, phase IV, randomized, double-blind, multi-centre (North America/Europe) study enrolled men (40 years) who had received tamsulosin for 2 months. After a 4-week tamsulosin run-in period, patients were randomized to either mirabegron 25 mg or placebo. At 4 weeks, all patients have titrated to mirabegron 50 mg or placebo equivalent for 8 more weeks. Primary endpoint was changed from Baseline to week 12 /end of treatment in mean number of micturitions /24 h. Changes in mean volume voided (MVV) /micturition, urgency episodes /day, total urgency and frequency score (TUFS), and International Prostate Symptom Score (IPSS) total score was analysed. Safety assessments included treatment-emergent adverse events (TEAEs) and changes in post-void residual (PVR) volume and maximum urinary flow (Qmax).

Results: Of 676 men, mean age was 64.9 years (380 [56.2%] were 65 years). The adjusted mean change in micturitions /24 h for tamsulosin+mirabegron was statistically superior to tamsulosin+placebo (Table). Statistically superior results were also obtained for tamsulosin + mirabegron in MVV /micturition, urgency episodes /day, and TUFS (no significant difference was seen in IPSS total score). TEAE rates were higher with tamsulosin + placebo, although drug-related TEAE rates were higher with tamsulosin + mirabegron. Serious TEAE rates were similar in both groups. One (0.3%) tamsulosin + placebo and six (1.7%) tamsulosin + mirabegron patients experienced urinary retention. Changes in mean PVR volume and Qmax were not clinically meaningful.

Conclusion: Among men receiving tamsulosin for LUTS due to BPH, the addition of mirabegron was superior to placebo in mean number of micturitions /24 h in patients with OAB symptoms. Similar findings were observed for MVV /micturition, urgency episodes /day, and TUFS. There were no unexpected safety concerns.

MP-03., Table 1. Results summary

Efficacy parameter[a]	TAM+PL (n = 339)	TAM+MIRA (n = 337)
Mean number of micturitions/24 h		
BL, mean (SE)	10.71 (0.14)	10.71 (0.14)
Adjusted change from BL to EoT, mean (95% CI)[b]	–1.62 (–1.88, –1.36)	–2.00 (–2.26, –1.74)
Adjusted difference from TAM+PL, mean (95% CI)	–	–0.39 (–0.76, –0.02)
P-value[c]	–	0.039
MVV/micturition		
BL, mean (SE)	167.89 (3.06)	172.33 (3.13)
Adjusted change from BL to EoT, mean (95% CI)[b]	16.32 (11.57, 21.07)	25.57 (20.81, 30.33)
Adjusted difference from TAM+PL, mean (95% CI)	–	9.25 (2.53, 15.98)
P-value[c]	–	0.007
Urgency episodes/day (grade 3 or 4)		
BL, mean (SE)	5.24 (0.17)	5.65 (0.18)
Adjusted change from BL to EoT, mean (95% CI)[b]	–2.24 (–2.56, –1.91)	–2.90 (–3.23, –2.58)
Adjusted difference from TAM+PL, mean (95% CI)	–	–0.67 (–1.13, –0.21)
P-value[c]	–	0.004
TUFS		
BL, mean (SE)	25.31 (0.42)	26.20 (0.46)
Adjusted change from BL to EoT, mean (95% CI)[b]	–6.41 (–7.32, –5.51)	–8.29 (–9.19, –7.38)
Adjusted difference from TAM+PL, mean (95% CI)	–	–1.87 (–3.15, –0.59)
P-value[c]	–	0.004
IPSS total score		
BL, mean (SE)	16.9 (0.3)	16.7 (0.3)
Adjusted change from BL to EoT, mean (95% CI) [n][b]	–5.6 (–6.2, –5.0) [335]	–5.7 (–6.3, –5.1) [336]
Adjusted difference from TAM+PL, mean (95% CI)	–	–0.1 (–1.0, 0.8)
P-value[c]	–	0.812
Safety parameter, n (%)[d]	TAM+PL (n = 354)	TAM+MIRA (n = 352)
TEAEs	111 (31.4)	91 (25.9)
Drug-related TEAEs	21 (5.9)	42 (11.9)
Serious TEAEs	8 (2.3)	10 (2.8)
Drug-related serious TEAEs	1 (0.3)	2 (0.6)
TEAEs leading to study drug discontinuation	3 (0.8)	6 (1.7)
Drug-related TEAEs leading to study drug discontinuation	2 (0.6)	5 (1.4)
PVR volume in mL		
BL, mean (SD)	30.2 (40.3)	30.6 (41.5)
Change from BL to week 12/EoT, mean (95% CI) [n]	3.8 (–0.9, 8.4) [331]	14.7 (8.5, 21.0) [321]
Qmax in mL/sec		
Screening, mean (SD)	15.7 (7.87)	16.3 (15.93)
Change from BL to week 12/EoT, mean (95% CI) [n]	0.0 (–1.10, 1.08) [319]	–1.8 (–3.76, 0.10) [309]

ANCOVA, analysis of covariance; BL, Baseline; CI, confidence interval; EoT, end of treatment; FAS, Full Analysis Set; IPSS, International Prostate Symptom Score; MIRA, mirabegron; MVV, mean volume voided; PL, placebo; PVR, post-void residual; Qmax, maximum urinary flow; SAF, Safety Analysis Set; SD, standard deviation; SE, standard error; TAM, tamsulosin; TEAE, treatment-emergent adverse event; TUFS, total urgency and frequency score

[a] Data shown for the FAS (all patients who took ≥1 dose of double-blind treatment after randomization, reported ≥1 micturition in the BL diary, and ≥1 micturition post-BL)

[b] Adjusted changes from BL values as well as the 95% CIs were generated from an ANCOVA model with treatment group, age group (<65 years, ≥65 years) and geographic region as fixed factors and BL value as a covariate

[c] P-values compare the TAM+MIRA group with the TAM+PL group

[d] Data shown for the SAF (all patients who took ≥1 dose of double-blind treatment after randomization)

MP-03.04

The Prostatic Urethral Lift (UroLift) Versus the Convection Water Vapor Ablation (Rezum) for Minimally Invasive Treatment of BPH: A Comparison of Improvements and Durability in 3-Year Clinical Outcomes

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Introduction and Objective: UroLift is a minimally-invasive surgical treatment option for LUTS associated with BPH to relieve the obstruction by displacing lateral lobes towards the capsule and securing them in that position using small suture-based implants. Rezūm system is an alternative treatment option that uses convective radiofrequency-generated water vapor thermal energy to ablate prostate tissue through a cystoscopic procedure. There is limited knowledge on a head to head comparison of these two procedures.

Methods and Methods: This study is an indirect comparison of 3-year outcomes of double-blind randomized control trials published for Rezūm and UroLift.

Results: At 3-months both Rezūm and UroLift achieved greatest improvements of Q-max which were not different between groups in subsequent visits. Rezūm and UroLift resulted in significant improvement of in IPSS at 3 months. After 3 months, IPSS increased with UroLift and decrease in Rezūm. At 24 months and 36 months there was a statistically significant difference between groups favouring Rezūm. Both Rezūm and UroLift achieved 50% reduction of IPSS QoL at 3 months and were durable across all time points with no statistical differences between groups. Neither Rezum or UroLift induced a significant improvement in PVR. At 3 months, Rezūm and UroLift achieved not significantly different improvement in BPHII. The improvement in both groups showed durability but still no significant difference. Only the UroLift experienced improvements of MSHQ-EjD function from baseline at all time points and was durable up to 36 months. Improvement in UroLift (26.74%) and Rezūm (3%) at 3 months was significantly different between groups ($p < 0.01$). Rezūm failed to significantly reduce the MSHQ-EjD bother at 3 months, while UroLift demonstrated a significant reduction of 27.56% ($p<0.01$). The decrease of bother domain in Rezūm was delayed to 12 months, and both systems offered equal improvements in the bother score by 12 months which was sustained to 36 months.

Conclusion: Improvement in erectile dysfunction in patients treated with the UroLift was greater than Rezūm. Rezūm achieved a non-significant greater improvement in prostate symptom relief when compared to UroLift. Rezūm was favourable in improving maximal flow rate up to 24 months when compared to UroLift.

MP-03.05

The Combination Therapy of α-Blockers and Phosphodiesterase 5 Inhibitors for Lower Urinary Track Symptoms and Erectile Dysfunction in Comparison with Monotherapy: A Systematic Review and Meta-Analysis

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Introduction and Objective: To systematically investigate the effects of combination therapy consisted of an α-blocker and a phosphodiesterase-5 inhibitor (PDE5I) for the treatment of lower urinary tract symptoms (LUTS) and erectile dysfunction (ED).

Materials and Methods: The study complied with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) the recommendations of the European Association of Urology Guidelines office. The primary endpoint was the quality of life-related to LUTS and ED. To quantify these parametres we used the IPSS score, Qmax, and PVR for LUTS and IIEF score for ED. Secondary endpoints included the adverse events rate. In the subgroup analysis of the influence of adding a PDE5I to the treatment of LUTS, the use of different PDE5Is was considered.

Results: After the screening of 6687 publications, 25 RCTs were considered eligible to be included in the meta-analysis. In the combination group, IPSS was lower and Qmax was higher than in the α-blocker group. The mean change of the IPSS was bigger in the combination group. PVR and the mean change of PVR, as well as IIEF and the mean change of IIEF, had no difference between the combination group and the PDE5I group. Regarding the adverse events, the meta-analysis was in favor of the monotherapy. None of the studies referred to any serious or severe adverse event.

Conclusion: Treatment with combination therapy is more effective for the improvement of IPSS. Less significant improvement was shown in Qmax. The beneficial effect of combination therapy regarding ED remains equivocal. The combination therapy seemed to be safe and well tolerated.

MP-03.06

Two Decades of Holmium Laser Enucleation of the Prostate: A Single Center Experience

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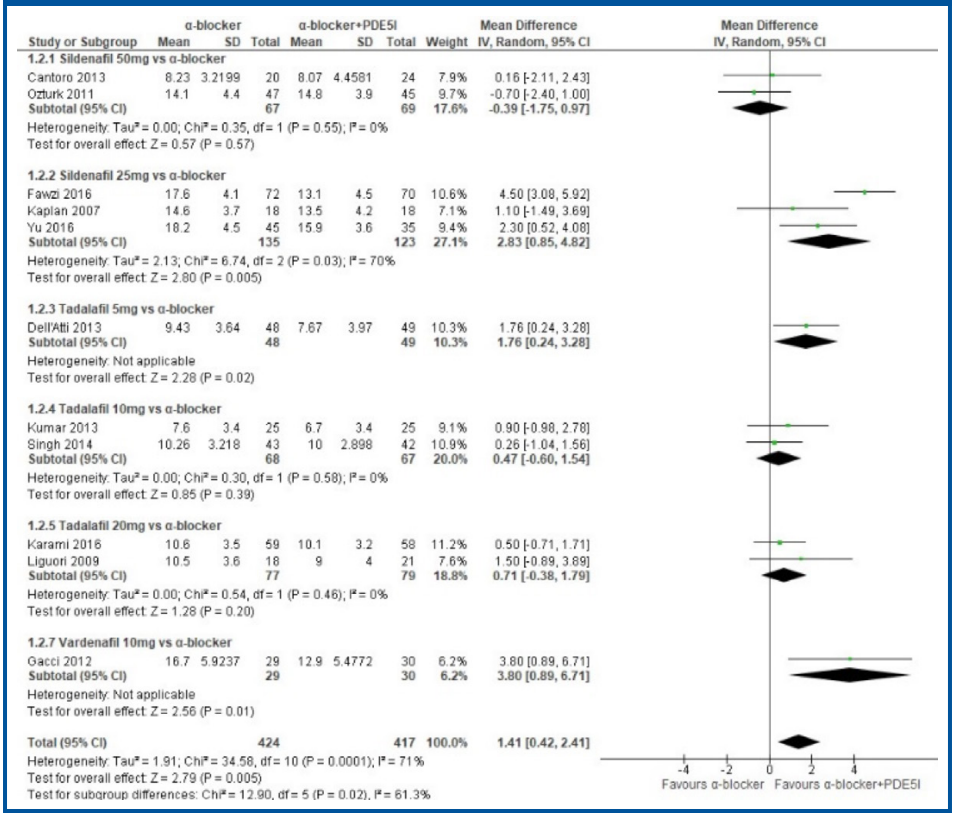
Introduction and Objective: Meta-analyses have confirmed that holmium laser enucleation of the prostate (HoLEP) is a well-established treatment for benign prostatic hyperplasia (BPH). The aim of the present study is to report our experience with long-term outcomes of the HoLEP procedure over a period of 18 years.

Materials and Methods: A review was performed of a prospectively collected database (March 1998 through June 2016) for patients undergoing HoLEP for symptomatic BPH performed by a single expert surgeon. Demographic and perioperative data were collected pre and post-operatively including the International Prostate Symptoms Score (IPSS), Quality of Life (QoL), peak flow rate (Qmax), post-void residual urine (PVR), and PSA. In addition, perioperative and late adverse events were recorded.

Results: After a median follow-up of 9.1 years, 1476 patients were included with a mean age of 70.7 years. The mean catheter time and hospital stay were 1.2 and 1.3 days, respectively. IPSS (15.9± 6.5 vs. 6.8± 5.6, $p<0.001$) and QoL (3.1± 1.4 vs. 1.5± 1.4, $p<0.001$) scores were both significantly improved after HoLEP, when compared to pre-operative values. Likewise, Qmax and PVR were significantly improved (7.2±4.0 vs. 17.7±10.4 mL/Sec, $p<0.001$); (204± 258 vs. 43± 73 Ml, $p<0.001$) for 132 patients who could be followed

MP-03.05, Figure 1.



over 10 years. Perioperative blood transfusion was required in 0.8% of patients. PSA values were significantly reduced by 66.7% at the most recent follow-up (p<0.001). Post-operative complications included urethral stricture and bladder neck contracture in 21 (1.4%) and 30 (2.1%) patients, respectively. Redo HoLEP was required in 21 patients (1.4%).

Conclusion: Holmium laser enucleation of the prostate is a safe, effective and durable procedure for treatment of benign prostatic hyperplasia over long-term follow-up.

MP-03.07

Association Between Lower Urinary Tract Symptoms and Cigarette Smoking or Alcohol Drinking

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Instruction and Objective: We investigated the association between alcohol or smoking and severity of LUTS in men, as alcohol intake and cigarette smoking are important modifiable lifestyle factors for lower urinary tracts symptoms (LUTS).

Materials and Methods: A cross-sectional analysis was performed and a total of 86,707 participants in the Korean Community Health Survey were included for final analysis**.** The adjusted odds ratio (OR) or coefficient with 95% CI estimates were described to show the association between alcohol consumption or cigarette smoking and LUTS.

Results: Among the total subjects, 77,398 (89.3%), 7,532 (8.7%), and 1,777 (2.0%) had mild, moderate, and severe symptoms, respectively, according to IPSS grade. Those who drank alcohol at least once per month were significantly associated with decreased risk of having the worst IPSS grade (OR: 0.80, 95% CI: 0.68 to 0.93). Those who smoked in the past but currently quit and those who were daily smokers showed significantly increased risk of having the worst IPSS grade (past smoker, OR: 1.26, 95% CI: 1.14 to 1.39; daily smoker, OR: 1.21, 95% CI: 1.10 to 1.34). For nocturia, daily smoking showed a positive effect (OR: 0.79, 95% CI: 0.75 to 0.84) whereas heavy alcohol drinking showed a negative effect (OR: 1.22, 95% CI: 1.14 to 1.32)

Conclusion: Alcohol showed a positive effect on LUTS except nocturia, whereas cigarette smoking had a negative effect on LUTS except nocturia. Daily smoking showed a positive effect on nocturia whereas heavy alcohol drinking showed a negative effect on nocturia.

MP-03.08

Effect of Preoperative Urodynamic Bladder Contractility on Satisfaction after HoLEP in Patients with BPH

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Introduction and Objective: To investigate the effect of baseline urodynamic detrusor contractility on postoperative patient satisfaction after HoLEP in patients with BPH.

Materials and Methods: Database of the patients who underwent HoLEP between May 2012 and December 2016 for BPH was drawn from the prospective Seoul National University Hospital BPH Database Registry. The patients underwent preoperative evaluation including LUTS questionnaires (IPSS, OABSS), uroflowmetry and PVR measurement, TRUS and urodynamic study. Responses to Treatment Satisfaction Question (TSQ), Global Response Assessment (GRA) and Willingness to Undergo the Same Surgery Question (WUSSQ) were obtained at postoperative sixth months. Patients were divided into normal detrusor activity (NDA) group and detrusor underactivity (DUA) group according to the baseline urodynamic results.

Results: A total of 588 patients (mean age 69.0±7.0 years) with a mean prostate volume of 70.8(±39.0) mL were identified. There were significant improvements in IPSS (19.0±7.7 at baseline to 5.2±4.9 at postoperative sixth month), QoL score (4.2±1.2 to 1.1±1.1), OABSS (6.2±3.4 to 2.7±2.4), Qmax (9.4±4.8 to 22.6±10.7 mL/sec) and PVR (71.5±99.2 to 17.3±41.3 mL) postoperatively (p <0.001). Overall patient response to GRA demonstrated that 581 (98.8%) were improved, 5 (0.9%) were no change, and 2 (0.3%) were aggravated. Response to TSQ showed that 548 (93.2%) were satisfied, 20 (3.4%) were neutral and 20 (3.4%) were dissatisfied. Regarding WUSSQ, 554 (94.2%) answered positive and 34 (5.8%) negative. Response to the GRA showed that patients in both DUA group (29, 4.9%) and NDA group (559, 95.1%) expressed significant improvement (98.9% and 96.6%, respectively) at postoperative sixth months. However, there was a significant difference between the two groups (p= 0.01) in response to GRA. Patients in DUA group (29, 4.9%) also showed less improvement in IPSS, QoL score, OABSS and Qmax than those in NDA group (559, 95.1%). Both groups were highly satisfied (93.6% and 86.2%, respectively) in response to TSQ. There was no significant difference between the two groups in response to TSQ and WUSSQ.

Conclusion: Our results demonstrated that patients with DUA showed less improvement in subjective LUTS than that of the patients with NDA in spite of significant improvement in the overall objective parameters. However, satisfaction after HoLEP was high.

MP-03.09

Efficacy and Safety of Green Light 180 W XPS Photoselective Vaporization of the Prostate in Elderly High-Risk Patients with Retention

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Introduction and Objective: To examine the safety and functional outcomes of high-risk patients on antithrombotic therapy with retention treated with photoselective vaporization of the prostate (PVP) using the Greenlight XPS-180 system.

Materials and Methods: A retrospective analysis of institutional database was performed. Primary endpoints were catheter-free rate and improvement in quality of life (QoL) scores, international prostate symptom score (IPSS), maximum urinary flow rate (Qmax), and postvoid residual (PVR). The secondary endpoints were complication outcomes as defined by the standardized Clavien-Dindo grading system. Eighty elderly men (>75yo) with retention related to BPH were treated using the XPS-180system.

Results: Mean age was 78 years and mean prostate volume was 85 mL. All patients continued antithrombotic therapy in the perioperative period. Mean operation time was 80 ± 20 min (range 60 to 140), with a mean energy delivery of 300 ±150 kJ. Catheterization time was 3 ±2 days (range 2 to 6) and hospital stay was 2.5 ±1 days (range 2 to 4). At 3 months, International Prostate Symptom Score was (8 ±4), maximal urinary flow rate (15 ±7 mL/s), postvoid residual urine (30 ±50 mL). Ten patients had complications that were all minor (Clavien 2) and one developed renal insufficiency (Clavien IVa). Two patients had to be readmitted to the hospital. The majority of patients (89%) were satisfied. Urethral strictures were observed in two patients but no patients required reintervention due to residual adenoma.There was a 98% catheter-free rate.

Conclusion: PVPis safe and effective for high-risk aging patients with retention. Prolonged postoperative catheterisation compensates continuation of the antithrombotic therapy.

MP-03.10

Macroplastique and Botox is Superior to Macroplastique Alone in Neurogenic Vesicoureteric Reflux in Patients with Otherwise Healthy Bladders

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Introduction and Objective: Vesicoureteric reflux (VUR) is a complication of neurogenic lower urinary tract dysfunction. It is secondary to high bladder pressures and differs aetiologically from primary VUR. There is data to confirm that Macroplastique is effective in the treatment of secondary VUR in spinal cord injury (SCI) patients. Also, botulinum toxin (Botox) alone is effective in improving VUR. The aim of this study is to assess the efficacy of Macroplastique alone or in combination with Botox, in managing VUR in SCI population with presumed healthy bladders.

Materials and Methods: We conducted a retrospective case-control study of all SCI patients with unilateral or bilateral VUR, managed with Macroplastique injection or combination of Macroplastique and Botox. We identified those with presumed healthy bladders (low filling detrusor pressure, low amplitude overactivity, good capacity and acceptable compliance). The inclusion criteria were: age>18 years, treatment naive, upper motor neuron lesion, baseline and follow-up videourodynamics(VUDS), proven VUR and follow up(³12 months). The primary endpoint was the overall treatment rate of VUR at 3 months and the secondary outcomes were the success

rate(treated+improved) and the comparison of VUDS parameters.

Results: We studied 34 intervention-naive patients who fulfilled the inclusion criteria. 19 patients had only Macroplastique (Group 1) and 15 had Macroplastique and Botox injections (Group 2). There were 44 refluxing ureteric units 26 (59.1%) in Group 1 and 18 (40.9%) in Group 2. Baseline characteristics in both groups were similar. The overall treatment rate was 65.4% for Group 1 and 88.9% for Group 2 (p=0.029). The overall success rate was 80.8% and 94.4% respectively (p=0.123). Group 1 had 4 (15.4%) ureteric units downgraded and 5 (19.2%) that failed; Group 2, had 1 ureteric unit (5.5%) downgraded and 1 failure. The follow-up VUDS of group 1, showed a significant rise in detrusor pressure (p=0.008) and a drop-in compliance (p=0.018) as compared to baseline. There were no significant changes in Group 2.

Conclusion: Macroplastique and Botox are more effective than Macroplastique alone in VUR in SCI patients in presumed healthy bladders. We believe that the differences observed in group 1 VUDS are due to the change of bladder behavior hence, Botox at this stage is beneficial.

MP-03.11

The Use of Antimuscarinics to Boost the Efficacy of Botulinum Toxin in Neurogenic Bladder Patients

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Introduction and Objective: Botulinum toxin is already well established as a second line therapy for the overactive detrusor, despite several drawbacks, which include an increased cost and the potential for more severe complications compared to antimuscarinics. Our study aims to investigate whether giving antimuscarinics after the toxin injection might increase the interval between intravesical treatments.

Materials and Methods: A series of 30 consecutive adult patients were included in this prospective trial. All patients had neurogenic detrusor overactivity and were treated with intradetrusor injection of botulinum toxin type A. After one month in which the toxin proved effective, a daily dose of solifenacin 10 mg was added. The patients were evaluated every three months using the OABq (33 questions) and PVR measurement. Reinjection was decided based on the same criteria and values as the initial treatment. Urodynamics was performed before retreatment. Data were compared to a similar series of patients from our own experience. The parameters we monitored include time between injections, PVR values, OABq-score, Pdet and sensations reported by the patient. A t-test statistical analysis was done.

Results: The follow-up period is 24 months in this series. Six patients (20%) did not require reinjection, compared with only two patients in the reference group. The time between treatments increased by 6 ± 2.44 months ($p < 0.0001$). The PVR did not show any statistically significant variation, and the same was observed for the Pdet values. Detrusor overactivity was observed in all patients requiring retreatment. The OABq showed progressive degrading, with sensations worsening slower than other parameters.

Conclusion: The association between these two drug classes led to a statistically significant increase in the time between retreatments. Botulinum toxin made solifenacin effective in those cases where it didn't show enough efficacy when used alone. Antimuscarinics apparently decreased the sensation, and that might be the main reason behind longer efficacy. Even when combined with botulinum toxin, antimuscarinics did not cause acute urinary retention. The increased cost of treatment might be balanced by a longer period of efficacy.

MP-03.12

Therapeutic Effects of PDE9 Inhibitor on Lower Urinary Tract Dysfunction (LUTD) Following Spinal Cord Injury (SCI)

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Introduction and Objective: Recently, PDE9 inhibitors (PDE9i) have received much attention as potential therapeutics for the treatment of Alzheimer's disease and cardiovascular disease. Phosphodiesterase type 9 (PDE9) is one of novel isozymes, which is expressed in brain, skeletal muscle and urinary tract. However, it remains to be elucidated whether PDE9 is involved in LUTD induced by SCI. Therefore, we investigated the effects of a PDE9i to clarify the role of PDE9 in storage and voiding dysfunction using SCI mice.

Materials and Methods: C57BL/6N mice were used, and SCI was induced by complete transection of the Th8/9 spinal cord. Two weeks after SCI, PDE9i (PF-04447943; 5 mg/kg/day) or saline (treatment or control group, respectively) was administered daily by i.p. injection for 14 days. Four weeks after SCI, urodynamic studies were performed under an awake condition. L6 dorsal root ganglia (DRG), urethral, bladder muscle and mucosal specimens were obtained from PDE9i and saline-treated SCI mice as well as saline-treated normal (spinal intact) mice to evaluate the levels of PDE9, TRPV1, TNFα, COX2, HIF1 and VEGF transcripts by real-time PCR.

Results: Compared to saline-treated SCI mice, non-voiding contractions during bladder filling were significantly reduced and voiding efficiency was significantly improved in PDE9i-treated SCI mice. PDE9i reverses SCI-induced detrusor-sphincter dyssynergia (DSD), evident as a reduction of sphincter EMG activity time during bladder contractions. The TRPV1 mRNA levels in DRG and bladder muscle were increased in SCI mice vs. spinal intact mice, and significantly decreased after PDE9i treatment in SCI mice. The TNFα mRNA levels in urethra, bladder muscle and mucosa were increased in SCI mice vs. spinal intact mice, and significantly decreased after PDE9i treatment in SCI mice. PDE9 transcripts were identified in L6 DRG and bladder tissues.

Conclusion: PDE9 inhibition improved SCI-induced detrusor overactivity and inefficient voiding/DSD, along with significant reductions in TRPV1, a C-fiber afferent marker, and TNFa, a proinflammatory cytokine, in mice. Thus, PDE9 could be a therapeutic target for storage and voiding LUTD after SCI.

MP-03.13

Surgical Management of Voiding Dysfunction Following TOT and TVT: A Single Center Experience

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Introduction and Objective: To report the surgical management and outcome of treating voiding dysfunction secondary to T.O.T and T.V.T in a single medical center

Materials and Methods: The medical records of all patients suffering from voiding dysfunction and urinary retention following T.O.T and T.V.T were reviewed. All patients had the past history of urethral dilation at least for once and were refractory to medical treatment and were on self- intermittent catheterization. Patients were evaluated by physical examination, Urine Analysis and culture, ultrasound scan, urodynamic study, free uroflowmetry and cystourethra- scopy before any intervention. Ultrasound scan and free uroflowmetry were repeated after each intervention, and the patients were asked if they were satisfied with the surgical result.

Results: Among 74 referred cases during 6 years who had been treated, 55 were available with complete medical records. 36 and 19 were secondary to TOT and TVT respectively. Urethrolysis and mesh cut relieved the problem in 19 and 10 cases of TOT and TVT respectively. Pelvic floor organ prolapse surgical repair was needed in another 15 and 9 cases of TOT and TVT respectively as the second surgical attempt. Two cases of urinary retention following TOT finally underwent sacral neuro modulation.

Conclusion: Management of urinary retention following vaginal mesh slings is a step by step protocol according to our experience. Urethrolysis and mesh cut did not relieve symptoms and signs in all patients. Some underwent additional POP repair and SNM.

MP-03.14

Post-Prostate Biopsy Voiding Dysfunction: A Prospective Analysis of its Incidence, Outcome and Predictors

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Introduction and Objective: Biopsy-related inflammatory edema, urethral blood clots and sphincteric spasm could lead to post-biopsy voiding dysfunction. This study examines the incidence, outcome and predictors of voiding dysfunction following prostate biopsy.

Materials and Methods: Between February 2017 to July 2018, a quasi-experimental study was carried out on 68 patients with indication(s) for prostate biopsy. Baseline data of the patients were obtained. Prior to the biopsy, IPSS and Q_{max} of each patient were deter-

mined. Sextant trans-rectal prostate biopsy was done using an 18G Tru-cut needle under local anesthesia. The IPSS and Q_{max} were subsequently re-assessed 7 and 14 days after the biopsy and compared to baseline data. Development of post-biopsy urinary retention was also recorded. Analysis was done using SPSS software with $p<0.05$ considered significant.

Results: The mean age, baseline IPSS and baseline Q_{max} of the study population were 64.9 years (range 41 to 85), 12.8 (range 2 to 29) and 18.3 ml/s (range 6 to 62) respectively. Post-biopsy AUR and significant deterioration in Q_{max} occurred in 4.4% and 36.8% of the patients respectively. The total IPSS (12.5 vs. 14.7, p=0.003), IPSS storage sub-score (6.7 vs. 8.3, p=0.001), bother score (3.3 vs. 3.6, p=0.025) and Q_{max} (18.7 vs. 15.9 ml/s, p=0.001) significantly deteriorated from the baseline value on the 7th day after the biopsy. By the 14th post-biopsy day, there was no significant difference in total IPSS (12.5 vs. 11.3, p=0.138), IPSS storage sub-score (6.7 vs. 6.3, p=0.446), bother score (3.3 vs. 2.9, p=0.072) and Qmax (18.7 vs. 17.7 ml/s, p=0.294) in comparison to baseline data. Only patients with moderate IPSS and normal Q_{max} (15ml/s) at baseline had significant increase in their values (12.1 vs. 15.3, p=0.002 and 25.7 vs. 21.4 ml/s, p=0.001 respectively) by the 1st week after the biopsy. Baseline IPSS independently predicted post-biopsy bother score deterioration (p=0.030, OR=1.143, 95% CI: 1.013 – 1.289).

Conclusion: Some patients who had trans-rectal prostate biopsy developed significant LUTS and deterioration in their quality of life, which spontaneously resolved by the second week in the majority of them.

MP-03.15

Urinary Incontinence in Old Women: What Do they Really Want? About 136 Consecutive Patients

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Introduction and Objective: To determine the incidence and severity of urinary incontinence (UI) in elderly women who attend tertiary hospital urology consultations, as well as their real wishes about UI symptoms.

Materials and Methods: A multicentre, observational, descriptive cross-sectional study was conducted of elderly women (age > 70 years) who visit urology consultations for different symptoms. The period of study was 4 years (January 2015 to December 2018). Women with UI symptoms (ICIQ-UI SF>0) were asked about UI intensity and whether they want any specific care. Those who answered "no" were asked why.

Results: We included a total of 247 women, 136 of them reported UI (55%), especially mild to moderate symptoms (80,1%). Seventy-five patients responded that they don't need any help with their UI, because it is normal (n= 23), due to age (n= 16), not a significant problem for them (n= 11) and they know that there is no efficient care (n=10) and because risk of operative complications (n= 9). Of these, 17 patients had severe symptoms. More symptoms were severe, more patients want to be treated (p= 0,004).

Conclusion: Almost half of elderly women who attended urology consultation for any reason reported UI symptoms, especially mild and moderate. More than half of the patients with UI symptoms didn't want any help for their problem. More symptoms were severe; more patients want to be treated.

MP-03.16

Urethral Bulking Injections for Female Stress Urinary Incontinence: Medium-Term Outcomes

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Introduction and Objective: Evaluate clinical outcome and patient satisfaction of periurethral bulking as a treatment for stress urinary incontinence (SUI).

Materials and Methods: Review of all patients having undergone periurethral bulking procedures (PBP) at a single institution between January 2014 and January 2019.

Results: Fifty-four patients had a PBP by 3 Urological surgeons. Mean first follow-up was 3.6 months and mean latest follow-up was 18 months. Mean age was 58 years and mean BMI was 29.5. Mean pre-operative pad use was 3.6/24 hours and mean UISF score was 14.8. At first follow-up, 22 patients (40.7%) had a successful outcome (one or less pad use) with mean pad use of 1.5/24 hours. Mean UISF score at latest follow-up was 9.9. Twenty-eight (71%) reported duration of treatment effect being between <1 month and 6 months, with 5 (10%) patients reporting benefit beyond 6 months. Mean Likert scale for patient satisfaction with the procedure was 1, on a scale -3 (completely dissatisfied) to +3 (completely satisfied). Those with a higher BMI were less likely to be dry at the first follow-up with 38%, 33% and 20% being dry in BMI groups of normal, overweight and class I obesity, respectively. Those with no SUI on CMG (n= 17) were more likely to be dry at the first follow-up (43.8%) compared to those with SUI (38.9%). Amongst those with previous anti-SUI procedures (n=13), 46.2% were dry at first follow-up, compared to 38.5% with no previous continence procedures. Ten patients (19%) had further anti-SUI treatment (repeat PBP, transvaginal tape, colposuspension). The complication rate was low, with 1.9% risk of urinary tract infection.

Conclusion: Whilst transurethral synthetic tapes remain suspended in the UK, periurethral bulking has become a popular treatment for SUI. This retrospective study provides medium-term outcomes following PBP. Improvements were noted in UISF score and pad use post-operatively. Factors determining post-operative success may include a lower BMI and lower pad use. Periurethral bulking was shown to be safe and acceptable as a treatment to patients. Duration of effect was short-lived, with only 5.6% reporting effect lasting beyond 6 months. We would advocate larger, prospective studies to further evaluate this treatment and its durability.

Moderated ePosters Session 4 Prostate Cancer

Friday, October 18, 2019
1545–1700

MP-04.01

Pro-drug Activating Enzyme Gene Over-Expressing Human Adipose Stem Cells Can Inhibit Tumor Growth in Castration Resistant Prostate Cancer with Less Toxicity

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Introduction and Objective: Stem cells have the selective migration ability toward cancer cells and therapeutic genes can be easily transduced into stem cells. Genes expressing pro-drug activating enzymes have been recognized as an attractive tool for treating CRPC with less systemic toxicity. Carboxyl esterase (CE) enzyme promotes the formation of active form from pro-drug CPT-11. Rabbit CE was found to be 1000-fold more efficient compared to the human isoform. This study was performed to evaluate inhibition of tumor growth in CRPC using human adipose derived adipose stem cells (ADSC), rabbit CE and with less toxicity.

Materials and Methods: ADSC were prepared and cultured. ADSC.CE cell line was established by transfection with a CLV-Ubic encoding rabbit CE gene. Invasion study for the selective migration ability toward cancer cells was performed. To determine the suicide effect of ADSC.CE, cells were cultured under various concentrations of CPT-11 (0.01–5 μmol/L). To determine the cytotoxic effect of ADSC.CE, PC3 and ADSC.CE cells were co-cultured. PC3 cells (1 x106 cells) were injected subcutaneously into the flank. At 2 days after intracardiac injection of stem cells, animals were treated with CPT-11 for 4 weeks. Tumor volumes were measured.

Results: Therapeutic CE gene were successfully delivered to human ADSC. In vitro study, suicide effect of ADSC cultured with CPT-11, cell viability percent of stem cells was reduced in ADSC.CE (69.3 ±3.8), compared with in the ADSC group (80.3 ±2.0). Cytotoxicity of PC3 cells, co-cultured with ADSC under CPT-11 treatment, cell viability percent of PC3 cells was reduced in ADSC.CE (74.1 ±2.0) compared with in the ADSC group (78.8 ±4.2). Percentage of Annexin V–positive apoptotic prostate cancer cells significantly increased in the presence of ADSC.CE (39.7 ±4.8) with CPT-11compared with ADSC (0.0±0.0). In vivo study, tumor volume percent of ADSC.CE treatment with CPT-11 (94.2 ±23.2) were reduced, compared with in the ADSC group (101.0 ±6.0).

Conclusion: Therapeutic CE genes over-expressing human ADSC inhibited growth of CRPC in the presence of the CPT-11 pro-drugs with less systemic toxicity. These results indicate that therapeutic stem cells expressing CE gen can provide a new strategy for treating CRPC in clinical trials using patient's own ADSC.

MP-04.02

Randomized Control Study of Prospective Questionnaire Analysis About the Efficacy of a Physical Rehabilitation Exercise Test on Health-Related Quality of Life Using the Smart-After-Care Application in Advanced or Metastatic Prostate Cancer Patients

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Introduction and Objective: This study aimed to analyze the effects of a home-based physical rehabilitation exercise test using Smart-After-Care on health-related quality of life (HRQoL). It focused on the psychological and physical status of patients with advanced or metastatic prostate cancer (PC) treated with androgen deprivation therapy (ADT).

Materials and Methods: A total of 78 PC patients treated with at least 6 months of ADT were randomly allocated into a Smart-After-Care (SAC) exercise application group or an exercise brochure (control) group. A 12-week routine home-based physical exercise education program was conducted based on the patients' average amount of exercise, confirmed using IPAQ-SF and the results of a 2-minute walking test. After completing the same 12-week home-based aerobic and strengthening exercise program, the control group was changed to the SAC group, undergoing the same SAC education program as the SAC group for the next 12 weeks. The following questionnaires were administered at baseline, 12, and 24 weeks: Behavioral Activation (BEAct), the Hospital Anxiety and Depression Scale (HADS), the International Prostatic Symptom Score (IPSS), Functional Assessment of Cancer Therapy-F (FACT-Fatigue), and the Mini-Mental State Examination Korean (MMSEK). A one-sample t-test or Wilcoxon signed-rank test was performed based on the satisfaction of normality to test whether the differences between the values obtained at the 12th and 24th weeks and baseline were significant.

Results: Of the 78 patients, only 51 completed the program, and only 58 (74.4%) and 59 patients (75.6%) participated until the 12th and 6th weeks, respectively. Regarding the IPSS, the HRQoL scale showed significant improvement after 24 weeks (p= 0.009). In the BeAct, the work/school life item showed significant differences during the 12th week (p.049), but the 24th-week participant questionnaire did not show any significant difference. In addition, there was no significant difference in any item of the HADS (p>0.05). The FACT showed a significant improvement in the quality of life item during the 12th week (p= 0.030), but not during the 24th week (p= 0.640). Significant differences were observed in the MMSEK after 24 weeks (p= 0167).

Conclusion: This study showed that physical rehabilitation exercises using the SAC program improved overall HRQoL in terms of urinary disturbance, physical exercise in social life, and fatigue in PC patients with ADT.

MP-04.03

Impact of Gonadotropin-Releasing Hormone Agonist on Cardiovascular Disease and Diabetes Mellitus: A Nationwide Population-Based Cohort Study

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Introduction and Objective: Several studies have demonstrated the use of androgen deprivation therapy (ADT) increased the risk of cardiovascular disease and diabetes mellitus (DM) in patients with prostate cancer (PCa). We investigated to clarify whether use of gonadotropin-releasing hormone agonist (GnRHa) is associated with these diseases in the cohort-based from the entire Korean population.

Materials and Methods: Using the National Insurance Service Database, we conducted an observational study of 579,377 men who sought treatment due to PCa between January 1, 2012, and December 31, 2016. After excluding patients with previously diagnosed of cardiovascular disease, DM and Chemotherapy, we extracted data of 2,053 patients who started GnRHa (GnRHa use) and 2,678 men who were newly diagnosed as PCa (Non-use) from July 1, 2012, to December 31, 2012, with follow-up through December 31, 2016. Primary outcomes were development of cerebrovascular attack (CVA), ischemic heart disease (IHD), acute myocardial infarction (AMI), and DM. We also observed the association of ADT duration with the outcomes.

Results: Mean age of patients with GnRHa use and non-use were 72.57 ± 8.34 and 66.77 ± 9.00, respectively (p<0.0001). GnRHa users were older, reside more in the rural area, had lower socioeconomic status and had more comorbidities than Nonusers (all p<0.0500). Although GnRHa users demonstrated an increased incidence of only CVA (p=0.0134) in the univariate analysis, GnRHa use was not associated with an increased risk of CVA, IHD, MI, and DM while age at diagnosis was strongly associated with all 4 diseases in the multivariate analysis. The cumulative duration of ADT was also not associated with the outcomes.

Conclusion: Our complete enumeration for Korean PCa population suggests that ADT was not associated with an increased risk of cardiovascular disease and DM (Differences in patients).

MP-04.04

Tackling Post TRUS Biopsy Sepsis in the Age of Antibiotic Resistance: The Implementation of a Biopsy Protocol Guided by Pre-Biopsy Rectal Swabs

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Introduction and Objective: Urosepsis is a recognised complication (1-2%) of patients undergoing transrectal ultrasound prostate guided biopsy (TRUSBx). Pre-biopsy rectal swabs can be used to direct antibiotic prophylaxis to reduce the incidence of post biopsy

sepsis (PBS). Transperineal (TP) biopsy techniques are becoming increasingly more common as they have a lower incidence of sepsis but are associated with added cost. Since September 2016 patients in our centre, patients with fluoroquinolone resistance (FR) or multi drug resistance (MDR) on pre-biopsy swabs undergo TP template biopsy. This study completes the audit cycle to assess the efficacy of this strategy in reducing sepsis episodes.

Materials and Methods: This retrospective cohort study included all patients undergoing prostate biopsies between October 2015 and April 2018. Data was collected using electronic patient records. Antibiotic resistance was characterised as: No significant resistance (NSR - including gentamicin resistance), FR or MDR (resistance to 2 antibiotics).

Results: 1000 patients were included. 500 underwent pre-biopsy swab, 12 (2.4%) developed PBS with 3 having positive bacteremia (0.6%); 500 had no swab, 44 (8.8%) developed PBS with 22 (4.4%) having positive bacteremia. Two patients (0.4%) of patients who underwent swab developed UTI symptoms whilst 6 (1.2%) had similar symptoms in the cohort without a swab. In those patients that underwent a swab, 14 required hospitalization with mean Length of Stay (LoS) of 2.5 days; 43 patients with no pre-rectal swab were admitted with mean LoS of 3.6 days; 2 of them having Clavien-dindo complication 2. In the swab cohort 453 patients with NSR underwent TRUSBx; 9 (2%) developed PBS ($p<0.01$). 41 patients (8.2%) had FR or MDR organisms; 28 underwent TP biopsy; none had PBS. 13 had TRUSBx against protocol advice during the implementation phase; 3 (23%) developed PBS.

Conclusion: A protocol which dictates TP biopsy in patients with antibiotic resistance minimizes sepsis incidence in prostate biopsy cohort whilst continuing safe use of TRUSBx and maintaining departmental budget. Our results suggest it reduces LoS and high-grade complications. This allows for safer management of patients at our centre where high rates of antimicrobial resistance are seen in rectal flora of the local population.

MP-04.05

Is Single or Two Core Prostate Biopsy Sufficient in Metastatic Prostate Cancer: Retrospective Study from Twelve Core Biopsy Cohort

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Introduction and Objective: Presently, all guidelines recommend 12 cores prostate biopsy regardless of PSA, metastasis or comorbidities. Because detecting even one positive core is sufficient in metastatic prostate cancer, unnecessary twelve core biopsy may be avoided in these patients. This would decrease the pain, morbidity and resource utilization. We aimed to study the adequacy of reducing the number of cores in patients with metastatic prostate cancer.

Materials and Methods: Data of patients who underwent 12 core TRUS guided prostate biopsy between January 2014 and December 2018 was analyzed. Variables studied were cancer detection rate, PSA value, number of cores positive and bone scan results.

Results: In total 400 biopsies were performed between Jan 2014 and Dec 2018. Overall cancer detection rate was 62%; 51% of all positive biopsy patients had bony metastasis at presentation. The mean PSA of patients with negative bone scan was 25 and of patients with metastasis was 234. Number of positive cores in metastatic disease was 12 in 93 patients, 11 in 14 and 10 in 7 patients. Using probability analysis, 94% of the patients with metastasis could be detected with single core biopsy and 97.1% patients would be detected if 2 core biopsy was taken. Hence if two core biopsy is taken only 1 patient out of every 35 would be missed and 34 would benefit from reduced number of cores. A ROC plot between PSA value and bone scan result showed that PSA of >75 had 80% sensitivity and PSA >100 has 85% specificity of detecting positive bone scan status. Patients presenting with PSA >75 could undergo bone scan first and patients with metastatic disease on bone scan could be considered for 2 cores during biopsy. Alternatively, patients with PSA >100 could directly undergo 2 core biopsy.

Conclusion: Two cores biopsy is adequate in most of the patients with metastatic prostate cancer with only 2.9% false negative results requiring 12 core re biopsy. Future studies including prostate volume, PSAD and DRE findings could further decrease the false negative rate and help in setting criteria for reduced biopsy cores.

MP-04.06

Clinical Utility of Non-Targeted Prostate Biopsies in Patients in a Multi-Centre MRI-Targeted and Systematic Biopsy Pathway

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Introduction and Objective: The diagnostic yield of clinically significant prostate cancer (csPCa) in non-targeted biopsies in men with a suspicious mp-MRI remains unclear. The aim of this study was to determine the clinical utility of non-targeted prostate biopsies when performed alongside MRI-targeted biopsies across a network with 3 diagnostic centres.

Materials and Methods: Analysis of a prospective online registry (April 2017 - September 2018). Biopsy advised if MRI score 4-5 or score 3 and PSA-density 0.12. Minimum follow-up 3 months. All biopsies transperineal (TP-Bx). csPCa defined as Gleason 3+4.

Results: 837 patients with mean age, median PSA and median prostate volume 65.3 years (SD 8.8), of 6.8 (IQR 5.1-9.8) ng/mL and 49 cc. TP-Bx performed in 431 and csPCa identified in 210 (48.7%). A total of 337 men underwent combined targeted and non-targeted systematic biopsies. In men with no cancer in targeted biopsy, 7/337 (2.1%) had csPCa in non-targeted and 10/337 (2.9%) clinically insignificant PCa. No Gleason >4+3 in exclusively non-targeted subgroup. When csPCa was detected in targeted-biopsies, csPCa was also present in 50/337 (14.8%) of non-targeted biopsies; clinically insignificant PCa was present in 22/337 (6.5%) of non-targeted biopsies in this group. In men with clinically insignificant PCa in targeted biopsies, csPCa was found in non-targeted areas in 3/337 (0.8%) and insignificant cancer in 4/337 (1.2%).

Conclusion: Overall detection of csPCa in non-targeted systematic biopsies in a pre-biopsy mpMRI pathway is 2.1%. The clinical utility of non-targeted sampling in sub-groups with higher probability of csPCa in targeted cores is to be determined.

MP-04.07

Which Men Should Undergo Non-Targeted Systematic Random Sampling in an Mpmri-Targeted Pathway: A Multivariable Analysis?

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MP-04.06, Table 1.

	n = 337	Non-targeted: Clinically Significant Prostate Cancer	Non-targeted: Clinically Insignificant Prostate Cancer	Non-targeted: No Cancer	Total
Target	Clinically Significant Prostate Cancer	50	22	75	147
	Clinically Insignificant Prostate Cancer	3	4	22	29
	No Cancer	7	10	144	161
	Total	60	36	241	337

MP-04.07, Table 1.

Predictors of csPCa in non-targeted biopsy	Significance *p* – value	Odds Ratio (OR)	95% Confidence Interval (CI)
Age	0.02	1.00	0.96 – 1.00
Referral PSA	0.18	1.03	0.99 – 1.01
PSA Density	0.30	1.46	0.71 – 3.00
PIRADS = 5	0.001	3.54	1.64 – 7.61
Nagelkerke R Square	0.136		
Hosmer and Lemeshow	$p < 0.02$		
Overall percentage correct prediction rate of model	88.7%		

Supplementary Table 1. Multivariable logistic regression analysis of covariates (Age, PSA, PSA Density, PIRADS = 5) in men with csPCa in non-targeted prostate biopsy. OR – Odds ratio, CI – Confidence Interval. Statistical significant was considered p < 0.05.

Introduction and Objective: The diagnostic yield of clinically significant prostate cancer (csPCa) in non-targeted biopsies (NT-Bx) in men with a suspicious mpMRI is 1-7%. The clinical utility of NT-Bx sampling in sub-groups with a higher probability of csPCa in targeted cores is unclear. This study aimed to define predictors of csPCa detection in NT-Bx in a multicentre mpMRI-targeted pathway.Materials and Methods: Multivariable analysis (MVA) of a prospective cancer registry for predictors of csPCa in NT-Bx (April/2017-Sept/2018; SPSSv.25). csPCa defined as Gleason 4+3 and/or MCCL 6mm. All transperineal prostate biopsy. Biopsy advised if mpMRI PIRADS score 4-5 or score 3 and PSA-density >/=0.12. Minimum 3-month follow-up.

Results: 837 men, mean age was 65.3 yrs (SD 8.8). Overall, 431 underwent transperineal prostate biopsy, csPCa identified in 210 (48.7%). In the 337 combined targeted and NT-Bx, csPCa was identified in 40/337 (11.9%), and in 7/337 (2.1%) csPCa was only present in NT-Bx. MVA predictors of csPCa detection identified: Age (p = 0.02 [OR 1.00; 95% CI 0.96 -1.00]) and PIRADS score = 5 (p = 0.001 [OR 3.54; 95% CI 1.64-7.61]). Non-predictors of csPCa detection: Referral PSA (p = 0.18) and PSA-density (p = 0.30).

Conclusion: Men with a pre-biopsy mpMRI-PIRADS of 5 were three times more likely to have csPCa in a non-targeted biopsy in this mpMRI-targeted model. Referral PSA and PSA-density were not significant predictors of csPCa in a non-targeted biopsy.

MP-04.08

Transperineal Prostate Mapping Biopsies in Combination with Prostate HistoScanning for Detection of Clinically Significant Prostate Cancer

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Introduction and Objective: This is a prospective pair cohort validating study to assess the prostate 3D transrectal ultrasound (HistoScanning) performance detecting clinically significant prostate cancer in patients with rising PSA level after previously negative prostate biopsy.

Materials and Methods: Data was collected prospectively from 2016 April to 2018 September for 200 patients who had their serum PSA levels rising for at least 4 months after previous negative transrectal ultrasound-guided biopsy in a single center. All eligible men underwent prostate HistoScanning and transperineal template prostate mapping biopsy as our reference standard and additional single targeted biopsy, when prostate HistoScanning device tested positive with a suspicious lesion of 0.5 cm^3. Our primary goal was to obtain the results of PHS ability to detect clinically significant prostate cancer. Our secondary goal was to acquire data on prostate Histoscanning targeted biopsies.

Results: In our study 200 men were enrolled and the mean age was 62 (±5.9) years. Mean PSA concentration at consent was 5.63 (±2.86) ng/mL. Mean transrectal ultrasound prostate volume was 69.07 (±41.17). Mean number of previous biopsies was 1.51 (±0.65). Forty-one (20.5%) patients had clinically significant prostate cancer on biopsy. One hundred four (52%) patients had prostate cancer of any significance on biopsy. Mean volume of PHS index lesion in any one prostate was 1.56 (±2.01) cm3. One hundred forty-eight underwent targeted biopsies to the largest suspicious lesion detected by prostate Histoscanning. One hundred sixteen (78.38%) were incorrectly classified as benign or malignant by prostate Histoscanning comparing to biopsy results. Thirty (73.17%) patients with clinically significant prostate cancer biopsy results were misclassified as benign by prostate Histoscanning. Two (4.88 %) patients were diagnosed with csPCa by targeted biopsies on prostate Histoscanning suspicious lesions, when on 20-core-TTPM biopsy csPCa was undetected. Sensitivity of prostate Histoscanning for detecting clinically significant prostate cancer was 61.9% (95% CI 45.64-76.43) with specificity 27.85% (95% CI 21-35.53). PPV and NPV for prostate HistoScanning were 18.57% (95% CI 15-22.76) and 73.33% (95% CI 63.45-81.33), respectively. Overall accuracy calculated by AUROC curve was 0.39 (95% CI 0.3-0.47).

Conclusion: Prostate 3D transrectal ultrasound performance results of our study on detecting clinically significant prostate cancer were insufficient to include this ultrasound-guided diagnostic test as standard diagnostic tool.

MP-04.09

PSA Change Ratio (Post-Biopsy PSA To Pre-Biopsy PSA) as an Independent Predictor of Biochemical Recurrence after Radical Prostatectomy

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Introduction and Objective: In previous studies, it has been suggested that the PSA change ratio (post-biopsy PSA to pre-biopsy PSA) could be a predictive factor of high-risk prostate cancer. In this study, we investigated whether the PSA change ratio could be a predictive factor of biochemical recurrence (BCR) after radical prostatectomy (RP).

Materials and Methods: From July 2008 to April 2016, 680 patients underwent radical prostatectomy for localized prostate cancer. Of these patients, 247 patients who had post-biopsy PSA were enrolled. We defined PSA change ratio as post-biopsy PSA divided by pre-biopsy PSA. BCR was defined as a postoperative PSA level of more than 0.2 ng/mL. Statistical analysis was performed using the Kaplan-Meier curve for BCR-free survival comparisons. Cox proportional hazards analysis was performed to evaluate predictive factors for BCR. Most effective cut-off value was analyzed using receiver operating characteristic (ROC).

Results: PSA change ratio was significantly correlated with pathological T stage and status of positive surgical margin (p= 0.003, 0.01, respectively). With univariate analysis, pathological Gleason score and T stage, PSA change ratio, and status of positive surgical margin were significant predictors of overall BCR (all, p <0.001). However, in multivariate analysis, pathological Gleason score, PSA change ratio, and status of positive surgical margin were confirmed as predictors of BCR (p <0.001, 0.002, 0.001, respectively). Cut-off value of PSA change ratio for BCR was 3.73. The BCR-free survival rate for all patients was 78.5%. When patients were categorized according to PSA change ratio, the BCR free survival rates were 67.5% for patients whose PSA change ratio was less than 3.73, 89.4% for those PSA change ratio was 3.73 or greater, respectively (log-rank, p <0.001).

Conclusion: This study demonstrated that PSA change ratio, pathological Gleason score and status of positive surgical margin were significant predictors of BCR after RP.

MP-04.10

Increased Primary Tumour Maximal Standarized Uptake Value (SUVMAX) on 68GA-PSMA PET/CT Correlates with Histologically Aggresive Prostate Cancer

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Introduction and Objective: ^{68}Gallium (^{68}Ga) Prostate-specific membrane antigen (PSMA) positron emission tomography (PET) is an emerging method for the diagnosis and staging of prostate cancer. Early data is promising and supports the use of ^{68}Ga-PS-

MA PET/CT in primary cancer diagnosis, especially in patients who have an ongoing clinical suspicion of cancer despite negative mpMRI scans, or who cannot undergo mpMRI. The purpose of this study was to assess if ^{68}Ga-PSMA PET/CT SUVmax correlated with histological grade in prostate cancer.

Materials and Methods: A retrospective study was performed of 144 consecutive patients who underwent prostate biopsy and 68Ga-PSMA PET/CT in an academic, tertiary referral centre. For each index lesion, an SUVmax value was obtained and compared to biopsy histopathology. Mann-Whitney test was used to compare continuous variables. The diagnostic ability of 68Ga-PSMA PET/CT SUVmax was evaluated using Receiver Operating Characteristic (ROC) analysis.

Results: Median age and PSA of the cohort was 66.5 years and 8.6 ng/mL respectively. There were 3, 5, 67, 33, 10 and 26 patients with nil cancer, Gleason 3+3, 3+4, 4+3, 4+4 and > 4+4 respectively. SUVmax was significantly higher in those with Gleason 3+4=7 (4.58 vs 9.16). On ROC analysis for the detection of clinically significant prostate cancer (Gleason 3+4), an optimal SUVmax cut-off of 6.04 resulted in 100% specificity for 83.7% sensitivity (AUC 0.946).

Conclusion: Aggressive biological characteristics in prostate cancer may be associated with primary tumour SUVmax obtained from 68Ga-PSMA PET/CT.

MP-04.11

Urinary ExoRNAs to Diagnose Prostate Cancer

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Introduction and Objective: It is urgently needed to develop novel biomarkers to supplement PSA testing. ExoRNAs emerged as potent biomarkers in detecting cancer and other human disease. However, the role of exoRNAs in urine to diagnose prostate cancer (PCa) was not studied systemically. We sought to investigate exoRNAs expression profiles by exoRNA-Seq and aimed to identify a urine exoRNA panel to predict diagnosis of PCa.

Materials and Methods: ExoRNA expression profiles were investigated with 10 pairs of PCa and control urine exosome by RNA-Seq. Quantitative reverse-transcriptase polymerase chain reaction (qRT-PCR) assay was then applied to evaluate the expression of selected exoRNAs. A logistic regression model was constructed using an independent cohort (n=300). Area under the receiver operating characteristic curve (AUC) was used to evaluate diagnostic accuracy.

Results: ExoRNA-Seq revealed several differentially expressed exoRNAs, which could be good candidates for PCa diagnosis. We identified exoRNA panel (include 5 exoRNAs) that provided a high diagnostic accuracy of discriminating positive biopsies from negative biopsies (AUC-ROC = 0.842). The exoRNA panel is more effective for detecting positive biopsies from negative biopsies than PSA alone ($p < 0.01$). In the diagnostic gray zone, the exoRNA panel also show a good diagnostic performance to discriminate positive biopsies from negative biopsies (AUC-ROC = 0.800 for the panel versus AUC-ROC = 0.524 for PSA).

Conclusion: The exoRNA panel in urine after DRE was found to be a good predictor of PCa in the initial prostate biopsy in Chinese population. Further large-scale multicenter studies in China are needed to confirm our findings.

MP-04.12

Prognostic Role of SII in Castration-Resistant Prostate Cancer Patients with Abiraterone and Enzalutamide

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Introduction and Objective: A systemic immune-inflammation index (SII) based on neutrophil (N), lymphocyte (L), and platelet (P) counts has shown a prognostic impact in several solid tumors. The aim of this study is to evaluate the prognostic role of SII in metastatic castration-resistant prostate cancer (mCRPC) patients treated with abiraterone and enzalutamide.

Materials and Methods: We retrospectively reviewed consecutive mCRPC patients treated with abiraterone and enzalutamide in our Institutions. X-tile 3.6.1 software, cut-off values of SII, neutrophil-to-lymphocyte ratio (NLR) defined as N/L and platelets-to-lymphocyte ratio (PLR) as P/L. Overall survival (OS) and their 95% Confidence Intervals (95% CI) was estimated by the Kaplan-Meier method and compared with the log-rank test. The impact of SII, PLR, and NLR on overall survival (OS) was evaluated by Cox regression analyses and on prostate-specific antigen (PSA) response rates were evaluated by binary logistic regression.

Results: A total of 123 mCRPC patients treated abiraterone and enzalutamide were included. SII 562, NLR 2.88 and PLR 158 were considered as elevated levels (high risk groups. The median OS was 17.3 months, 21.8 months in SII < 562 group and 14.7 months in SII 562 ($p < 0.0001$). At univariate analysis Eastern Cooperative Oncology Group (ECOG) performance status, previous enzalutamide, visceral metastases, SII, NLR, and PLR predicted OS. In multivariate analysis, ECOG performance status, previous enzalutamide, visceral metastases, SII, and NLR remained significant predictors of OS [hazard ratio (HR) = 5.21, $p < 0.0001$; HR = 2.16, p= 0.011, HR= 1.67, 95% p= 0.014; HR= 1.78, p= 0.003; and HR= 1.84, p= 0.002, respectively], whereas, PLR showed a borderline ability only (HR= 1.42, p= 0.072).

Conclusion: SII and NLR might represent an early and easy prognostic marker in mCRPC patients treated with abiraterone and enzalutamide. Further studies are needed to better define their impact and role in these patients.

MP-04.13

Use of Transperineal Prostate Biopsy to Assess Accuracy of the Rotterdam Prostate Cancer Risk Calculator and Multiparametric MRI in Predicting Significant Prostate Cancer

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Introduction and Objective: Prostate cancer diagnostics and surveillance has evolved. Pre-biopsy multiparametric MRI with Prostate Imaging Reporting and Data System (PIRADS) scoring is standard practice. The use of PIRADS in conjunction with risk calculators such as the Rotterdam Prostate Cancer Risk Calculator are widely used to avoid unnecessary over investigation of men with suspected prostate cancer. We aim to assess these systems further by correlation with transperineal prostate biopsy results that carry lower complication rates and higher diagnostic accuracy.

Materials and Methods: A prospective review of all template biopsies performed at our institution was carried out from January 2017 to December 2018. Demographic data, histology and complications post-biopsy were obtained. Histology results were correlated with pre-biopsy MRI to assess robustness of PIRADS reporting at predicting clinically significant prostate cancer. Rotterdam Prostate Cancer Risk Calculator scores were applied retrospectively to assess its accuracy.

Results: 190 template biopsies were performed during the study period. Mean age was 65 (44-79) and theater mean PSA 9.86 (0.5-40.0 ug/L). Clavien 1/2 complications occurred in 8(42%) patients and no patients developed post-procedure sepsis or infection. Prostate cancer was found in 99 patients with 67% (n=66) of these being clinically significant. The percentage of significant prostate cancer detected by PIRADS scores were: PIRADS-2 (33%), PIRADS-3 (30%), PIRADS-4 (38%) and PIRADS-5 (55%). 32% of all scans reporting PIRADS 2&3 lesions had significant cancer detected. Treatment escalations, where radical treatment was given to 46 patients. For patients with significant prostate cancer at transperineal biopsy mean Rotterdam Prostate Cancer Risk Calculator scores for risk of prostate cancer detection and risk of significant cancer were higher.

Conclusion: Our results illustrate that Trans-perineal template prostate biopsy is a safe procedure and superior at detecting significant prostate cancer when compared to multiparametric MRI and cognitive targeted Transrectal biopsy. In addition, correlation of tranperineal prostate biopsy results with use of the Rotterdam Prostate Cancer Risk Calculator adds further accuracy. Our work indicates further improvement can be made to make pre-biopsy disease prediction more accurate and help to tailor patient selection for prostate biopsy.

MP-04.14

Diagnostic Accuracy of 68Ga-PSMA PET and mpMRI to Detect Intra-Prostatic Clinically Significant Prostate Cancer Using Whole-Mount Pathology. Impact of the Addition of 68Ga-PSMA PET to mpMRI?

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UMC, Amsterdam, Netherlands; University of Amsterdam, Amsterdam, Netherlands; [6]St Vincent' Hospital, Sydney, Australia; [7]St Vincent' Clinic, Sydney, Australia

Introduction and Objective: To evaluate the ability of Prostate specific membrane antigen PET/CT (PSMA PET) to detect intermediate-grade intra-prostatic prostate cancer (PCa), and to determine if PSMA-PET may improve the diagnostic accuracy of multiparametric magnetic resonance imaging (mpMRI).

Materials and Methods: 56 consecutive patients with ISUP 2/3 PCa following radical prostatectomy (RP), with both mpMRI and PSMA-PET CT performed pre-operatively, were enrolled. Accuracy of PSMA-PET, mpMRI alone and in combination were analysed for identifying ISUP 1-3 within a 12 segment model. Accuracy of a combined predictive model (PSMA-PET & mpMRI) was determined. A receiver operating characteristic curve analysis to determine the optimal standardized uptake value (SUVmax) for PSMA-PET in discriminating between ISUP 1 and 2 was performed.

Results: On a per patient basis, identifying ISUP 2-3 PCa, sensitivity for PSMA PET and mpMRI were 100% and 97% respectively. Assessing ISUP 2 using a 12-segment analysis, PSMA-PET demonstrated greater diagnostic accuracy (AUC), sensitivity, specificity, NPV and PPV: 0.91, 88%, 93%, 95% and 85% than mpMRI (PIRADS 3-5) 0.79, 68%, 91%, 87%, and 75% respectively. When used in combination (PSMA-PET and mpMRI PIRADS 4-5), sensitivity, specificity, and NPV and PPV was 92%, 90%, and 96% and 81%, respectively. Sensitivity for both modalities reduced markedly when assessing ISUP 1, PSMA-PET 18% and mpMRI 10%. A SUVmax value of 3.95 resulted in 94% sensitivity and 100% specificity.

Conclusion: PSMA-PET is accurate in detecting segments containing clinically significant intermediate-grade intra-prostatic PCa (ISUP 2), compared with and complementary to mpMRI. By contrast, the detection rate for ISUP 1 disease for both PSMA PET and mpMRI is low.

MP-04.15

EMAS Gonadal Status Related to the Co-Morbidities and Detection of Significant Prostate Cancer in Japanese Patients Undergoing Prostate Biopsy

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Introduction and Objective: We retrospectively investigated whether the European Male Ageing Study (EMAS) gonadal status co-relates with the co-morbidities and detection of significant prostate cancer in the patients undergoing prostate biopsy to detect prostate cancer (PCa).

Materials and Methods: One-thousand and sixty-six Japanese patients who underwent systematic prostate biopsy were enrolled in this study. The median age was 68 years old. Any sort of co-morbidities was found in 55.3% of this cohort. The median values of prostate specific antigen (PSA), free to total PSA ratio (PSA f/t), total prostate volume and PSA density (PSAD) were 9.155ng/mL, 15.9%, 35.3mL and 0.255ng/mL/mL, respectively. The median value of body mass index was 23.44 kg/m/m. The median values of serum total testosterone (TT) and luteinizing hormone (LH) were 16.33nmol/L and 6.98 IU/L, respectively. The European Male Ageing Study (EMAS) gonadal status was defined using two thresholds: TT level of 10.5 nmol/L and LH level of 9.4 IU/L. The four categories are normal or eugonadal (TT10.5nmol/L and LH9.4IU/L), secondary hypogonadism (TT<10.5nmol/L and LH9.4IU/liter), primary hypogonadism (TT<10.5nmol/L and LH>9.4IU/L), and compensated hypogonadism (TT10.5nmol/L and LH>9.4IU/L).

Results: Five-hundred and fourteen, 106, 44, 401 patients were classified as normal/eugonadal, secondary hypogonadism, primary hypogonadism and compensated hypogonadism, respectively. Co-morbidities were found in 52.6%, 58.5%, 55.6% and 70.8% respectively. Therefore, co-morbidities were found more in the patients with EMAS hypogonadism (62.4% vs. 52.6%, P=0.0205). PCa was positive in 57.2%, 46.2%, 72.7% and 62.1%, respectively (P=0.0052). Therefore, PCa was found more in the patients with LH>9.4 (63.2% vs 55.3%, P=0.0116). Multivariate analysis revealed that EMAS primary/compensated hypogonadism (odds ratio, OR 1.772), higher age (OR 1.710), lower PSA f/t (OR 1.669), higher PSAD (4.694) were independent risk factors for PCa diagnosis. In addition, EMAS primary/compensated hypogonadism (OR 2.450), higher age (OR 2.021), higher PSA (OR 1.797), lower PSA f/t (OR 2.078), higher PSAD (OR 4.644) were independent risk factors for high grade PCa defined as Gleason score 7 or higher.

Conclusion: In the patients undergoing prostate biopsy, EMAS gonadal status was related to co-morbidities and detection of significant PCa.

MP-04.16

Comparison of MRI-Fusion Biopsy and Standard Transrectal Ultrasound Biopsy: Clinically Significant Prostate Cancer Detection Rate

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Introduction and Objective: Multiparametric magnetic resonance imaging (mpMRI) fusion biopsy has been demonstrated to detect clinically significant PCa as compared to standard transrectal ultrasound (TRUS) guided biopsy but an optimal PSA threshold for its use is unclear. We evaluated the clinically significant cancer detection rate of MRI fusion biopsy stratified across PSA cutoffs.

Materials and Methods: We reviewed 670 men undergoing MRI-fusion and standard TRUS guided prostate biopsy from January 2016 to June 2018. Patients were divided into 3 groups by PSA: <4, 4-10 and >10 ng/mL. The greatest grade form either MRI-fusion or standard biopsy was compared, clinically-significant (CS) PCa defined as Gleason-score 3+4 or greater.

Results: A total of 348/670 (52%) men were diagnosed with PCa by either biopsy method. Overall CSPCa detection rate was 131/337 (38.9%) in MRI-fusion biopsy and 134/333 (40.2%) in standard biopsy (p= 0.38). By PSA groups, significantly more patients with PSA 4-10 ng/mL had CSPCa found by MRI-fusion vs standard biopsy (63/337 (18.6%) vs 44/333 (13.2%), p= 0.03). However, patients with PSA <4 ng/mL had CSPCa found by MRI-fusion vs standard biopsy (9/110 vs 6/110, p= 0.36), patients with PSA >10 ng/mL had CSPCa found by MRI-fusion vs standard biopsy (70/172 vs 62/172, p= 0.38).

Conclusion: The detection of CSPCa by MRI-fusion biopsy may maximized in patients with PSA 4-10 ng/mL. However, standard TRUS biopsy may identify CSPCa as MRI fusion biopsy in patients with PSA <4 ng/mL, >10 ng/mL, emphasizing the importance of performing standard biopsy in conjunction with MRI-fusion biopsy in these population.

MP-04.17

High Checkpoint Kinase 2 Expression in Prostate Cancer is a Strong and Independent Prognostic Feature in ERG Negative Prostate Cancer

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Introduction and Objective: The assessment of tumor aggressiveness is crucial in prostate cancer treatment, but the established prognostic parameters have limitations and new markers are needed. Checkpoint kinase 2 (CHK2) is a serine-threonine kinase with a role in DNA repair, cell cycle arrest and apoptosis in response to DNA damage. Both reduced and increased CHK2 expression have been described in different tumor types with impact on patient prognosis. As a potential new marker, we evaluated CHK2 for diagnostic and prognostic relevance.

Materials and Methods: To evaluate prevalence and significance of altered CHK2 expression in prostate cancer, a tissue microarray containing 9.733 evaluable tumors was analyzed by immunohistochemistry. For prognostic evaluation of the findings, clinical follow up data was taken into account.

Results: Nuclear CHK2 immunostaining was absent or weak in normal prostate epithelium, but 82.9% of the prostate cancers we evaluated had a positive CHK2 immunostaining (weak in 36.7%, moderate in 34.5% and strong in 11.7% of prostate cancers). High levels of CHK2 staining were associated with advanced tumor stage, high Gleason grade, positive nodal status, positive surgical margin, high preoperative PSA, and early PSA recurrence (p <0.0001 each). High CHK2 expression was also associated with TMPRSS2:ERG fusions (p <0.0001). Subgroup analysis of ERG positive and negative cancers revealed that the impact of CHK2 expression on unfavorable tumor phenotype and poor prognosis was largely driven by the ERG negative cancers. In this subgroup, high CHK2 expression was an independent predictor of patient prognosis. High CHK2 expression was also linked to presence of chromosomal deletions, high level of androgen receptor expression, positive p53 immunostaining, and high Ki67 labeling index.

Conclusion: High CHK2 expression is linked to adverse tumor features and independently predicts early biochemical recurrence in ERG negative prostate cancer. CHK2 measurement, either alone or in combina-

tion, might improve risk stratification in this prostate cancer subgroup.

MP-04.18

Claudin-1 Upregulation is Associated with Favorable Tumor Features and a Reduced Risk for Biochemical Recurrence in ERG Positive Prostate Cancer

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Introduction and Objective: The estimated risk of tumor progression is crucial for the treatment of prostate cancer, but common prognostic markers have limitations. To improve risk stratification, new observer- independent markers are needed. Claudin-1 is a membrane tight junction protein and important for the sealing of the paracellular cleft in epithelial and endothelial cells. Differential expression of Claudin-1 is linked to disease outcome in various cancers. In this study we evaluate the diagnostic and prognostic relevance of Claudin-1 expression in prostate cancer.

Materials and Methods: A tissue microarray containing samples of 13.464 tumors with annotated clinico-pathological and molecular data was immunohistochemically analyzed for Claudin-1 expression. To evaluate the prognostic relevance, clinical follow up data was taken into account.

Results: In normal prostate, glandular cells were always Claudin-1 negative while there was a strong staining of gland-surrounding basal cells. In contrast to normal prostatic glands, a positive Claudin-1 immunostaining was found in 38.7% of the interpretable cancers (weak in 12.7%, moderate in 13.2%, and strong in 12.8% of cases). Positive Claudin-1 immunostaining was associated with favorable tumor features like low pT (p= 0.0212), low Gleason grade (p <0.0001), low preoperative PSA (p <0.0001) and was associated with a reduced risk of PSA recurrence (p= 0.0005). A positive Claudin-1 staining was markedly more frequent in ERG positive (63%) than in ERG negative cancers (22.8%; p <0.0001). Subset analyses revealed that all associations of Claudin-1 expression and favorable phenotype and prognosis were driven by ERG positive cancers. In multivariate analyses it became apparent, that even in ERG positive cancers, the prognostic impact of high Claudin1 expression was not independent of established clinico-pathological parameters.

Conclusion: Claudin1 is a promising diagnostic and prognostic marker in prostate cancer. The protein is overexpressed in a fraction of prostate cancers and increased Claudin-1 expression levels predict a favorable prognosis in ERG positive cancer.

Moderated ePosters Session 5 Miscellanous/ Education

Friday, October 18, 2019
1545–1700

MP-05.01

Sexual Function Outcomes in Patients and Patients' Spouses After Midurethral Sling Procedure for Stress Urinary Incontinence: Data from a Minimum of 5 Years of Follow-Up

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Introduction and Objective: The midurethral sling (transobturator tape [TOT]) procedure has been widely performed for treatment of urinary incontinence; however, little has been reported regarding sexual function after surgery. Our previous study reported sexual function in couples after TOT procedure. In this prospective study, we investigated the sexual function follow-up outcomes in these patients and their spouses.

Materials and Methods: Between September 2012 and June 2013, 65 patients undergoing TOT and their sexual partners were enrolled. The validated self-administered questionnaires, Female Sexual Function Index (FSFI) and satisfaction domain of the Male Sexual Health Questionnaire (MSHQ), were used to evaluate the couples' sexual function. They completed the questionnaires before the procedure, at 3, 6, and 12 months after the procedure and every year for 3 years.

Results: Of 65 couples, 45 couples completed this study. The mean ages of the patients and their partners were 44.5 ± 4.3 and 46.2 ± 5.2 years, respectively. The mean follow-up period was 62.4 ± 2.1 months. A significant decrease in the total FSFI score was observed at 3 postoperative months ($P = 0.002$), which recovered at 6 postoperative months. A significant improvement was observed in the total FSFI score from baseline to 5 postoperative years ($P < 0.001$). There were significant improvements in desire, arousal, orgasm, and satisfaction in the FSFI domains ($P = 0.008$, 0.07, 0.025, and < 0.001, respectively). For the male partner, there was no statistically significant correlation between 12 and 60 postoperative months although the MSHQ satisfaction domain scores tended to increase over the long-term follow-up.

Conclusion: Over 5 years of follow-up, the outcomes suggest that sexual satisfaction for patients and their partners improved following the TOT procedure, and was relatively well maintained.

MP-05.02

Case Distribution of Mid-Urethral Sling Surgery in Australia Compared to the Rest of the World: Do Warnings Work?

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Introduction and Objective: There has been much publicity in Australia regarding the role of mid-urethral slings (MUS) in the treatment of stress urinary incontinence (SUI). Previous research from Canada has suggested no significant change in MUS procedures after relevant Government advisories (see Welk and Winick-Ng, 2015 and Carlson et al, 2017).We sought to quantify the behaviour of surgeons in England and Australia around important policy releases, including: 1) United States Food and Drug Administration (FDA) warning (October 2008), 2) FDA update on safety of urogynaecology surgical mesh (July 2011), 3) Australian Department of Health Therapeutic Goods Administration (TGA) review of mesh implants (August 2014) and 4) TGA removal for use of transvaginal mesh implants for pelvic organ prolapse (POP; December 2017).

Materials and Methods: Australian data was obtained from the Department of Human Services (DHS) using applicable Medicare Benefits Schedule (MBS) item numbers. Hospital Episode Statistics (HES) were obtained for England's National Health Service (NHS) from the Health and Social Care Information Centre. Data was analysed from the period 2008 to 2018. Total case numbers were converted into per capita totals using the respective 2011 census population figures for each country to allow for comparative analysis.

Results: Data from Australia and England demonstrate similar patterns of declining MUS procedures in the past decade (Figure 1). Significant change in rates of procedures is evident in both countries from 2014. Australia has also seen a further steep decline in procedures performed since the TGA ban on transvaginal mesh for POP.

Conclusion: Recent controversy and subsequent legislative changes in relation to the safety of use of mesh has caused significant impact on the use of MUS in Australia and England. This has important implications for the management of SUI in these countries, highlighting the need for surgeons to address concerns and educate patients in relation to appropriate treatment options to ensure adequate treatment continues to occur.

MP-05.03

Urinary Incontinence in the Hippocratic Era

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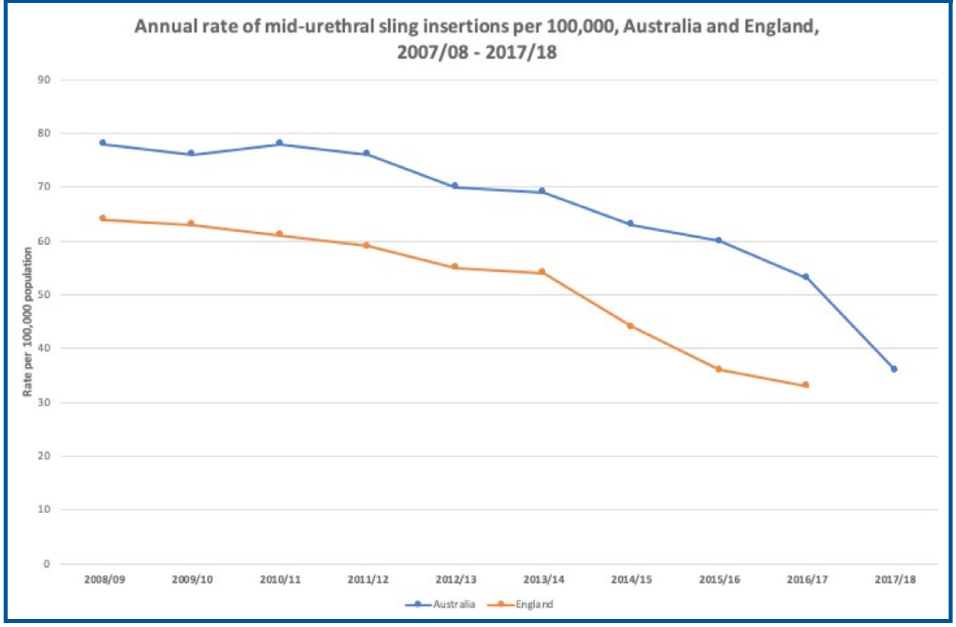
Introduction and Objective: To describe the perception and management of urinary incontinence in Ancient Greece with particular emphasis in the Hippocratic era.

Materials and Methods: A meticulous literature review of articles found on PubMed and on Google Scholar related to urinary incontinence as that is depicted through medical history.

Results: Ancient Greece has played an important role in laying the foundations of clinical medicine. Its principles have been embraced by people of different cultures across the centuries and helped shape modern day medicine. Hippocrates (c.460-c.370 BC), a prominent figure in Ancient Greek medicine and founder of the Kos medical school, has written extensively about different ailments including that pertaining to the urinary tract. He systematically assessed his patients with medical history and physical examination. Hippocrates introduced uroscopy (macroscopic urine examination) as an additional tool for patient evaluation and he believed that uroscopy has an important role not only for diagnosis but also for prognostic purposes. According to Hippocratic references, urinary disorders were classified in the following four categories: difficult urination or dysuria, dropwise urine or strangury, urinary retention and urinary incontinence. Severe disorders of urination appear frequently in descriptions by the Kos medical school implying the impact that such symptoms had on patients. Urinary incontinence was perceived as

MP-05.02, Figure 1.



unconscious discharge of urine and was distinguished into two main types, namely copious and drop urine wise urinary incontinence. The main principle of treatment was treating the underlying cause and focused around the use of herbal remedies. It was not until the 17th-19th Centuries that medical therapies began to emerge and surgical techniques were formally introduced in the 19th century.

Conclusion: It is of note, that even from the Hippocratic era, people were concerned about urinary symptoms as those had an impact on human lives. Although there was lack of scientific knowledge and technology, preliminary efforts were made to classify urinary disorders including urinary incontinence and initial approaches were made to manage those conditions. With regards to urinary incontinence, it is unsurprising that such a complex disease process took a long time to be understood better and for medical and surgical treatment modalities to be initiated.

MP-05.04

Bladder Stone Surgery: History of the High Operation

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Introduction and Objective: Bladder stone surgery has been synonymous from antiquity with perineal lithotomy. For various reasons, novel approaches to bladder stone surgery were met with resistance. We explore the history of the suprapubic lithotomy otherwise known as the 'high operation'.

Materials and Methods: A comprehensive literature search was performed using Medline, PubMed, Google Scholar and historical texts using the terms 'bladder stone', 'high operation', 'suprapubic', 'lithotomy' and 'cystolithotomy'.

Results: The first high operation reportedly took place during the Renaissance. Colot performed a suprapubic lithotomy on a criminal in 1475, however the surgery was largely forgotten until the first recorded case by Pierre Franco a century later. Following failed perineal lithotomy, Franco performed a suprapubic lithotomy to successfully remove a bladder stone in a child. Despite his success, the high operation once again fell into obscurity for many decades. In 1719 it was re-introduced by John Douglas who realised that a distended bladder could be entered extraperitoneally. This was described by Cheselden in 1722 although he would favour perineal lithotomy for his further practice. In 1758 Frere Come developed an approach to suprapubic lithotomy with the 'sonde-a-dard' device that avoided painful bladder distension. A century later the Victorian era saw the advent of anaesthesia which facilitated the suprapubic approach and wider acceptance.

Conclusion: From antiquity to 150 years ago the perineal approach to lithotomy was considered the gold standard. From stuttering starts the high operation found its place with the era of anaesthetic and displaced perineal lithotomy. Even in the era of transurethral lithotripsy we still have occasion to call upon suprapubic lithotomy to this day.

MP-05.05

Fessenden Nott Otis 1825 - 1900: The Man Behind the Urethrotome

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Introduction and Objective: Otis is survived in urology by the Otis urethrotome, an instrument used for internal urethrotomies in the management of distal urethral strictures. Otis' surgical engineering has been used for over 100 years since its inception in 1870, replaced by the Sachse method of direct vision internal urethrotomy in 1970.

Materials and Methods: A non-systematic search of online resources, electronic journals, and archived e-books was performed.

Results: F. N. Otis was born on 5th May 1825 in Saratoga, NY, United States. His family emigrated from England to Massachusetts in the late seventeenth century and his father was also a doctor. Otis gained his diploma of medicine in 1852 from New York Medical School, where he excelled and received a gold medal for his thesis. He completed his internship at the Charity Hospital, a penitentiary hospital which served both prisoners and the poor. In 1853, Otis became a surgeon in the Pacific Mail and Steamship Company and later joined the Panama and Pacific Railroad Company in 1859. His artistic works earned him honorary membership to the "Artists' Fund Society", New York. In 1867, he authored "Isthmus of Panama: History of the Panama Railroad…", a richly illustrated book on the Panama transcontinental rail project. He later lectured at the College of Physicians and Surgeons, Columbia University, and became Professor of Genito-urinary and Venereal Diseases in 1871.

Conclusion: Otis disproved the accepted theory of the time that the male urethra was limited to 27Fr, and his research into post-gonorrhoeal strictures developed a number of instruments such as dilating urethral sounds (adopted by Clutton, but invented by Otis), the urethrometer, and the urethrotome. He performed hundreds of urethrotomies, pioneering techniques and instruments which deserve recognition.

MP-05.06

The Role of FDG PET/CT in Evaluation of Response to Systemic Therapy for Metastatic Renal Cell Carcinoma: Dissenting View and Evidence

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Introduction and Objective: The application of FDG PET/CT has been limited in renal cell carcinoma (RCC), mainly due to physiological excretion of the isotope by the kidney. We evaluated the role of FDG PET/CT in the evaluation of response to systemic therapy in patients with metastatic RCC. We also compared its utility with CECT (the present standard of care) in this setting.

Materials and Methods: We prospectively observed 24 patients from June 2016 to January 2018 with metastatic RCC on systemic therapy after having undergone cytoreductive nephrectomy. A baseline study (both FDG-PET-CT and CECT) was done after cytoreductive nephrectomy and repeated after 3months of systemic therapy. Response evaluation was done as per the PERCIST and updated RECIST criteria separately on each patient.

Results: Among our patients, Sunitib was given to 6 patients and pazopanib in 11. Everolimus and Axitinib were given to 3 and 4 patients respectively. Metastases were seen in lymph nodes in 15 patients, bone in 9 and viscera in 6. On initial PET/CT evaluation, median SUV max was 8.1 (2.2-19.41), median metabolic tumor volume (MTV) was 49 mL (1-572) and median Total lesion glycolysis (TLG) was 298.9 (4.22-4571.76). After 3 months, median change in SUV max was -0.071 (-15.2-6.6) and TLG was 0.018 (-0.999-14.6). As per PRECIST criteria, one patient had complete response (CMR). Partial Metabolic Response (PMR) was seen in 7 cases, Stable Metabolic Disease (SMD) in 8 and Progressive Metabolic Disease (PMD) in 8. Out of the 24 patients, only 19 had similar scores with both PRECIST and RECIST criteria. Use of PET CT led to upgradation from Partial Respone to Stable Metabolic Disease in 1 and Progressive Metabolic Disease (PMD) in 3 patients. This led to a change in therapy for these patients. The Cohen's kappa was 0.694. Median follow up was 16 months (6-24). We had 1 mortality, which was in the PMD group.

Conclusion: Both NCCN and EAU guidelines state that PET-CT is not recommended in RCC. While this may be true for localized RCC, it is an excellent tool for follow up imaging in metastatic RCC, especially in the post nephrectomy setting and larger studies are needed to validate the same.

MP-05.07

Can MRI Safely Estimate Treatment Margin for Prostate Cancer Focal Therapy?

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Introduction and Objective: In planning focal therapy for organ confined prostate cancer, there is limited data on the size prediction using multiparametric (mp-MRI). This study evaluates the accuracy of mp-MRI in estimating cancer size and treatment margin, and the impact of cancer grade on adequacy of MRI evaluation.

Materials and Methods: This IRB approved study (CIRB 2017/2651) enrolled radical prostatectomies operated between 1 January 2015 to 31 December 2017. Inclusion criteria were pre-operative mp-MRI performed in our institution, either pre-biopsy or > 1 year from prostate biopsy, and available whole-mount histology. Those with prior prostate cancer treatments were excluded. Lesions on imaging were matched to histology and measured at the same axial plane, correcting for specimen shrinkage. Calculated lesion areas were compared using Spearman's rank correlation. High grade cancers were correlated separately in the same way. Bland-Altman plot was used to assess size discrepancies between imaging and histology and evaluate the adequacy of predicted focal therapy treat-

ment margin. Analyses were performed per lesion, statistical significance defined as p <0.05.

Results: There were 70 suitable cases, comprising 122 histology confirmed cancer detected by mp-MRI (MRI true positives). Median prostate shrinkage was 16% (range 1 to 37). Mean lesion area was 108.9 mm2 (SE 9.2, 95%CI: 90.6 to 127.1) on mp-MRI, and 107.9 mm2 (SE 11.2, 95%CI: 85.8 to 130.0) on histology. Mean high-grade lesion area was 54.9 mm2 (SE 9.7, 95%CI: 35.8 to 74.0). Spearman's rho= 0.75 (95%CI: 0.66 to 0.82, p <0.0001) when comparing size on MRI with histology, and rho= 0.59 (95%CI: 0.46 to 0.70, p <0.0001) when comparing MRI size with high grade cancer only (consistently overestimated on MRI). On Bland-Altman plot, size discrepancies were consistently within <100 mm2 (5.5 mm radius) when MRI underestimated lesions up to 140 mm2 (13 mm diameter). Within entire lesions up to 140 mm2, all high-grade cancer was well within <100 mm2 size discrepancies.

Conclusion: There is good correlation between lesion size on mp-MRI and histology. The optimal cancer size for focal therapy seems to be 13 mm in upper limit diameter, with a radial safety margin of 5.5 mm, within which all high-grade cancers can be safely ablated.

MP-05.08

5 Star Study: Single Centre Randomised Placebo Controlled Double Blind Comparative Study Between Alpha Blockers, Anticholinergics, B3 Agonist and Phosphor Diesterase Inhibitors in DJ Stent Related Symptoms

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Introduction and Objective: Although DJ stents are an integral part of endourological management, they are associated with stent related symptoms which impair quality of life. Many drugs and stent material have been studied and used to decrease stent related symptoms. We did a comparative study of four different drugs used for this purpose.

Materials and Methods: After institutional ethical and scientific committee approval, the study was conducted at our institute from January 2018 to January 2019. Fifty patients between 18 to 60 years of age were enrolled in each group. Patients with prior LUTS, DM, B/L stent, pregnant mothers and patients who were on trial drugs for other indications or contraindication of trial drugs were excluded. Same material (Teflon) DJ stent was used and patients having distal coil of stent crossing midline on post procedure xray were excluded. All the patients were randomised by computer generated numbers into 5 groups. Patients received 21 days course of Alfuzosin 10 mg, mirabegron 50 mg, solifenacin 10 mg, tadalafil 5 mg (single dose night time) as per their group after catheter removal. Folic acid tablets were given as placebo. 1st follow up visit was conducted between 7th to 10th day after discharge and second visit at 21st day after discharge. Patients were evaluated by various parameters like urinary symptoms score(voiding and storage) by IPSS, QOL measures, pain score, sexual function, general measures realeted to absent from work and any additional measures like unplanned consultation, adverse reactions and early stent removal.

Results: Demographic data were comparable in all the groups. Urinary symptoms, work performance, QOL and body pain were significantly improved with alpha blockers. B3 agonist and anticholinergics were significantly improve storage and body pain symptoms. PD5I was the only group which improved sexual performance. All drugs were tolerated by patients. Three patients in PD5I group and 4 in placebo group unplanned visit and 2 of them needed early stent removal in either group.

Conclusion: Usage of various medicines improves stent symptoms and QOL but none of them improves them in all the aspects. All drugs are safe and tolerable by patients. Large multicentric trial is required.

MP-05.09

Improvement of Blood Pressure in Hypogonadal Men Receiving Long-Term Treatment with Testosterone Compared to a Hypogonadal Control Group: 6471 Patient-Years of Clinical Experience

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Introduction and Objective: Hypogonadism was added to the 2018 AUA Guidelines with 31 Statements, 3 of which mention cardiovascular related factors. In an ongoing registry study in a single urology practice, we monitored cardiovascular related parameters for up to 12 years.

Materials and Methods: We report data from 805 men with symptomatic hypogonadism participating in a registry study started in 2004. 412 men received testosterone undecanoate (TU) injections 1000 mg/12 weeks following an initial 6-week interval (T-group), 393 opted against TTh and served as controls (CTRL). Changes over time between groups were compared by a mixed effects model for repeated measures with a random effect for intercept and fixed effects for time, group and their interaction and adjusted for age, weight, waist circumference, blood pressure, fasting glucose, lipids and quality of life to account for baseline differences between groups.

Results: Mean (median) follow-up: T-group 8±3 (8), CTRL 8±2 (9) years. Total observation time: T-group 3309, CTRL 3162 years. Baseline age was 58±7 in T-group and 64±5 years in CTRL.Antihypertensives were used by 52.7% in T-group and 46.7% in CTRL, Statins by 43.6% in T-group and 55.7% in CTRL. All patients were encouraged to change lifestyle at baseline.T-group: Systolic blood pressure (SBP) decreased by 23.6±0.7mmHg in year 10. CTRL: SBP increased by 7.7±0.8mmHg. Estimated adjusted difference between groups: -31.3mmHg.T-group: BMI decreased by 6.0±0.1kg/m2 in year 10. CTRL: BMI increased by 1.1±0.2kg/m2. Estimated adjusted difference between groups: -7.0kg/m2.Over the whole observation time no MI or stroke occurred in T-group, 59 MI and 52 strokes were observed in CTRL.

Conclusion: Long-term TTh in hypogonadal men improved blood pressure despite advancing age. In an untreated control group, blood pressure worsened. BMI and waist circumference both increased in untreated controls while decreasing in the treated patients.

MP-05.10

Alfa Blockers Dosage for BPH and Quality of Life of The Patient – Does It Affect Our Decision?

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Introduction and Objective: For the last 45 years, alfa blockers drugs have played a crucial role in the treatment of BPH patients. However, while many of those patients dropped out from the daily treatment, no general effort from the urologic community was made to evaluate the reason for the noncompliance or the need of the daily use of these drugs.

Materials and Methods: 320 patients entered the study. The patients were divided into two groups. The first group (n=165) were patients who received alpha blockers but wished to discontinue with the drug. The second group (n=155) were patients who were recently diagnosed with BPH. Patient's baseline entrance in FLOWMETRY was QMAX less than 12 and or urine more than 60 mL. Baseline IPSS was more than 15 points. Patients from the first group and the second group were instructed to change their daily usage of Tamsulosin and to upgrade or degrade the daily usage of the drug according to the flow and their own quality of life. The tailored usage of the drugs was carefully monitored by IPSS and periodical FLOWMETRY.

Results: The average max flow rate in the first group was 13.1 and 10.5 in the second. Mean IPSS score was 16 in the first group at the start and 22 at the second group. A third of the patients from the first group were unable to change their habits. A fifth of the patients of that group could keep an alternating daily usage of Tamsulosin, and half continued and could change their daily usage of Tamsulosin to twice a week. Immediate improvement was reported among 118 out of the 155 patients from the second group, while no change in quality of life was reported in 5 percent. The FLOWMETRY and IPSS among the first group of patients kept with a small range of 3 points on the IPSS score. In the second group the IPSS improved dramatically to 15 and remained so.

Conclusion: Quality of life should play an important role in doctor making decision while giving alpha blockers to BPH patients.

MP-05.11

An Unusual Presentation of an External Urethral Mass

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Introduction and Objective: We discuss an unusual presentation, a vulval-urethral mass, of a rare condition, primary bladder lymphoma. We discuss the history, the investigations (with images) and the treatment. We then review this rare disease.

Materials and Methods: A 78-year-old lady (with mild dementia) was investigated for non-visible haematuria. On flexible cystoscopy a large soft irregular mass was seen extruding from the urethra. It was continuous with a mass involving the neck and trigone with a diffusely reddened bladder. Urine cytology revealed hyperchromatic nuclei but no obvious malignant cells. She underwent TURBT of the internal component and a biopsy of the external component.

Results: Both specimens showed diffuse infiltration by large malignant lymphoid cells with frequent mitotic figures and apoptotic bodies. High Ki67 95%. These features were consistent with diffuse large B cell lymphoma.On CT urogram, there was a lobulated lesion at the level of the trigone measuring approximately 3 x 2 cm in size. It appears to further extend superiorly along the posterior wall to the level of the left VUJ. A right inguinal node measured 27mm. She was referred after TURBT, to the haematology team who commenced prednisolone 40mg and 4 cycles of multi-agent low dose chemotherapy R-Pmit CEBO in 6-week cycles. There was shrinkage of the tumour. She then received 30 grays of external beam radiotherapy over 15 sessions. She achieved an excellent response.

Conclusion: The lymphoma arises in the sub-mucosal follicles. Peak age is 40-60 with women being affected more commonly. It more usually forms part of a systemic picture. There is a spectrum of variants, with T cell, Burkitts, diffuse large B and Hodgkins. The most frequent variant is the low-grade mucosa associated lymphoid tissue variant. Diagnosis is by microscopy and appropriate immunohistochemistry staining. These are done to exclude lympho-epithelial carcinoma and small cell neuro-endocrine carcinoma which can mimic this.

MP-05.12

Knowledge Attitude and Practice (K.A.P.) Gap for the Stone Disease Management in Patients with Recurrent Stone Disease: Survey Based Analysis of Tertiary Care Centre at High Stone Burden Area and Its Implementations.

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Introduction and Objective: Person who had renal stone once has 50% chances of having renal stone within 10 years. Being in tertiary care centre of high stone belt area we are dealing with huge number of patients facing consequences of recurrent stone disease. We have noticed a wide gap in knowledge, attitude and practice of these patients regarding their problem.

Materials and Methods: After institutional ethical and scientific committee approval we have prospectively collected data of patients who were presented to our hospital with history of any form of stone surgery or documented lithuria. Children less than 14 years, mentally retarded patients and socially dependant old age patients were excluded as they are under the influence of their care taker.

Results: We have collected a data of 500 patients having recurrent stone disease. Among them only 24% of patients were under regular follow up and detected stone on their follow up. 80% among them are male and highly educated. In the rest 76% of cases, 70% were of female patients. Education status is below par in that group. 25% had history of spontaneous lithuria. In this group 16% were feared for surgery, 21% were waiting for medical management, 18% were consulted quacks, 15% had economical problems, 8% didn't have any symptoms and detected accidently and 25% were waiting for spontaneous passage of stone with local home-made remedies. 5% were required nephrectomy in that group and 15% had some form of complications due to delaying the management. Mean delay time was 11 months in that group and more in case of female patients.

Conclusion: Proper knowledge of follow up protocols must be council with the patients and encourage them to consult as early as possible if they have symptoms of detection of stone on investigations to avoid complications and ensure safe renal health.

MP-05.13

Age Affects Speed of Acquiring New Laparoscopic Skills

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Introduction and Objective: Introducing new skills in the setting of minimally-invasive surgery (MIS) can have long and variable learning curves. This study was undertaken to evaluate the impact of age on the ability of learning novel surgical techniques in the MIS setting.

Materials and Methods: Thirty-two subjects were recruited into the study representing a wide range of ages and educational levels. Trainees were divided into four groups with eight individuals in each group. Group one (GRP #1) was composed of eight senior high schools. Group two (GRP #2) was comprised of eight senior undergraduate college students. The third group (GRP #3) were medical students in the third or fourth year of medical school. The fourth group (GRP #4) was constituted of eight PGY1 or PGY2 residents. Trainees were asked to perform nine successive, novel tasks in a standardized laparoscopic training box. Each series of nine tasks were repeated for five trials in order to assess the maximum efficiency of carrying out the assigned novel skills.

Results: High school students exhibited the longest average trial time to completion during the first repetition of the nine serial tasks. However, by the end of five repetitions, high school students were demonstrating the fastest average time to complete the nine assigned tasks. These were followed by undergraduate students and medical students. Interestingly, residents constituted the slowest group after five repetitions of the nine tasks.

Conclusion: These preliminary results suggest that younger individuals acquire novel laparoscopic skills with greater efficiency than do senior students and surgical residents. These results raise the larger question of how we may need to change surgical education and the selection of future surgical candidates based in part on psychomotor information and skills acquisition.

MP-05.14

A New Portable, Warm-Up and Low-Cost Laparoscopic Surgical Simulator – A Validation with Commercial Simulator

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Introduction and Objective: We present a new portable, low-cost mobile based surgical simulator and compare to a commercially available simulator. We validated it for its face, content, construct and concurrent validity.

Materials and Methods: The new surgical simulator uses any mobile smartphone as camera, light source and display. It is homemade with manufacturing cost <11 USD (Rs 750/-), dimensions of 18" ×5" ×10", weighing around 500 gm. 18 urological surgeons (12 residents and 6 consultants) were included in the study. They were asked to perform some exercises on both simulators. Their performance was scored on the basis of time and penalty by an independent observer. Accordingly, their total score was calculated. Lower scores were better. Every surgeon rated both the simulators subjectively on the Likert scale 1-5 based on questionnaire.

Results: The simulator experience was rated positively by novice and experts with mean score of 2.8 to 5 and 3.5 to 5 respectively, establishing its face and content validity. They all thought the new simulator is portable, performs warm-up exercises, records and maintains log of one's performance and helps distant coaching. The mean scores of the tasks on new simulator were less or equal to the old simulator but was not statistically significant. This showed the similar performance on both the simulators, proving non-inferiority of the new simulator and its concurrent validity. The mean scores of the expert group were significantly less than the novice in all the tasks performed on new simulator except the circle cutting task. Thus, the new simulator could differentiate between novice and the expert surgeon, thus establishing its construct validity.

Conclusion: This new portable, home-made, low-cost mobile based surgical simulator has all four validity to be used as a surgical simulator. This new simulator may prove boon in developing countries where cost is a concern.

MP-05.15

TUR-P Phantom for Resident Surgical Training: A Home-Made Human Mimicking Model of the Prostate

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Introduction and Objective: Transurethral resection of the prostate (TUR-P) remained as gold-standard treatment in treating Benign prostatic hyperplasia (BPH), thus its mandatory for all urology residents to develop surgical and technical skills for TUR-P. However, current dry lab training for TUR-P is either still expensive or inadequate to emulate prostate resection on human. This study would like to develop a novel

MP-05.14, Table 1. New Low-Cost Laparoscopic Surgical Simulator vs commercial simulator

QUESTIONNAIRE	commercial	New	P Value	Significance	Tasks	Commercial	New	p value	Significance	Novice	Expert	p value	Significance
Eye- hand coordination	4.3	4.3	0.5	NS	Polo transfer	89.1	83.9	0.331	NS	102.1	53.5	0.0003	S
Depth perception	3.9	3.5	0.063837	NS	Sugar stalk	81.7	70.0	0.180	NS	81.8	50.3	0.0274	S
Maneuverability	3.8	3.8	0.5	NS	Circle cut	227.8	208.4	0.195	NS	221.7	186	0.1100	NS
Do you think exercises are representative to learn laparoscopic skill?	4.6	4.4	0.271273	NS	Needle hold	27.9	25.0	0.407	NS	32.1	13.2	0.0003	S
Do you think type of training should be part of residency curriculum?	4.6	4.5	0.270079	NS	Needle rotate	20.5	11.4	0.05	S	13.6	7.7	0.0247	S
Do you think this would change your ease of doing laparoscopic surgery?	4.3	4.3	0.5	NS	Needle drive	12.6	12.9	0.445	NS	15.4	8.8	0.0242	S
Do you think this simulator is portable?	1.4	4.9	0.0001	S	Needle wrap	31.5	22.9	0.132	NS	25.9	17.8	0.0563	S
Do you think this simulator can be used as warm-up before actual surgery?	1.5	4.1	0.0001	S	Knot tying	55.5	53.6	0.433	NS	68.5	28.8	0.0009	S
Do you think this simulator can be used for recording your performance?	2.4	4.7	0.0001	S									
Do you think this simulator can be used for distant coaching?	2.1	4.3	0.0001	S									

model similar to human prostate in terms of its texture profile and anatomy.

Materials and Methods: Ten designs of prostate model were proposed. Objective measurement, subjective measurement, and anatomical design development were done in this study. For objective measurement, texture profile parameters were measured comparing the designs with human prostate, using Lloyd Texture Analyzer TA-XT2i (Llyoid Instruments, Ametek Inc). Four texture parameters were included, namely hardness, elasticity, cohesiveness/consistency, and adhesiveness/stickiness. Most similar model to human prostate were selected for subjective measurement by urologist review using satisfactory questionnaire, and comparison with a control model was done. Feedbacks from the questionnaire were used as reference in developing a 3D design to mold the model.

Results: In objective measurement, each designs and prostate underwent two successive compression cycles using Texture Profile Analyzer. Mean Hardness, elasticity, cohesiveness/consistency, and adhesiveness/stickiness of human prostate were 3753.4±673.4, 85±1.9, 0.7±0.03, and 0 respectively. Design number IX were objectively more similar to human prostate with results of 3660.7±465.6, 87.0±2.5, 0.6±0.05, 0 respectively. Subjective measurement from urologists (n=22) by comparing the prostate model with control resulted in mean score of 16.95±1.36 and 8.86±3.10 respectively (P=0.001). Most of the respondents agreed that the texture, consistency, and phantom ability to mimic human prostate upon resection were similar to human prostate. Most of the feedback were to add anatomical hallmarks of prostate, e.g. verumontanum, medial, and lateral lobes. We used these feedbacks to develop a mold designed to produce these important hallmarks.

Conclusion: This study developed a cost-effective homemade prostate model that is objectively and subjectively similar to human prostate in terms of its texture and sensation upon TUR-P resection provided with important anatomical hallmarks. Future development is planned for the whole urinary system to help emulate the procedure on real patients.

MP-05.16

Are Basic Robotic Surgical Skills Transferable from the Simulator to the Operating Room? A Randomized Double-Blinded Prospective Educational study

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Introduction and Objective: Several robotic simulators have been shown to improve basic robotic skills. But there are no studies showing that basic robotic skills could be transferred to the operating room. The aim of this study was to assess the transferability of basic robotic skills from the daVinci Surgical Skills Simulator to the operating room.

Materials and Methods: Fourteen robotic-naïve urology residents were randomized to 2 groups: Group A were required to practice 3 sessions on the simulator whereas Group B was required to practice until reaching competency as defined by the Norm-referenced method with 5 experts. All experts and residents performed were recorded while performing 9 exercises on the simulator. After completion of the simulation training, both groups performed bladder mobilization and urethro-vesical anastomosis during robotic prostatectomy. Recordings were assessed blindly using the validated GEARS tool using C-SATS. Wilcoxon rank-sum test was used to assess differences between groups. Spearman's correlation coefficient (rho) was used to assess correlation between the GEARS scores obtained on the simulator and in the operating room.

Results: In the operating room, there were no differences in total GEARS scores between the 2 groups. GEARS' efficiency component score during "Energy and dissection" task on the simulator correlated with GEARS' efficiency component during bladder mobilization in the operating room (rho= 0.62, p= 0.03). GEARS' force sensitivity score during "Ring & rail" and "Dots and needles" tasks on the simulator correlated with GEARS' force sensitivity score during bladder mobilization in the operating room (rho= 0.58, p=0.047; rho = 0.65, p=0.02, respectively). Total GEARS scores for "Ring & rail" and "Suture sponge" tasks correlated with the total GEARS scores during anastomosis (rho= 0.86, p= 0.007) and (rho=0.90, p=0.002).

Conclusion: Objective blinded assessment of simulator tasks correlated well with objective blinded assessment of bladder mobilization and anastomosis during robotic prostatectomy. Therefore, competency in basic robotic skills could be transferred from the simulator to the operating room.

MP-05.17

Avoidable Out of Hours Emergency Urology Admissions: A Quality Improvement Project

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Introduction and Objective: The U.K has seen a 42% increase in emergency admissions over the last twelve years. This has translated to the increasing difficulty for hospitals to reliably deliver elective care, often with patients being cancelled. We noticed a concerning number of patients being unnecessarily admitted out of hours. The aim of this quality improvement project was to assess and improve the current status of Urology out of hours admissions.

Materials and Methods: We used the Plan-Do-Study-Act (PDSA) quality improvement methodology. Questionnaire surveys were distributed to the Surgical SHO for urology patients admitted out of hours over a 2-week period pre- (n=32) and post- intervention (n=34). Various parameters were evaluated. Clinical notes, imaging and laboratory tests were reviewed. Patients admitted for less than 24 hours were further assessed to evaluate whether their admission was avoidable. Our intervention consisted of an emergency urology lecture delivered to trainees (FY1-CT2). Furthermore, we introduced a new policy where all admissions were required to be discussed with the Urology Registrar.

Results: Pre and post intervention audits revealed improved rates of escalation to the urology registrar (41%vs87% p=0.04), and avoidable admissions (35%vs90% P=0.02). We also demonstrated a reduced length of admission, patients that were not clerked and those that were incorrectly worked up and had a change in their diagnosis/management.

Conclusion: There was a significant improvement in rate of escalation as well as avoidable admissions through our interventions. The implementation of which led to improved patient safety, an essential part of good clinical governance.

Moderated ePosters Session 6 Penis/ Testis/Urethra, and Transplant

Saturday, October 19, 2019
1400–1530

MP-06.01

Comparison of Open and Pneumovesical Approaches for Politano-Leadbetter Ureteric Reimplantation: A Single-Center Long-Term Follow-Up Study

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Introduction and Objective: To report our extensive experience with the laparoscopic pneumovesical approach for Politano-Leadbetter ureteric reimplantation and compare the results with those obtained using the traditional open approach.

Materials and Methods: We retrospectively reviewed the medical records of 54 patients who underwent Politano-Leadbetter ureteral reimplantation between 2012 and 2017. Perioperative parameters, postoperative outcomes, and complication rates for patients who underwent the open approach for the Politano-Leadbetter procedure and those who underwent laparoscopic pneumovesical approach were compared.

Results: During the study period, 54 ureteric reimplantation procedures were performed. Twenty-eight and 26 patients underwent surgery using the open and pneumovesical approaches, respectively. The mean operative time did not differ between the groups (143.64 min vs. 128.12 min, p= 0.092). However, the pneumovesical group had a shorter hospital stay duration (5.08 days vs 7.43 days, p= 0.001) and required less morphine analgesic for pain than the open group (7.7% vs 32.1%, p= 0.027). No significant differences in success rate (94.6% vs 91.7%, p= 0.487) or procedure-related complications were noted between the pneumovesical and open techniques.

Conclusion: The laparoscopic pneumovesical approach for Politano-Leadbetter ureteric reimplantation is safe and effective and associated with fewer postoperative morbidities and shorter hospital stay duration than the traditional open method.

MP-06.02

Polyuria and Polydipsia in Posterior Urethral Valve - Significant Risk Factors for Progression to End Stage Renal Disease

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Introduction and Objective: To identify the variables which affect the long-term renal outcome in children with posterior urethral valves (PUV).

Materials and Methods: Retrospective analysis of 370 children with PUV was done who underwent transurethral ablation of valves between January 1992 and June 2017 at our tertiary care center. Risk factors analyzed were - nadir serum creatinine greater than 1.0 mg/dL, bilateral grade 3 or higher VUR at diagnosis, recurrent febrile UTIs, severe bladder dysfunction, polyuria (urine output greater than 3 mL/kg/minute) and polydipsia (oral fluid intake greater than 100 mL/kg/day and 50 mL/kg/day under and above 5 years respectively). On the basis of development of ESRD, patients were divided into two groups: those who developed (Group 1) and those who did not develop ESRD (Group 2).

Results: 60% and 25.2% patients were polyuric in group 1 and group 2 respectively (p value <0.0001). Almost the same numbers were polydipsic in both the groups (p value <0.0001). Thirty-eight (12.3%) patients progressed to ESRD. Mean age at progression to ESRD was 11.5 years (range 5-21). On univariate analysis, the risk predicting variables were nadir serum creatinine value greater than 1 mg/dL (p value <0.0001), B/L high grade VUR (p value= 0.002), severe bladder dysfunction (p value <0.0001), polyuria and polydipsia (p value <0.0001). On multivariate logistic regression analysis, nadir serum creatinine greater than 1 mg/dL (OR 23.79; CI 8.20-69.05), severe bladder dysfunction (OR 5.67; CI 1.90-16.93), polyuria and polydipsia (OR 4.45; CI 1.80-15.05) were found to be independent risk factors predictive of progression to ESRD.

Conclusion: Polyuria and polydipsia along with the nadir serum creatinine and bladder dysfunction are the main risk factors affecting the long-term renal outcome in cases of PUV.

MP-06.03

Retractile Testis and Gliding Testis

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Introduction and Objective: It is very difficult to distinguish the retractile testis from the gliding testis in the clinic. We want to find the rate and size of gliding testis compared to retractile testis.

Materials and Methods: We evaluated 71 consecutive boys who performed unilateral or bilateral scrotal orchiopexy for retractile or gliding testis under 2 years old. We included 114 (83.2%) retractile testes and 23 (16.8%) gliding testes and excluded 7 inguinal testes in these patients. We distinguish retractile testis and gliding testis as two anatomical findings of the gliding testis: the abnormal attachment of the gubernaculum and a patent processes vaginalis. Additionally, we compared with 21 hydrocele testes for the control group. Testis volume was calculated using the Lambert formula, length * width * height * 0.71.

Results: The mean age was 17.1 ± 4.2 moths (8-24 months). The gliding testes were more frequently unilateral than the retractile testis. The bilaterality was 64.8% in the retractile group and 2.8% in the gliding group, and 23.9% in retractile and gliding group in each laterality. Volume of testis was 1.05 ± 0.41, 0.88 ± 0.27 and 1.12 ± 0.24 cc in retractile testis, gliding testes and testis with hydrocele in each. (P=0.018) There was significant different in volume only between gliding testis and testis with hydrocele. However, there was no significant between gliding testis and retractile testis, and retractile testis and testis with hydrocele. The epididymal abnormality was found 12.3% and 52.2% in retractile and gliding group in each.

MP-06.01, Table 1. Comparison of the pneumovesical and open approaches for Politano-Leadbetter ureteric reimplantation

	Open approach (n = 28)	Pneumovesical approach (n = 26)	p Value
Mean follow-up (months)	53.50 ± 32.33	32.08 ± 21.84	0.007
VUR resolution (%, cured renal unit/total renal unit)	91.9% (34/37)	94.7% (36/38)	0.487
Mean operation time (min)	143.64 ± 33.13	128.12 ± 33.30	0.092
Single	133.06 ± 28.44	114.31 ± 30.54	0.099
Bilateral	157.75 ± 34.80	141.00 ± 31.04	0.242
Mean indwelling catheter duration (days)	7.00 ± 1.33	4.20 ± 1.27	0.001
Hospital stay (days)	7.43 ± 1.85	5.08 ± 1.38	0.001
Complication	3 (10.7%)	2 (7.7%)	0.396
Wound infection	2	0	
Port displacement	0	2	
Extravesical leakage	1	0	
Postoperative UTI	1	1	
Reoperation	0	0	
Pain control			
Ibuprofen	20 (71.4%)	13 (50.0%)	0.091
Morphine analgesic (1 mg/kg intramuscularly every 4 hours)	9 (32.1%)	2 (7.7%)	0.027

Conclusion: The gliding testis is 16.8% under 2 years old boy with hypermobile testis and had a smaller volume and more frequent epididymal abnormality than retractile testis. Therefore, orchiopexy should be considered when the testis was difficult to distinguish the retractile testis from the gliding testis in the clinic.

MP-06.04

Penile Anthropometry in North Indian Population (A Study of 1800 Cases)

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Introduction and Objective: Every parent is concerned about the size of penis and clinicians frequently encounter questions regarding the normal size. Hence, there is a need to develop pediatric penile nomograms to define the range of normalcy so that the variation in penile biometrics can be better identified. We evaluated normal variations of penile dimensions, correlation of penile length with height, weight, and body mass index (BMI) of boys and analyzed the differences in penile dimensions from those reported from other countries. The objective was to develop a penile nomogram from the study population.

Materials and Methods: A cross-sectional study was conducted at our institution from October 2012-December 2014. A total of 1800 subjects were evaluated and divided into 18 groups with 1-year interval taking 100 children in each. Penile dimensions measured twice by a single observer with Vernier calipers including the length of flaccid penis fully stretched and diameters at mid-shaft and corona. Diameters were multiplied by pi ($\pi = 3.14$) to calculate circumferences. Mean, standard deviation, and range were calculated. Height, weight, and BMI were noted and statistically correlated with the penile length using the Pearson correlation coefficient. Data were compared with similar studies reported on other populations in the past using Student's t -test.

Results: The mean values for the penile length, mid-shaft circumference, and coronal circumference were 3.56, 3.28 & 3.54 cm during infancy, 4.16, 3.84 & 4.08 cm in 4-5 years group, 5.77, 5.24 & 5.59 cm in 9-10 years group, and 12.13, 10.84 & 11.99cm in 17-18 years group respectively. The penile length increased with advancing age in successive age groups, but it did not have a direct correlation with either height, weight, or BMI. Penile dimensions in North Indian children were found to be statistically smaller in comparison with most studies from other countries.

Conclusion: The penile length increases with advancing age, but no direct correlation with body weight, height or BMI could be established. Penile dimensions in North Indian children were found to be statistically smaller in comparison with most of the previous studies conducted in other countries.

MP-06.05

Pediatric Hydrocele; Particular Characteristics and Classification

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Introduction and Objective: The purpose of this study is to identify the characteristics of pediatric hydrocele and to propose a new clinical classification and treatment method.

Materials and Methods: From July 2014 to June 2018, we retrospectively analyzed 150 patients (186 units) who underwent laparoscopic surgery for hydrocele. The patients were classified as follows according to the clinical characteristics (cystic dense, reducible), internal inguinal ring (IR) types (hole with communicating, hole with tapering, closed) and treatment methods (Group 1: laparoscopic assisted high ligation only, Group 2: high ligation + scrotal aspiration, Group 3: hydrocelectomy). We compared the success rate and complications. The patients with reducible hydrocele were performed only high ligation, with cystic dense hydrocele were added aspiration. When the hydrocele had closed IR, hydrocelectomy was performed.

Results: The mean age of the patients was 30.4 (19-105) months. The mean follow-up duration was 28 (4-52) months. There were two clinical features; cystic dense in 71, reducible in 115. There were three types of IR; hole with communicating in 121, hole with tapering in 61, closed in 4. The size of the testis had hydrocele was smaller than contralateral side. There were 124 units in group 1, 50 units in group 2 and 12 units in group 3. The success rate was 97.6% (121/124) for group 1, 98% (49/50) for group 2 and 100% (12/12) for group 3.

Conclusion: The size of testes with hydrocele was smaller than the other side. Laparoscopy for classification is necessary for accurate diagnosis and treatment, which may reduce unnecessary scrotal surgery.

MP-06.06

Study on the Effectiveness of Preoperative Suture of Superficial Penile Vein in Suture Circumcision

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Introduction and Objective: In recent years, disposable circumcision sutures are widely used in clinical practice. It has the advantages of no suturing, short operation time, less bleeding, low infection rate and beautiful appearance. However, the disposable circumcision suture device does not ligature large blood vessels when cutting the foreskin. It is more likely to occur subcutaneous hematoma. In our study, we try to preoperatively suture the visible, thicker superficial penile veins at the far-end of cut point to avoid subcutaneous hematoma or edema.

Materials and Methods: A total of 100 patients, aged 20 to 33 (25 ± 2) years old, were enrolled in the outpatient clinic in our hospital from January to June 2018 because of prepuce or circumcision. Group A: the visible, thicker superficial penile vein was first sutured at end-far of the stapler suture. Group B: direct suture circumcision. The hematoma is a dark purple swollen area with subcutaneous confinement. According to the hematoma diameter, it is divided into small hematoma (< 5 mm), middle hematoma (5 ~ 10 mm), and large hematoma (> 10 mm).

Results: There were 32 cases of penile hematoma after operation,6 cases in group A and 26 cases in group B. The smaller hematoma is wrapped with gauze pressure. In group B, there were 5 cases of large hematoma immediately after operation. There was only a small amount of oozing in the margin of the group A, and the amount of bleeding was 1 to 3 (1.6 ± 0.3) mL. The amount of bleeding was 2 to 15 (2.5 ± 0.6) mL of the group B, and the difference was statistically significant ($P < 0.01$).

Conclusion: Overall, suturing circumcision is a beautiful, time-saving, and highly satisfactory surgical procedure. During the operation, firstly, under the suture (the direction of the root of the penis), the 4-0 absorbable suture can be used to suture the superficial shallow vein of the penis, which can reduce intraoperative bleeding and prevent hematoma.

MP-06.07

The Efficacy of Vitamin D/zinc Supplementation on Erectile Dysfunction: A 3-Month Pilot Study

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Introduction and Objective: The previous research across the general population in the United States showed that vitamin D (VD) deficiency was associated with increased erectile dysfunction (ED) prevalence. While observational studies have established the presence of an association between VD levels and ED, there is paucity of study regarding the efficacy of VD supplementation on ED. Also, the previous study proved close interdependence of zinc and testosterone production and hence the link between zinc and erectile dysfunction. This study aimed to evaluate the therapeutic effect of vitamin D (VD)/zinc supplementation for elderly erectile dysfunction (ED) patients.

Materials and Methods: In this prospective, single-arm pilot study, 28 patients (mean age 65.1 ± 6.5; range 54-84 years) who complaints erectile dysfunction were recruited between February 2018 and April 2018. The medical history and laboratory test including lipid profile, HbA1c, serum testosterone and serum vitamin D -25(OH) D were obtained at baseline. All patients were given vitamin D3 1,000 IU/day and zinc 12 mg/day for 12 weeks, and asked to complete the International Index of Erectile Function (IIEF-5) questionnaire at baseline and post treatment 12 weeks.

Results: Vitamin D deficiency (< 20 ng/mL) was present in 19 patients (67.9%) and their mean VD level was 11.2 ± 3.9 ng/mL. Mean age, body mass index, lipid profile, HbA1c, and serum testosterone were similar between men with VD deficiency and without VD deficiency. The IIEF-5 score was increased significantly in men with VD deficiency (from 11.2 ± 4.9 to 14.2 ± 5.8, $p < 0.01$), while it does not observe in men without VD deficiency (from 9.3 ± 6.4 to 8.3 ± 4.6, $p < 0.526$).

Conclusion: This study showed that VD/zinc supplementation improves erectile function in elderly men with VD deficiency. Large scale and randomized placebo-controlled interventional trials of VD treatment in patients with ED is necessary to identify the putative roles of VD/zinc treatment in ED.

MP-06.08

Advanced Glycation End-Products Measuring with Skin Auto Fluorescence: Correlation with Diabetic Erectile Dysfunction and Non-Diabetic Erectile Dysfunction

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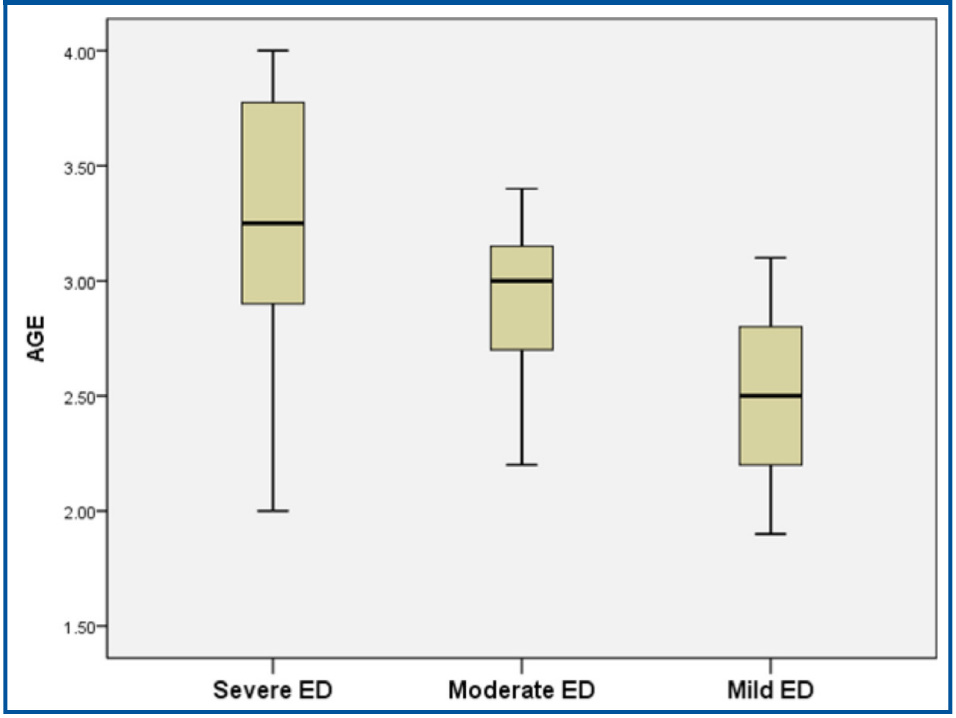
Introduction and Objective: Skin autofluorescence is a noninvasive marker of advanced glycation end products (AGEs). Recent studies have evidenced a relationship between skin autofluorescence and several microvascular complications of diabetes mellitus (DM). Also, there are evident that DM and aging, increasing risk of developing erectile dysfunction (ED), are favor condition for AGEs accumulation. Thus, the study was conducted to explore the association between AGEs (assessed by skin auto fluorescence) and ED with or without DM.

Materials Methods: Between February 2018 and September 2018, 46 patients with diabetic ED and 100 patients with non-diabetic ED were consecutively enrolled in a descriptive, cross-sectional study and compared to 56 healthy controls. ED was assessed with the International Index of Erectile Function (IIEF-5). Skin autofluorescence was measured on the volar aspect of the arm with an AGE-Reader and expressed in arbitrary units (AUs).

Results: The mean age was 65.6±8.9 for diabetic ED, 66.1±7.9 for non-diabetic ED and 57.4±6.2 for healthy control. The AGEs were significantly higher in both diabetic and non-diabetic ED group than control group. (2.91±0.58 in diabetic ED, 2.67±0.55 in non-diabetic ED and 2.23±0.35 in control, p < 0.001 respectively). IIEF-5 score was significantly correlated with AGEs in the diabetic ED group (r= -0.630, p < 0.01) and in the non-diabetic ED group (r= -0.282, p < 0.005). In diabetic ED group, AGEs were related to ED severity (Figure 1), however, it was not observed in non-diabetic ED group. A receiver operating characteristic analysis revealed that the area under the curve for determining severe ED was 0.80 (95% Cl; 0.66-0.94) and cut-off value of AGE was 3.05 AU in diabetic ED group. AGEs were significantly correlated with IIEF-5 score after controlled for potentially confounding factor in the multivariate analyses only in the diabetic ED group (p < 0.030).

Conclusion: The results show that AGEs is strongly correlated with the presence and severity of ED, especially with DM.

MP-06.08, Figure 1. The relationships between AGEs and the ED severity in the diabetic ED group.



MP-06.09

Management of Male Anterior Urethral Stricture: Results from a National Survey among Urologists in Spain

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Introduction and Objective: Assessment of urethral stricture (US) management seems important to evaluate the quality of attention and plan educational interventions. We aim to investigate the patterns on diagnostic and therapeutic approaches to adult male anterior US among urologists in Spain.

Materials and Methods: Invitation to participate was sent to all members of AEU (Spanish Urological Association) by email. Non-validated, anonymous, 23-questions online survey was linked to each invitation. Demography data and information about practices on evaluation and treatment of anterior US were included. In total, 1737 invitation letters were sent by email, with 21.7% response rate. Data was prospectively collected during 8 months (February-September 2016), sending reminder emails every 2 months. Descriptive analysis and univariate comparisons were conducted using X^2 test. Statistical significance considered when P ≤0.05.

Results: Responders were mainly from Tertiary (63.6%) and Teaching University Hospitals (70.2%). Age distribution was uniform. 63.2% treated ≥ 10 patients/year with US. Retrograde urethrogram (RUG) was the commonest diagnostic tool (99.5%) followed by uroflowmetry (UF). Internal urethrotomy under direct vision (DVIU) was the most frequent treatment (95.7%) along with urethral dilatation. 84.4% limited DVIU for US ≤1.5 cm. 62.3% performed ≤5 urethroplasties/year. Anastomotic urethroplasties were performed by 75.7% and graft repairs by 68.9%. Dorsal grafting was preferred rather than ventral. Non-transecting techniques were used by 23.9%. UF was the most common follow-up tool (94.7%). Up to 23.9% of responders would refer a patient with a 3.5 cm bulbar stricture, while only 17.6% if the stricture had measured just 1 cm. Half of the urologists rated their training on US treatment as adequate, and 88.4% stated that referral units are required. Tertiary hospitals used Patient Reported Outcome Measure (PROM) questionnaires more frequently than secondary centres (P= 0.016). High-volume urologists were more likely to use non-transecting techniques (P <0.001) and to choose urethroplasty as first choice procedure (P= 0.002).

Conclusion: Male anterior US in Spain are treated by many urologists, mainly using endoscopic procedures. RUG is preferred for diagnosis, and UF for follow-up. A high percentage of urologists perform urethroplasties, mainly anastomotic repairs, but in low volume. Referral centres are felt as necessary and educational activities required.

MP-06.10

Sheet Graft Versus 1.5:1 Meshed Grafts for Neoglans Reconstruction Following Glansectomy or Distal Corporectomy

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Introduction and Objective: Split-thickness skin graft is typically used in neoglans reconstruction following glansectomy or distal corporectomy. A sheet graft (SGr) is harvested from anterior thigh and secured over the tip of the penis both with quilt and secure stitches. Sheet grafts provide excellent cosmetic result, but they carry a theoretical risk of graft failure due to subgraft hematoma. In contrast, meshed grafts (MGr) are considered safe in term of graft take, but they are aesthetically inferior. The aim of this study was to compare the surgical outcomes in sheet grafts with 1.5:1 meshed grafts.

Materials and Methods: This was a retrospective comparative study of patients who undertook penile-preserving surgery for penile cancer or lichen sclerosus with at least 6 months follow up. We included those who underwent sheet grafts or 1.5:1 meshed graft neoglans reconstruction. Patients with disease

recurrence were excluded. Primary endpoint was the percentage of graft loss while secondary outcomes were any intervention to prevent graft slough, patient reported aesthetic result (scale 0-10) and sexual performance (IIEF Questionnaire). Pearson test was used for correlations and t-test to assess intra-group variability.

Results: We studied 12 men who underwent neoglans reconstruction. Mean age was 59.6. 4 had 1.5:1 meshed grafts while 8 had sheet grafts. There was one graft loss due to hematoma in SGr group (12.5%) and none in MGr group. Two patients in SGr group required drainage of a subgraft seroma. Patients in SGr group reported an aesthetically acceptable result (mean value 8.4) while patients in MGr group were less than delighted (mean value 6.5). There were no differences in sexual performance between the groups.

Conclusion: The results show that 1.5:1 is superior to sheet graft with regard to graft loss. Sheet grafts are superior in terms of cosmesis, but they carry a risk of impaired inosculation due to graft mobilization. Simple fenestration (meshing 1:1) might reduce graft loss rates.

MP-06.11

Testis Sparing Surgery in 65 Patients with Testicular Mass: Eurasian Uro-Oncology Association Multicenter Study

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Introduction and Objective: Testis sparing surgery (TSS) is applied in selected patients with testicular masses. We herein analyzed the oncological and functional safety of this method.

Materials and Methods: In this multicentric study we reviewed the outcomes of 65 patients who underwent 66 TSS for different indications.

Results: Mean patient age was 31.0±10.8 years. In 47 patients TSS was performed as an elective procedure (normal contralateral testis). 13 patients had previous unilateral orchiectomy (10 radical orchiectomies (RO) for germ cell tumors). 5 patients had bilateral synchronous testis tumors where 4 underwent unilateral RO and TSS on the contralateral side, 1 had bilateral synchronous TSS. Overall, 47 masses were benign and 19 were testicular cancers (seminoma n= 12, nonseminoma n= 7). Mean tumor size of the benign and malignant tumors was 16.1±10.8 mm and 16.7±7.6 mm, respectively (p= 0.85). All patients with germ cell tumors had Stage 1 disease. Mean pathologic tumor size was 15.5±8.0 mm. Intraoperative frozen section evaluation of the mass was performed in 45 patients (all benign pathology). Tumor bed biopsies were taken in 18 patients with malignant TSS pathology and intratubular germ cell neoplasia (ITGCN) was detected in 4 (22.2%), 3 of them had concurrent cancers ≥2 cm. During 25.5±22.7 months follow-up, no patient developed systemic disease, local recurrence was detected in 4 patients who metachronously needed RO (3 with ITGCN in frozen section). Of the 16 patients with malignant pathology, 13 patients had normal preoperative testosterone levels, that remained at normal level following TSS in 10 patients. Erectile dysfunction (ED) was present in the remaining with testosterone deficiency needing hormonal replacement. No ED was reported in the 45 patients with benign lesions.

Conclusion: TSS seems to be a safe and feasible approach with adequate cancer control and preservation of sexual function in 2/3 of patients harbouring malignancy.

MP-06.12

Outcomes of Penile Cancer in a Multicentre Australian Cohort

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Introduction and Objective: Penile cancer is a rare malignancy in the developed world. The management guidelines are mainly derived from retrospective studies and currently there are no randomised trials. The primary objective of this study was to assess patterns of practice and outcomes of penile squamous cell carcinoma across several tertiary hospitals in Melbourne, Australia.

Materials and Methods: A retrospective, multicentre database of patients undergoing treatment for penile cancer was created between January 1999 and August 2018. Patient demographics, presentation, clinical status of inguinal node, cancer stage, recurrence patterns and clinical outcomes were reviewed. All data was de-identified and analyzed using IBM SPSS version 22 and Microsoft Excel. Continuous variables were expressed as medians with ranges. Categorical variables were expressed as numbers with percentages. Kaplan- Meier survival analysis was performed to calculate overall survival (OS) and relapse free survival (RFS). Overall survival was calculated from time of detection of penile cancer to last follow up. Relapse free survival was calculated from time of surgery to last follow up. Log rank test was used to assess statistical significance. Factors affecting survival were identified using univariate analysis. Multivariate logistic regression analysis was performed to identify factors independently affecting overall survival.

Results: A total of 96 patients with histologically proven squamous cell carcinoma of the penis were included in the analysis with a median patient age of 67.7 (32-92.5) and median follow up of 14 months (0-142). Human papilloma virus (HPV) status was known in 49 patients, with HPV positive patients having a longer overall survival than HPV negative patients. Organ preserving surgery was the most common operative management for primary tumour (n=79, 82.3%), followed by radical surgery (n=15, 15.6%). Histopathological staging of the primary tumours demonstrated pT1 (37.4%), pT2 (44%), pT3 (16.5%), pT4 (1.1%). The majority of patients had N0 disease (n=56, 62.2%). Dynamic sentinel lymph node biopsy was performed in 52% of patients.

Conclusion: Over the past decade, there has been a shift towards centralised management of penile cancer which has resulted in increased organ-preserving surgery and sampling of inguinal nodes. These changes have resulted in acceptable oncological outcomes.

MP-06.13

The P.E.N.1.3 Score: A Standardised System for Quantifying Penile Tumours

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Introduction and Objective: There is an absence of evidence confirming the oncological superiority of one treatment strategy directly compared to another for localised penile cancer, and treatment decisions depend largely on experience of the treating clinician. Surgical decision making and data set comparisons would be significantly enhanced by a consistent, reproducible system that quantitates the pertinent characteristics of localised penile tumours. Currently, there is no system to characterise penile tumours. We present a structured, reproduceable, quantitative scoring system to describe and classify the most surgically relevant features of localised penile cancer.

Materials and Methods: A consecutive sample of men undergoing surgery for penile cancer from January 2000 to August 2018 from 8 institutions were included. We defined complex tumours as those that underwent radical penectomy. Multivariable logistic regression analysis was used to identify predictive factors for complex penile tumours. We then used the beta coefficients from this model to develop a complexity score akin to nephrometry score. Receiver operating curves were created to assess predictive performance.

Results: A total of 90 patients were eligible for analysis of which 15 (16.7%) underwent radical penectomy. Lesion location and cystoscopy results were found to be predictors of undergoing radical surgery. Lesions located in areas other than the glans were significantly more likely to be complex and undergo radical penectomy [OR 10.02, 95%CI 2.34-55.84]. Patients with a lesion observed on cystoscopy were also more likely to require radical treatment [OR 52.94, 95%CI 3.67-1691.04]. The PEN13 score allocated points for the

following clinical characteristics: (P)osition (location other than glans 2 points), (E)ndoscopic lesions (not performed 2 points, lesion visible 10 points) and (N) umber (number/size of lesion largen than 42.5mm 1 point), with a maximum score of 13. The median PEN13 score was 2 (IQR 2-4). The area under the curve for the PEN13 score in predicting radical vs partial penectomy was 0.88 (95%CI 0.80-0.96).

Conclusion: Standardised reporting of penile tumour size, location, and lesion on cystoscopy are essential for decision making and effective comparisons. The PEN13 score is a reproducible standardised classification system allowing comparison of penile tumours in clinical practice and the urological literature.

MP-06.14

Validation of the 8th TNM Staging System for Penile Cancer and Refinement of Prognostication in Node-Positive Disease

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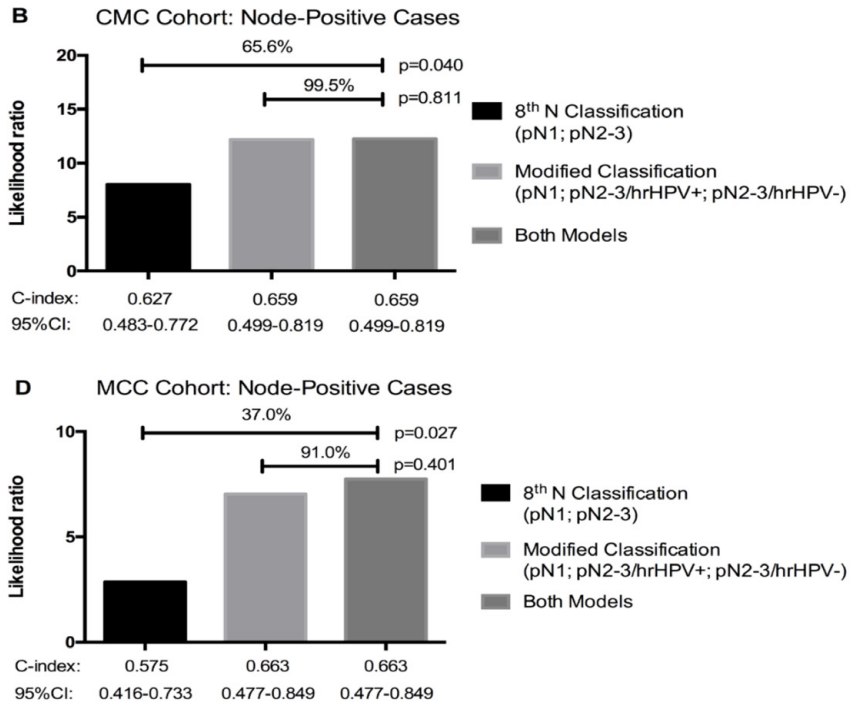
Introduction and Objective: To validate the prognostic value of the 8th TNM staging system and assess a modified N stage by incorporating high-risk human papillomavirus (hrHPV) status in a multi-center cohort.

Materials and Methods: The entire cohort consisted of 292 patients with M0 penile squamous cell carcinoma from 6 referral centers and hrHPV status was examined. The Chinese multi-center cohort (n=230) was used to validate the 8th TNM staging system and propose a modified N classification. The modified N classification was further validated in an independent cohort (n=62) from Moffitt Cancer Center (MCC).

Results: The median follow-up was 48.9 months. 42.1% of patients had node-positive disease with a 5-year overall survival (OS) of 47.5%. In the primary cohort, the 8thedition achieved better discriminative ability compared with the 7thedition with a C-index of 0.769 versus 0.751 (p=0.029). The 8thN category could better stratify survival between pN1 and pN2 (HRs compared to N0 from pN1 to pN3: 2.47, 5.30 and 8.50, p<0.001) and reclassify 14.82% of the node-positive disease into pN1 with a 5-year OS of 63.87%. HrHPV status could further stratify pN2-3 disease (p=0.040) and pN2-3/hrHPV- disease had a dismal 5-year survival of 32.48%. The newly-proposed 3-tier classification (pN1, pN2-3/hrHPV+, pN2-3/hrHPV-) significantly increased the C-index from 0.627 to 0.659 compared to the 8thN classification (pN1, pN2-3) (p=0.04). Results of significant improvement (C-index from 0.575 to 0.663, p=0.027) were observed in the external validation of the modified N classification with MCC.

Conclusion: The 8thedition of the AJCC staging system for penile cancer, especially the N category, showed better discriminative ability in prognostic stratification. The addition of hrHPV status would further improve the prognostic stratification in node-positive disease.

MP-06.14, Figure 1.



MP-06.15

Risk of Genitourinary Malignancy in the Renal Transplant Patient

Jiang S, Jackson S, Calvert C, Pruett T, **Warlick C**

University of Minnesota, Minneapolis, United States

Introduction and Objective: The management of prostate, renal, bladder, testicular, and penile cancer in transplant recipients is challenging and remains controversial. Currently there is no consensus regarding screening and management, with much of the clinical decision-making based on historical practices that fail to take into account recent progress in both genitourinary (GU) cancer diagnosis and management, as well as the immunosuppression protocols used by modern transplant teams.

Materials and Methods: The University of Minnesota Solid Organ Transplant database, curated based on UNOS data collected from 1984 - 2017, was queried for renal transplant recipients in whom development of subsequent urologic malignancies (prostate, bladder, renal, penile, and testicular cancer) was found.

Results: In total, 4983 renal transplants were performed from 1984 to 2017 at the University of Minnesota. Among patients who underwent renal transplantation, genitourinary tumors were detected in 197 subjects (3.9%). The predominant genitourinary cancer was renal cell cancer, both of the native and of the transplanted kidney (n = 83), follow by prostate cancer (n = 59), bladder cancer (n = 44). Cumulative incidence of all cancers of a genitourinary etiology are presented, with each of the respective GU malignancies demonstrating respective 20-year incidence rates from the time of transplant of less than 4%.

Conclusion: This study presents analysis of the Minnesota experience with regard to the incidence of GU malignancy in the immunosuppressed transplant patient. We demonstrate that despite heavy screening, there is no increased risk of developing GU malignancy in this population of renal transplant recipients.

MP-06.16

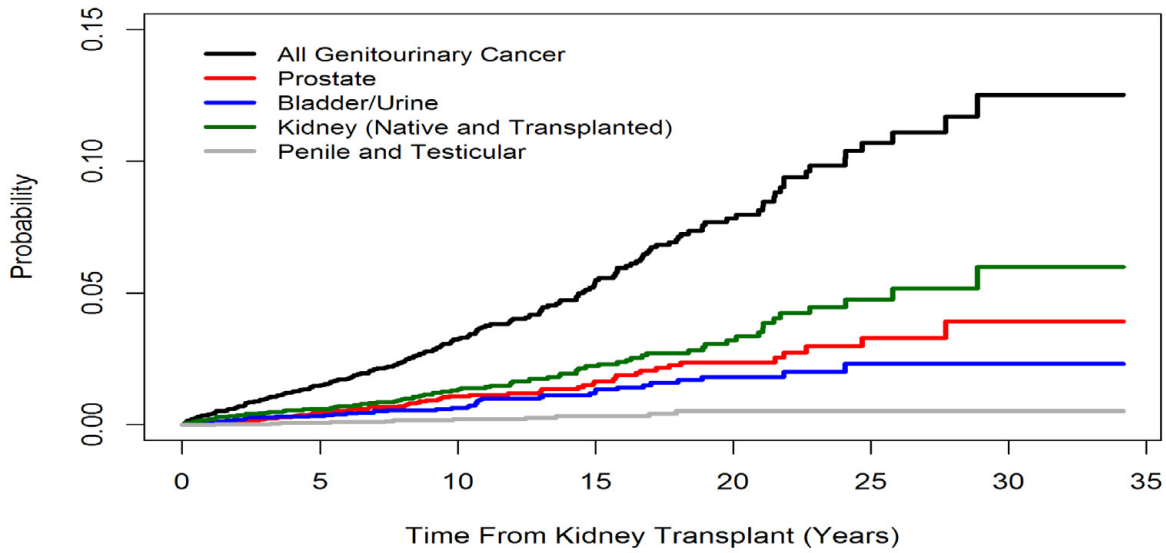
Bladder Cancer in Kidney Transplant Recipients: A Retrospective Study

El Kaddouri H[1], Doerfler A[2], Broeders N[1], Quackels T[1], Lemoine A[1], Nortier J[1], Roumeguère T[1]

MP-06.15, Table 1. Cumulative Incidence Estimates of Gu Malignancies Following Transplant (%)

	1 Year	5 Year	10 Year	15 Year	20 Year	25 Year	30 Year
All GU malignancy	0.39	1.48	3.23	5.42	7.83	10.70	12.51
Prostate	0.06	0.46	1.09	1.65	2.37	3.29	3.93
Bladder	0.12	0.34	0.64	1.26	1.82	2.31	2.31
Kidney	0.21	0.61	1.30	2.22	3.20	4.76	6.00
Penile/Testicular	0.00	0.07	0.21	0.33	0.53	0.53	0.53

MP-06.15, Figure 1. Cumulative Incidence og GU Cancer, Overall and by type



[1]Hôpital Erasme, Anderlecht, Belgium; Université Libre de Bruxelles, Brussels, Belgium; [2]Université Libre de Bruxelles - CHU Brugmann, Brussels, Belgium

Introduction and Objective: Kidney transplantation (KT) is the best treatment for end stage renal disease. The association between malignancies and immunosuppression in KT is well recognized. The aim of this study was to analyze the incidence, treatments and outcomes of bladder cancer (BC) in kidney transplant recipients (KTR).

Materials and Methods: We conducted a retrospective analysis of all KTR in our institution between January 1993 and December 2018. We analyzed patient's demographic characteristics, past medical history including the initial nephropathy, and bladder cancer's treatments with outcomes.

Results: During this period, 1720 KT were performed in 1586 patients and 27 patients (1.7%) were diagnosed with a BC. The mean delay between KT and diagnosis of BC was 8.9 years. Fifteen patients (55%) had been previously exposed to aristolochic acids and 7 were smokers. BC was non-muscle invasive (NMIBC) in 17 patients (63%), muscle invasive in 10 cases (37%) and metastatic in 4 cases (14.8%). All cases have been managed in accordance with current urological guidelines after transurethral bladder resection. In NMIBC patients, 6 relapsed after mitomycin C and were successfully treated with BCG. Immunosuppression doses were adjusted, and prophylactic anti-tuberculous treatment given to reduce risks of graft rejection and infection. One patient underwent a radical cystectomy for local recurrence and non-eligibility for BCG-therapy. Overall mortality of muscle-invasive and metastatic disease was high with 85% mortality rate.

Conclusion: In our series, BC incidence is high in recipients for end-stage aristolochic acid nephropathy. Management of BC in KTR is similar to the non-transplanted population. Under standardized conditions, immunotherapy based on intravesical BCG is feasible, effective, and well tolerated in renal transplantation. A close follow-up of KTR suffering from a Chinese herbs nephropathy is mandatory to avoid progression as prognosis of muscle invasive BC remains very poor.

MP-06.17

Urological Malignancies in Kidney Transplant Recipients: A Retrospective Study

El Kaddouri H[1], Doerfler A[2], Broeders N[1], Quackels T[1], Lemoine A[1], Nortier J[1], Roumeguère T[1]

[1]Hôpital Erasme, Anderlecht, Belgium; Université Libre de Bruxelles, Brussels, Belgium; [2]Université Libre de Bruxelles - CHU Brugmann, Brussels, Belgium

Introduction and Objective: Kidney transplantation (KT) is the optimal treatment for end stage renal disease. The association between malignancies and immunosuppression (IS) in KT is well recognized. The aim of this study was to analyze the incidence, treatments and outcomes of urological malignancies in kidney transplant recipients (KTR).

Materials and Methods: We conducted a retrospective analysis of all KTR in our institution between January 1993 and December 2018. We analyzed patient's demographic characteristics, past medical history including the initial nephropathy, and all diagnosed urological malignancies with treatments and outcomes.

Results: During this period, 1720 KT were performed in 1586 patients and 62 urological malignancies were diagnosed in KTR. The most frequent were 38 urothelial malignancies (27 bladder cancers including NMIBC and MIBC and 11 upper tract urothelial carcinomas) –related to the large number of recipients for end-stage aristolochic acid nephropathy – followed by native kidney cancers (14 patients), prostate cancers (9 patients) and testicular cancer (1 patient). No graft cancer was reported. The majority of the malignancies were diagnosed at a localized stage and could be treated with a curative intent, in accordance with current oncological guidelines. Modification of IS was not always mandatory and no graft-nephrectomy was performed.

Conclusion: Urological malignancies are frequent in KTR. The high incidence of urothelial malignancies is correlated with the large number of patients suffering from a "Chinese herbs" nephropathy in this series. The management of urological malignancies in KTR and in non-transplanted population is similar.

MP-06.18

Comparison of Outcomes Between Open and Robot Assisted Kidney Transplant in Paediatric Population-Initial Results

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Introduction and Objective: Robotic Assisted Kidney Transplant (RAKT) is being increasingly utilized in adult patients. Its application in paediatric population is still evolving. Equipment size, learning curve and small working space are major issues. Herein, we compared outcomes of children who underwent RAKT with open kidney transplant (OKT) at our centre.

Materials and Methods: Five children (M:3, F:2) aged between 7-16 years underwent RAKT and 14 (M:8, F:6) aged between 11-17 years underwent OKT between April 2016 to March 2019. Grafts were laparoscopically harvested from adult donors. Kidney was introduced inside the peritoneal cavity through Pfannenstiel incision in three child and Gelpoint® in two. Anastomosis was performed with common iliac vessels (end to side) in all the three cases of RAKT while in open cases depending upon the size of children, anastomosis was done with common, internal or external iliac vessels. Modified Lich-Gregoirureteroneocystotomy was performed in all cases over DJ stent.

Results: Patient demography, operative characteristics, mean operative time, warm ischemia time, duration of hospital stay and Serum creatinine at one week, one month and three months were comparable

between the two groups. Mean operative time was longer in RAKT but was not statistically significant. Diuresis was immediate in all patients. Mean estimated blood loss (EBL), need for analgesia, length of scar and incidence of wound infection significantly favoured RAKT.

Conclusion: Well performed RAKT is technically feasible and safe in children with similar functional outcomes. RAKT is cosmetically superior than open procedure especially in girls. More cases of RAKT are required to established better comparative results.

Moderated ePosters Session 7 Minimally Invasive Surgery

Saturday, October 19, 2019
1400–1530

MP-07.01

Are Bulking Agents Effective in Neurogenic Vesicoureteric Reflux (VUR) in Spinal Cord Injury (SCI) Population? A Retrospective Analysis on Macroplastique Efficacy

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Introduction and Objective: VUR is a known complication of neurogenic lower urinary tract dysfunction which results in progressive renal deterioration and renal failure. Bulking agents are an efficacious minimally invasive mode of treatment. The aim of this study is to assess the efficacy of macroplastique bulking agent in managing VUR in SCI population and correlate the pre-and post-injection urodynamic findings with the outcome.

Materials and methods: We included SCI patients who underwent subureteric macroplastoque injection for VUR between 2007 and 2015. All patients had preoperative video-urodynamics (VUDS) and follow up at 3 months postoperatively. The primary endpoint was the overall treatment rate of VUR at 3 months. Secondary outcomes were the success rate (treated+improved) and the comparison of urodynamic parameters. The t-test was used for the intra-group variability and the non-parametric Mann-Whitney test to assess the variability between the two groups.

Results: 74 SCI patients had undergone unilateral or bilateral macroplastique procedure. Results were available for 48 patients and 62 refluxing ureters. The mean age at operation was 48.3 years (SD:15.4, range:20-71 years) while the median time from VUR diagnosis since injury was 13 months (SD:91.8, range:2-398). There were 20 quadriplegics and 28 paraplegics. Mean follow up was 56.2 months. The overall treatment rate was 79.1% and the overall success rate was 90.3%. 7 (11.3%) units improved and downgraded, while 6 (9.7%) failed. Those who downgraded or failed had a second injection or underwent ileocystoplasty. The comparison of baseline urodynamic parameters between the two groups (treated vs. failures), showed significant differences in cystometric capacity (p= 0.047), bladder compliance (p=0.023) and degree of reflux(p<0.01) in favor of the treated group. Detrusor overactivity was more common in failures group as compared to the treated group (92.3% vs. 73.5%). There were no immediate postoperative complications, but there was 1/62 ureteric obstruction that required temporary stenting.

Conclusion: Macroplastique is effective in the management of neurogenic VUR. It is a quick procedure, with low complications and high-resolution rate. Care should be taken through to treat the parameters of the neurogenic bladder that contributes to secondary VUR development like detrusor overactivity and poor bladder compliance.

MP-07.02

Comparison of the Effect on Quality of Life Between Standard Tubeless PCNL and Mini Tubeless PCNL by Using the Wisconsin Stone QOL Questionnaire

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Introduction and Objective: We wanted to compare the effect on quality of life of patients between standard size tubeless percutaneous nephrolithotomy (PCNL) and Mini tubeless PCNL at one week and 1 month after discharge using Wisconsin Stone Quality of Life questionnaire (WISQOL).

Materials and Methods: From April 2018 to August 2018, total of 80 patients were enrolled in this study having stone size between 15 mm to 30 mm and sterile urinary culture tests, having no cardio, pulmonary and coagulation abnormalities. They underwent PCNL and were randomized into 2 groups: 1. Standard size tubeless PCNL group, N=40 (tract size 24-26 Fr), 2. Tubeless Mini PCNL, N=40 (tract size 16.5-17.5 Fr). We assessed for the quality of life differences between these groups week before the procedure and at 1 week and 1month after surgery using WISQOL.

Results: No significant differences were present between the mean age (yrs.) (38.35±11.57 vs 39.14±12.62, P=0.51), stone size (mm) (26.50±9.28 vs 24.36±8.45, P=0.59), stone-free rate (37/40 vs 36/40, P=0.61), mean drop in hemoglobin (g/L) (11.14±2.84 vs 12.43±1.81, P=0.67) and mean dosage of analgesics (opioids intravenous Nalbuphine) (3.6±1.125vs 3.3±1.34, P=0.19). Operative time was longer in Mini PCNL group (115 min vs 133 min p=0.03). Assessment of changes in Quality of life using the WISQOL questionnaire showed significantly better result in tubeless mini PCNL at discharge group in energy, sleep, work and social, physical symptoms, and the general emotional well-being.

Conclusion: Tubeless Mini PCNL is comparable to standard size tubeless PCNL in terms of success rates and complications. Quality of life is better in Mini tubeless PCNL so it should be promoted in centers not doing it at moment with mentorship programs.

MP-07.03

Comparison of Robot-Assisted and Laparoscopic Partial Nephrectomy for Completely Endophytic Renal Tumors: A Single Center Experience

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Introduction and Objective: To compare the perioperative, functional and oncological outcomes of robot-assisted partial nephrectomy (RAPN) and laparoscopic partial nephrectomy (LPN) for completely endophytic renal tumors.

Materials and Methods: After reviewed patients who underwent either RAPN or LPN between 2013 and 2016, 61 RAPN and 51 LPN cases for completely endophytic renal tumors were included. Baseline characteristics, perioperative, functional, and oncological outcomes were compared. Outcome also included pentafecta achievement [negative margin, no 30-day complication, ischemia time <= 25 min, return of glomerular filtration rate (eGFR) to >90% from baseline, and no chronic kidney disease upstaging]. Univariable and multivariable analyses were performed to determine the independent variables associated with pentafecta achievement.

Results: Compared to LPN, the RAPN were performed more recently (p < 0.001). No significant differences between RAPN and LPN were noted for operating time (105 vs. 108 min, p= 0.916), estimated blood loss (50 vs. 50 ml, p= 0.130), renal artery clamping time (20 vs. 20 min, p= 0.695), rate of positive margins (3.3 vs. 2.0%, p= 1.000), postoperative complication rates (Grade I-V, 18.0 vs. 21.6%, p= 0.639; Grade I- II, 14.8 vs. 21.6%, p= 0.348; Grade III-V, 3.3 vs. 0.0%, p= 0.500), postoperative hospital stay (6 vs. 6 days, p= 0.114). RAPN was associated with a higher direct cost ($11240 vs $5053, p <0.001). There were no statistically significant differences in pathologic variables. Also, there was no difference in rate of eGFR decline between groups for postoperative 1-day (RAPN 13.6 vs. LPN 22.4%, p= 0.244) and 12-month (RAPN 9.8 vs. LPN 10.6%, p= 0.901). During the follow-up, no local recurrences and distant metastasis occurred in both two groups. Pentafecta rates were not significantly different (RAPN 42.6 vs. LPN 37.3%, p= 0.564). Multivariate analysis identified that only RENAL score (OR 0.684, 95% CI 0.492-0.952, p= 0.024) was independently associated with the pentafecta achievement.

Conclusion: For completely endophytic renal tumors, both RAPN and LPN have excellent and similar results in terms of perioperative, functional and oncological outcomes. Selection of surgery should depend on surgeon experience and comfort with either approach.

MP-07.04

Evaluation of Three-Dimensional Printing Assisted Laparoscopic Cryoablation of Renal tumors: A Preliminary Report

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Introduction and Objective: This study aimed to explore the security and feasibility of three-dimensional(3D) printing technology assisted laparoscopic cryoablation to treat renal tumors.

Materials and Methods: 8 patients recruited from April 2016 to August 2017 in our hospital underwent this operation. Three-dimensional reconstruction technology was used to mimic cryoablation treatment before operations in terms of how many needles this process needed and the depth and angle required to insert the needles into the tumor to precisely reserve nephrons. CT scan was used to assess the effect of the treatment after operation in regular follow-up.

Results: All cases were performed in this operation successfully and recovered without major complications. The mean operation time was 111 minutes; the

mean blood loss was 66.7mL; the mean post-operation serum creatinine was 76.5 umol/L. The follow-up time was between 16-8 months, and the mean time was 13.3 months. Follow-up survey was conducted regularly based on a standard protocol in outpatient. The results showed no abnormal reinforcing signals in cryoablation treated areas.

Conclusion: 3D printing technology assisted laparoscopic cryoablation is a feasible method to treat renal tumors, which may be a better way to preserve nephrons, especially for those elderly and/or comorbid patients.

MP-07.05

Flexible Ureteroscopy is Not a "Perfect" Minimally Invasive Endoscopic Therapy – Complications After 3,000 Cases

Geavlete P, Multescu R, Georgescu D, Ene C, Balan G, Bulai C, Geavlete B

Saint John Emergency Clinical Hospital, Bucharest, Romania

Introduction and Objective: Nowadays flexible ureteroscopy became a routine procedure utilized all-around of the world. The aim of this study was to evaluate the indications, limits and efficacy of flexible ureteroscopy on a significant number of cases and on a long follow-up period.

Materials and Methods: Between January 2003 – January 2018, 3000 diagnosis and treatment retrograde flexible ureteroscopic procedures were performed in Saint John Emergency Clinical Hospital. We retrospectively reviewed the indications, endoscopes' types, procedural efficacity and complications rates.

Results: A fiberoptic first generation Storz flexible ureteroscope was used in 470 cases, a digital Flex-Xc in 691 cases, a fiberoptic Wolf Cobra in 68 cases, a digital Olympus URF-V in 473 cases and an Olympus URF-V2 in 1303 cases. 10% of the procedures were diagnostic, 3.2% therapeutic for upper urinary tract tumors and 86.8% for pyelocaliceal lithiasis (associated or not with other patologies such as pyelocaliceal diverticulum or infundibulum stenosis). During the diagnostic procedures inspection of the entire upper urinary tract was possible in 90% of the cases (2700 patients). Stone free rate in lithiasis cases was 93.3% after one procedure, 95.2% after the second and 97.3% after the third one. Complication rate was 20.5%, 17.6% Clavien I and II, 5.1% Clavien III, 0% Clavien IV and V.

Conclusion: Retrograde flexible ureteroscopic approach is an efficient diagnostic and treatment method for renal pathology. Also, the complication rate is relatively reduced, but a serious training is indicated before using this device.

MP-07.06

Different Morbidity Using Different Flexible Ureteroscopes – is it a Reality?

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Introduction and Objective: Nowadays, flexible ureteroscopy is associated with a reduced complications' rate, most of them being mild. The aim of this study is to evaluate the rate of complications stratified according to the model of the scope.

Materials and Methods: We retrospectively analyzed the morbidity associated with the flexible ureteroscopy in 240 cases of pyelocaliceal lithiasis (May 2018 – July 2018): Group I - 80 consecutive cases performed with Olympus URF-V (9.9 F), Group II - 80 consecutive cases with Storz Flex-Xc (8.5 F) and Group III - 80 consecutive cases with Olympus URF - V2 (8.5 F).

Results: Complications' rate was 21.3% in Group I, 18.8% in Group II and 20% in Group III. Clavien I and II complications occurred in 15%, 15% and 16.3% respectively. Clavien III complications occurred in 6.3%, 3.8% and 3.8% respectively. No Clavien IV and V were registered.

Conclusion: The increased tip diameter may be associated with a similar overall complications rate, but with a higher severity.

MP-07.07

Reduced-Port Laparoscopic Surgery of an Urachal Remnant; New Surgical Strategy for Umbilici Resection

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Introduction and Objective: Laparoscopic excision of urachal remnant usually needs three to five ports. Recently there have appeared new methods for resection of the urachal remnant by reduced port surgery (RPS). We had performed 13 RPSs and found that resecting the remnant in an antegrade way was sometimes stressful because proximal portion of the remnant was out of sight by camera port in the Lap-protector. We, therefore, developed retrograde approach for remnant resection. The antegrade procedure was followed; we first resected umbilici and urachal ligament as far as possible (2 cm approximately) and then inserted lap protector with 2 port channel into the umbilici defect. Then we resected umbilical ligament (UL) from proximal part towards bladder. This antegrade approach was stressful because dissection of the proximal part of the UL from the small wound of umbilici was physically challenging. We, thus, invented a new method for dissection of umbilical remnant: inserting multichannel port before dissecting umbilici from upper part of the umbilici, and then dissecting median UL and urachal remnant from distant part in a retrograde manner. This new method makes us easily dissect the urachal remnant. Here we describe this new method and compare its surgical result with antegrade approach.

Materials and Methods: We previously performed the retrograde approach for 2 patients. In all cases, we used reduced port surgery (multichannel port from the umbilici and a 2 mm forceps (ENDO Relief®). We compared these patients with 7 patients with the antegrade approach. We compared surgical time and complications between both approaches. We also share key points by some images or videos.

Results: The average surgical time was 121 min in antegrade approach, while 108 min in retrograde approach. No complications were found in these two approaches.

Conclusion: Retrograde approach with reduced ports demanded less surgical time than antegrade approach for dissecting the urachal remnant.

MP-07.08

Endoscopic Combined Intra Renal Surgery-ECIRS in Modified Supine Position by the "Athenian Version"

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Introduction and Objective: We present for the first time a modification of the Endoscopic Combined Intrarenal Surgery (ECIRS) technique "the Athenian version". It consists of a modified position of the patient which ensures combined easy access both lumbar and from the urethra.

Materials and Methods: 16 patients were treated with ECIRS from April 2017 to June 2018 in 2 centers for kidney stones with an average maximum diameter of 2,6 cm (1,8-3,1 cm). Their age ranged from 16 to 77 years and they had a BMI from 25 to 31 and an ASA score of 2-3. 9 of the cases were catheterized with a double j stent at least 10 days earlier. The Fiber optic STORZ Flex2s ureteroscope and the Flexible urethrocystoscope were used for the retrograde part of the operation. The STORZ and the Olympus nephroscopes were used with a maximum diameter of 26 Fr. The dilatation of the percutaneous access was achieved with Amplatz dilators with a maximum diameter of 28 Fr, while 10-12 Fr Rocamed ureteral access sheaths were used in the ureter. The corresponding side of the operation is risen by 30 degrees. The legs of the patient are in a straight position on the operating table unlike other modifications of the supine position. Access of the bladder and the ureteric orifice is achieved by the flexible cystoscope. A hydrophilic guide wire is inserted in the ureter. An access sheath is placed over the wire. Access of the pelvicalyceal system is achieved with the flexible ureteroscope.

Results: The average operative time was 2,2 hours (1,8-3,1 hrs). 1 patient was transfused with 1 blood unit and 2 patients presented with postoperative fever (Clavien I- II). In 13 patients a double j stent was placed intraoperatively. 1 patient needed a second ureteroscopy for residual lithiasis. All patients were stone free 3 months after the operation in abdominal ultrasound.

Conclusion: The ECIRS Athens modification is a safe and effective method of treating complex cases of renal stones. All patients in our center were stone free in the 3-month postoperative visit. 3 patients presented with complications which were treated conservatively.

MP-07.09

The Clinical Application of New Generation Super-Mini Percutaneous Nephrolithotomy (New-SMP) in the Treatment of ≥ 20 mm Renal Stone

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Introduction and Objective: To evaluate the safety and efficacy of new generation super-mini percutane-

ous nephrolithotomy (New-SMP) in the treatment of ≥20 mm renal stone.

Materials and Methods: We retrospectively analyzed the New-SMP procedures (14F) performed in the cases with ≥20 mm renal stone between April 1st, 2016 to July 1st, 2018. The cases with ipsilateral DJ stent and/or nephrostomy tube preoperatively, ipsilateral ureteric stone, uncorrected coagulopathy, active urinary tract infection, congenital abnormalities, urinary diversion were excluded.

Results: Of totally 188 included cases, 8 (4.3%) were children (≤14 yrs) and 180 (95.7%) were adults. The cases had a mean age of 47.14±15.13 years, a mean stone size of 31.57±9.8 mm and a mean S.T.O.N.E score of 7.02 ± 0.73. The New-SMP took a median operative time of 35 mins (range 6 to 127). 173 (92%) cases were received single-access-tract procedure. The hematocrit drop was 14.62 ± 8.36 g/L after the procedure. The increased serum white blood cell (WBC) was 2.58 ± 2.89*10^9 /L. The mean hospital stay was 2.4 ± 1.5 days. New-SMP had a stone-free rate (SFR) of 84% within 48h and 91.5% at 3 months postoperatively. 5 (2.7%) cases required auxiliary procedures. The tubeless rate was 87.2%, including 44.1% cases with total tubeless, 41.5% of cases with DJ stent and 1.6% cases with ureteral catheter. 9.6% of cases got fever (>38 °C), 1.0% of cases had urosepsis and no cases developed shock. Additionally, no transfusion and arterial embolization was required.

Conclusion: New-SMP could be a safe and efficacious approach for the management of ≥20 mm renal stone. The novel modified technique and system may extend the indication of SMP to large renal stones. Further clinical studies and direct comparisons between New-SMP and other available modalities of Percutaneous nephrolithotomy (PCNL) are required.

MP-07.10

Safe Entry in Per-Cutaneous Nephrolithetomy to Prevent Complications

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Introduction and Objective: We use the safest techniques and methods to prevent colonic, vascular and internal organ injury in PCNL in a single surgeon series.

Materials and Methods: Between July 2011 and February 2019, a total of 620 patients underwent a free hand ultrasound guided PCNL. Mean patient age was 39 years (range 2 to 85) and male to female ratio was 1.3: 1. In all patients we used only ultrasound to complete the procedure (zero radiation). A database was kept prospectively for all patients.

Results: Mean operative time was 79.1 minutes (range 15 to 300). Average stone size is 36.4 cubic mm (range 5 to 200). Patients with multiple stones are 71 and 549 with solitary stone. Patients with solitary kidney are 7, 1 pregnant patient, 1 transplanted kidney, 5 with endopyeletomy, 2 malrotated kidneys, 3 horseshoe kidneys, 2 pelvic kidneys, and 1 with percutaneous pyeloplasty. We did PCNL under general anesthesia in 498 patients, 87 under epidural anesthesia, 32 under spinal anesthesia and 3 patients under local anesthesia. Only 3 patients received blood transfusion 0.48% (500 to 1000 mL). One case failed entry due to hypermobile kidney. One percutaneous tract used in 514 patients (82.9%), 2 tracts in 71 patients (11.4%), 3 tracts in 27 patients (4.3%), 4 tracts in 6 patients (0.96%), 5 tracts in 1 patient (0.16%) and 6 tracts in 1 patient (0.19%). No colonic injury , no renal arterial-venous fistula, no urine fistula and no internal organ injury occur in this study because the use of Doppler ultrasound-guided PCNL with hydro dissection and optical-hydro dissection with induced hydronephrosis by ureter stent insertion with saline inflation of the bladder which leads to refluxing hydronephrosis that leads to easy pelvic collecting system needle penetration and tract formation, to prevent colonic and vascular injury with multiple positioning (prone, lateral, semi-lateral and supine).

Conclusion: PCNL carry some serious complications and need safest techniques to prevent these complications, use Doppler ultrasound instead of fluoroscopy, hydro dissection and optical hydro dissection with specific patient position; all are collective leads to decrease these complications.

MP-07.11

Oncological and Functional Outcomes of Robot-Assisted Radical Cystectomy: Is it Acceptable During the Learning Curve?

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Introduction and Objective: To evaluate the overall and segmental oncological and functional outcome of robot-assisted radical cystectomy (RARC) during the learning curve.

Materials and Methods: From August 2007 to November 2017, a total of 120 bladder cancer patients were treated with RARC at the Korea University Medical Center. These were divided into three groups of 40 cases. Overall and subgroup analysis of each group was used to evaluate oncological and functional outcomes throughout the learning curve.

Results: Among the 120 patients who underwent RARC, 42, 73 and 5 patients received extracorporeal urinary diversion (ECUD), intracorporeal urinary diversion (ICUD), and ureterocutaneostomy, respectively. There was a transition from ECUD to ICUD

MP-07.11, Table 1. Demographics and Oncological variables, overall and by patient series in chronological order of receipt of surgery.

	1–40	41–80	81–120	Total (n = 120)	P-value
Number of patients, *n*	**40**	**40**	**40**	**120**	
Age (year), mean ± SD	63.3 ± 9.8	65.7 ± 11.2	64.4 ± 11.6	64.5 ± 11.0	0.628 [c]
Sex					0.095 [a]
Male, *n* (%)	36 (90.0)	36 (90.0)	30 (75.0)	102 (85.0)	
Female, *n* (%)	4 (10.0)	4 (10.0)	10 (25.0)	18 (15.0)	
Body mass index, mean ± SD	24.8 ± 2.9	24.7 ± 3.0	23.7 ± 3.6	24.4 ± 3.2	0.325 [c]
Perioperative condition, *n* (%)					
Neoadjuvant chemotherapy	5 (12.5)	7 (17.5)	2 (5.0)	14 (11.7)	0.215 [b]
Adjuvant chemotherapy	0 (0.0)	4 (10.0)	8 (20.0)	12 (10.0)	0.050 [b]
Surgical Method					
ECUD cases, n (%)	34 (85.0)	7 (17.5)	1 (2.5)	42 (35.0)	0.000 [b]
ICUD cases, n (%)	3 (7.5)	31 (77.5)	39 (97.5)	73 (60.8)	0.000 [b]
Other, *n* (%)	3 (7.5) *	2 (5.0) *	0 (0.0)	5 (4.2)	
Pathologic T stage, N0, *n* (%)					0.301 [b]
T2 or less	30 (75.0)	26 (65.0)	20 (50.0)	76 (63.3)	
T3 or T4	6 (15.0)	4 (10.0)	8 (20.0)	18 (15.0)	
Lymph node positive, *n* (%)	4 (10.0)	10 (25.0)	12 (30.0)	26 (21.7)	0.525 [b]
T any, N1	1 (2.5)	5 (12.5)	5 (12.5)	11 (9.2)	
T any, N2	3 (7.5)	4 (10.0)	4 (10.0)	11 (9.2)	
T any, N3	0 (0.0)	1 (2.5)	3 (7.5)	4 (3.3)	
Positive Margin, *n* (%)	0 (0.0)	0 (0.0)	1*(2.5)	1* (0.8)	
LN yield, mean ± SD	22.6 ± 13.0	30.0 ± 13.2	34.4 ± 18.0	29.0 ± 15.6	0.002 [d]
Standard	12.5 ± 6.7	19.8 ± 8.5	20.0 ± 9.4	15.4 ± 8.2	0.060 [d]
Extended	30.1 ± 11.5	31.2 ± 13.2	37.9 ± 18.0	33.1 ± 14.9	0.115 [d]

[a] Independent t-test, [b] Chi-square test, [c] Fisher's exact test, [d] Analysis of covariance,
SD, standard deviation; LND, Lymph node dissection; LN, lymph node
*The final pathology report for the margin positive case was pT3aN0

MP-07.11, Table 2 Functional outcomes (urinary incontinence) in male patients (n = 37), overall and in patient series according to chronological order of receipt of surgery.

	1–40	41–80	81–120	Total (n = 120)	P-value
Neobladder, *n* of cases,	**15**	**13**	**9**	**37**	
Daytime continence, *n* (%)					
At 1 month	5 (33.3)	3 (23.1)	4 (44.4)	12 (32.4)	0.164c
At 3 months	8 (53.3)	9 (69.2)	6 (66.7)	23 (62.1)	0.653c
At 6 months	8 (53.3)	10 (76.9)	7 (77.8)	25 (67.6)	0.431c
At 12 months	11 (73.3)	10 (76.9)	7 (77.8)	28 (75.7)	0.211c
Nighttime continence					
At 1 month	2 (13.3)	2 (15.4)	3 (33.3)	7 (18.9)	0.111c
At 3 months	4 (26.7)	4 (30.8)	5 (55.6)	13 (35.1)	0.373c
At 6 months	5 (33.3)	5 (38.5)	5 (45.5)	15 (40.5)	0.631b
At 12 months	7 (46.7)	6 (46.2)	6 (66.7)	19 (51.3)	0.644c
CIC rate (%)	5 (33.3)	2 (15.4)	0 (0.0)	7 (18.9)	0.038c
Vesico-urethral anastomosis site stricture rate, n (%)	5 (33.3)	1 (7.7)	0 (0.0)	6 (16.2)	0.031 c

aIndependent t-test, bChi-square test, cFisher's exact test

during the learning curve. The positive surgical margin rate was 0.8%. The mean lymph node yield for the standard and extended pelvic lymph node dissection (PLND) was 12.5 and 30.1, respectively, and increased to 19.8 and 31.2 and further to 20.0 and 37.9, respectively, with each additional series of 40 cases. The 5-year overall survival and 3-year recurrence-free survival rates were 86.6% and 81.4%, respectively. The 1-year daytime continence rate was 78.4%, while the nighttime continence rate was 51.4%. The potency preservation rate was 66.7% (n= 8) with or without PDE5-I at 1 year and 33.3% without PDE5-I (n= 4).

Conclusion: RARC results in comparable oncological and functional outcomes to open radical cystectomy. In addition, the oncological and functional outcomes were well maintained throughout the learning curve. ECUD transition to ICUD was safe and did not compromise oncological or functional outcome.

MP-07.12

Safety of Perioperative Continuation of Antithrombotic Therapy in Robot-Assisted Radical Prostatectomy: A Prospective Clinical Trial at Single-Institution

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Introduction and Objective: To assess the impact on bleeding and complications due to the perioperative continuation of antithrombotic agents during undergoing robot-assisted radical prostatectomy (RARP), we prospectively investigated surgical outcomes of patients whose are all continuing antithrombotic therapies.

Materials and Methods: From January 2014 to September 2018, a total of 445 patients who underwent RARP with prostate cancer were included in this prospective clinical trial. All patients continued taking antithrombotic agents in overall perioperative phase. We evaluated outcomes including intraoperative blood loss, transfusion rate, and bleeding complications in patients with continuous administration of antithrombotic agents (AA group: n= 65) and compared with patients without history of taking antithrombotic agents (NA group: n= 380). Multivariable analysis was used to identify independent risk factors for increased bleeding.

Results: Among patients in AA group, 53 (82%) patients used antiplatelet (aspirin: 45, clopidogrel: 6, others: 4, combination: 2), 16 patients (24%) used anticoagulant (warfarin: 10, dabigatran etexilate: 2, others: 4), and 4 patients used both of them (aspirin + warfarin). As comparison of both group patients (AA vs NA group; median (min-max)), patients in AA group were older (72 (51-79) vs 68 (45-82) years, $p < 0.0001$) and had more severe comorbidity (charlson-comorbidity index; 2 (0-8) vs 2 (0-5), $p < 0.0001$) than NA group. Nevertheless, there was no significant difference between both groups in intraoperative blood loss (200 (0-1338) vs 189 (0-2055) mL, p= 0.63), hemoglobin deficit (2.3 (0.6-4,7) vs 2.2 (0.2-6.4) mg/dL, p= 0.61), rate of intraoperative transfusion (0 vs 0.3%, p= 0.85), and rate of any high-grade complications (Clavien-Dindo Grade III; 4.6 vs 1.8%, p= 0.17). There was no patient who needed secondary procedure for postoperative hemorrhage in both groups. In multivatiate logistic regression analysis, predictors of intraoperative bleeding > 400 mL (upper 75% tile of overall patients) were charlson-comorbidity index 3 (OR= 3.0, IC95%: 1.4-6.2, p= 0.0037), BMI 25 (OR= 2.4, IC95%: 1.5-3.9, p= 0.0003), and not expert surgeon (OR= 2.2, IC95%: 1.2-4.0, p= 0.0093). The history of continuing antithrombotic therapies (OR= 0.9, IC95%: 0.5-2.0, p= 0.89) was not a significant risk factor of high-volume bleeding.

Conclusion: These results indicate that perioperative continuing use of antithrombotic agents is not a factor of increased bleeding, and considered safe in RARP. Therefore, patients who have a risk of fatal thromboembolism should continue administrating their antithrombotic therapies during perioperative phase in RARP.

MP-07.13

Robotic Nephrectomy with Inferior Vena Cava Tumor Thrombectomy: Experiences from 101 Consecutive Cases in a Single Center

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Introduction and Objective: Robotic surgery has been increasingly applied in the management of renal tumors with inferior vena cava (IVC) thrombi. However, only anecdotal reports and small case series were published with short-term outcome. We report the largest single center series to date with regard to perioperative results, pathological outcomes and surgical complications.

Materials and Methods: A total of 101 consecutive patients (69 male and 32 female) with level I- IV IVC tumor thrombus undergone robotic nephrectomy with IVC tumor thrombectomy from May 2013 to June 2018 were retrospectively analyzed. Level 0 thrombi (renal vein only) was excluded from the study. Data of patient demographics, perioperative results, complication rate, pathological and oncologic outcomes were collected.

Results: The IVC tumor thrombus originated from the renal, adrenal and retroperitoneal malignancy were 96, 2 and 3 cases, respectively. Fifteen were level I, sixty-nine were level II, nine were level III, and eight were level IV thrombi. Mean patient age was 55yrs (21-86yrs) with mean BMI of 24.4kg/m^2(13.2-33.7kg/m^2) and mean maximal tumor diameter of 7.7cm (2-21cm). The mean length of IVC tumor thrombi was 5.7cm (1-14.2cm). There were 6 and 13 cases with preoperative lymph node and distant metastasis, respectively. Mean operative time was 266min (76-723min) with blood loss of 1152ml (50-12000ml). There were no conversions to open surgery. Mean postoperative hospital stay was 9d (1-32d). On surgical pathology, eight cases were pT4, eighteen cases were pT3C and seventy-five cases were pT3B. No positive surgical margin was reported. At a mean follow up of 16 months 25 patients had disease progression and 12 died of disease.

Conclusion: We report a relatively large experience of robotic nephrectomy with IVC tumor thrombectomy. This technique was feasible for selected patients with acceptable surgical and pathological outcomes. Efforts should be continually paid to further refine the minimally invasive surgical management of such high-risk procedure.

MP-07.14

Functional Outcomes Post Holmium Laser Enucleation of the Prostate (Holep) for Patients with Huge Prostates (<150cc)

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Introduction and Objective: Holmium laser enucleation of the prostate (HoLEP) is recommended for patients with benign prostatic hyperplasia with large prostates. The aim of the study was to assess the functional outcomes in men undergoing HoLEP with huge prostates (>150cc) and compare these two men with smaller prostates (<150cc).

Materials and Methods: We retrospectively evaluated all patients undergoing HoLEP in a UK single tertiary hospital between August 2017 and December 2018. Data on pre-operative and post-operative International Prostate Symptom Score (IPSS), peak urinary flow rate (Qmax), post void residual (PVR) and prostate specific antigen (PSA) was evaluated for patients with huge prostates and compared to those with smaller prostates.

Results: In total, HoLEP was performed on 196 patients with a preoperatively measured prostate size of20-450cc.Of these patients, 62 had a huge prostate (>150cc) with a mean volume (measured by MP-MRI) of 193cc (range: 150-450cc). The mean total operative time was 109.8 mins (range: 30-225 mins) with a mean morcellated prostate volume of 126.5g (range: 60-270g). With regard to functional outcomes, patients with huge prostates undergoing HoLEP had significant improvements in IPSS (from 21.4 ± 9.3 to 7.9 ± 6.0), Qmax (from 10.0 ± 4.3mL/s to 34.9 ± 17.5mL/s), PVR (from 144 ± 117mL to 76 ± 60mL) and PSA (from 13.2 ± 11.1ng/mL to 4.9 ± 14.5ng/mL). Four patients (6.5%) with huge prostates had significant stress urinary incontinence following surgery at 3-6 months follow-up. These were all managed non-operatively with intensive physiotherapy. All patients were catheter-free following surgery.Comparison of IPSS, PSA, PVR and continence rates between patients with huge and smaller prostates showed no statistically significant differences. Qmax showed a greater improvement in the huge prostate group, which was significant (29.34mL/s vs 12.91mL/s; p=0.0235).

Conclusion: Our study shows that HoLEP is a safe and effective operation for treatment of BPH in patients with huge prostates (>150cc) with excellent functional outcomes and a low complication rate.

MP-07.15

Post-Radiotherapy Salvage Robotic Cystectomy: Our Experience at a Tertiary Care Center

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Introduction and Objective: Salvage cystectomy post pelvic irradiation (RT) is technically challenging and carries higher peri-operative morbidity and mortality. However, all previous literature is from open surgery era. We present our experience of robotic salvage cystectomy.

Materials and Methods: We retrospectively reviewed records of all patients who underwent salvage robotic cystectomy [whether anterior exenteration (Ant-Ex) or radical cystoprostatectomy (RCP)] post radiotherapy for either carcinoma cervix or carcinoma urinary bladder from 2011-2018. Peri-operative complications and post-operative oncological outcomes were analyzed.

Results: Thirty-five patients were indentified. RCP and Ant-Ex were performed in 17 and 18 patients respectively. Indication for surgery was recurrence and residual disease in 22 and 13 patients respectively. Mean operative time was 5 hours (+/-62 minutes) and blood loss was 362 ml (+/- 165 ml). 9 patients needed peri-operative blood transfusion. Urinary diversion was performed extra-corporeally in all. 1/3rd patients experienced complications however none experienced a Clavien-Dindo class IV or V event. 2 patients with ileal neobladder developed urinary leak, 4 patients developed abdominal wall dehiscence, 4 patients had prolonged paralytic ileus and 1 patient developed rectovaginal fistula (treated by repair of fistula and diversion colostomy). Median hospital stay was 7 days (inter quartile range 6-9 days). Only 4 (11%) patients had positive surgical margins on final histopathology all of which had pT3b or pT4 disease. Mean follow up duration was 19 (+/-18.97) months 24 (69%) patients were disease free on follow up. 6 (17%) patients had early recurrence (within < 6 months) while 4 (11.4%) patients had delayed recurrence.

Conclusion: Post-radiotherapy salvage robotic cystectomy is feasible with acceptable peri-operative and oncological outcomes.

MP-07.16

Preoperative Planning and Intraoperative Navigarion Based on 3D Modenling During Procedures in the Retroperitoneal Space

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Introduction and Objective: We used a medical 3D visualization computer program ("Volga-M", Russia) for a better understanding by the surgeon of the individual anatomy of the organs, allows for preoperative planning and helps with orientation in retroperitoneal space during the surgical procedure.

Materials and Methods: The surgeon studied the 3D model of the organ and performed the training removal of the tumor, discussed it with the patient before the operation. During the procedure, the virtual model was combined with the image of a real organ on an additional surgical monitor in a semi-automatic mode. The method of 3D modeling was performed on 65 patients with various diseases, preoperative planning and intraoperative navigation was applied in 21 patients, among them 9 patients with adrenal tumors underwent LA, the mean age was 42.4 (32-58), 4 men (44,4%) and 5 women (55,6%), size tumors 3,5 (2,8 - 5,1) cm and 12 patients with small renal tumors, who needed in surgical treatment LPN, mean age was 42,5 (36 - 54) years, men – 5 (41,7%), women - 7 (58,3%). Size of the tumors were 3,2 (2,0 – 4,0) cm.

Results: The average operation time LA performed using 3D modeling was 75.4 (40.0 - 95.5) minutes. The average operation time LPN performed using 3D modeling was 95,5 (80-155) minutes. Warm ischemia time was 20,5 (18 – 28) min. There were no cases of positive surgical margins. There were no complications during the operation and in the post-operative period.

Conclusion: The virtual modeling and preoperative planning helps the surgeon to better understand the patient's individual anatomy, perform the training procedure on the retroperitoneal organs and explain its features to the patient. Intraoperative navigation based on the combination of images of organs makes the procedure more secure. Further application of the method is required to evaluate its results.

MP-07.17

Silodosin for the Prevention of Ureteral Injuries Resulting from Insertion of a Ureteral Access Sheath: Prospective Study

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Introduction and Objective: To evaluate the preventive effect of silodosin on ureteral injury resulting from insertion of a ureteral access sheath during retrograde intrarenal surgery.

Materials and Methods: In this randomized controlled trial, 100 patients who underwent retrograde intrarenal surgery for kidney and upper ureter stone were prospectively enrolled from May 2018 to March 2019. The experimental groups received silodosin 8 mg for 7 days preoperatively. Ureteral injuries after insertion of 11-13Fr UAS were assessed with endoscopic classification. The primary outcome was rate and severity of ureteral injury. The second outcomes were surgical outcomes, such as the stone-free rate, complications, and pain score.

Results: Of the patients, 44 and 43 were randomly assigned to the control and experimental groups, respectively. Silodosin prevented from severe ureteral injury involving the smooth muscle layer than control group (16.3% vs. 38.6%; p= 0.018). There are no significant difference in overall complication (p= 0.626) followed by modified Clavien classification system and computed tomography scan stone-free rate (76.7% vs. 77.3%). Patient who received silodosin before the RIRS had lower pain score and less likely to seek medical assistance for pain the control group (14.0% vs. 38.6%; p= 0.008).

Conclusion: Our data suggest that preoperative silodosin medication prevent from severe ureteral injury related to insertion of UAS during the RIRS. Also, silodosin seems to decrease postoperative pain. Patients might be received for preoperative silodosin if they were not presented before retro-grade intrarenal surgery.

Moderated ePosters Session 8 Reconstruction/ Andrology

Saturday, October 19, 2019
1545–1700

MP-08.01

Organ Culture of Seminiferous Tubules Using a Modified Soft Agar Culture System

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Introduction and Objective: In-vitro spermatogenesis in mammalian species is considered an important topic in reproductive biology. New strategies for achieving a complete version of spermatogenesis ex vivo have been conducted using an organ culture method or culture of testicular cells in a three-dimensional soft agar culture system (SACS). The aim of this study was to develop a new method that supports spermatogenesis to the meiotic phase and morphologically mature spermatozoa through the culture of testicular cells and seminiferous tubules (STs) in a modified SACS, respectively.

Materials and Methods: First, enzymatically dissociated testicular cells and mechanically dissociated STs of neonatal mice were separately embedded in agarose and then placed on the flat surface of agarose gel half-soaked in the medium to continue culture with a gas-liquid interphase method.

Results: Following 40 days of culture, the meiotic (Scp3) and post-meiotic (Acr) gene expression in aggregates and STs was confirmed by real-time polymerase chain reaction. These results were complemented by immunohistochemistry. The presence of morphologically mature spermatozoa in the frozen sections of STs was demonstrated with hematoxylin and eosin staining. We observed Plzf- or Integrin α6-positive spermatogonia in both cultures after 40 days, indicating the potency of the culture system for both self-renewal and differentiation.

Conclusion: This technique can be used as a valuable approach for performing research on spermatogenesis and translating it into the human clinical setting.

MP-08.02

Post-Fertilization Effect of Paternal Exposure to Nicotine Treatment on Offspring Development in a Rat Model

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Introduction and Objective: Cigarette smoking has been proved to detrimentally affect the sperm motility, morphology as well as the sperm fertilizing capacity. We selected nicotine as major addictive substance of cigarette smoke and investigated the post-fertilization effects of paternal exposure to nicotine and its abstinence on the development of the offspring.

Materials and Methods: Adult male rats were treated with nicotine orally for 10 weeks (100 μg/ml, Nico group; n=20). Another group was treated with nicotine for 7 weeks (100μg/ml) followed by 3 weeks of abstinence (Abst group; n=20). Control group had free access to drinking water (n=20). Five days before completing the period of 10 weeks, mating studies were performed, and each male rat was placed in the same cage with two female rats. After the five days, female rats were placed in separate cages and the male rats were sacrificed. Oxidative stress (OS) was evaluated in the testis and epididymis. Additionally, immunohistochemistry (IHC) was performed in the epididymal cauda for OS markers. The development of the offspring was recorded at postnatal days 2, 3, 5, 14 and 28.

Results: Nicotine induced a significant increase in the levels of malondialdehyde (MDA) in the testis and epididymis of Nico group compared to Control or Abst group. IHC revealed increased expression of MDA, 4-hydroxynonenal and 8-oxo-2'-deoxyguanosine in the epididymal cauda of the Nico group compared to Control or Abst group. Pups delivered from female rats that mated with male rats from Nico group had significantly lower body weight at all recorded postnatal days compared to the Control. Three weeks of abstinence resulted in pups with significantly higher body weights compared to Nico group in all postnatal points recorded, but significantly lower compared to the Control.

Conclusion: Our data provide evidence that paternal exposure to nicotine results into high levels of OS in the testis and epididymis and finally affects negatively the body weight and development of the offspring. Therefore, it is a necessity to inform the male smokers who wish to become fathers, that their habit will have an impact on their child's development during the first stages of its life and encourage them to follow a cigarette cessation program.

MP-08.03

How and How Long to Follow-Up Patients After Bulbar Urethroplasty

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Introduction and Objective: Urethroplasty is the gold standard treatment for patients who have recurrent strictures after urethral dilatation or urethrotomy. Success is typically described in the literature as "no need for further intervention" but how and when that decision is made has never been described. This review of our prospective database aims to address those questions.

Materials and Methods: Complete follow-up is available for 297 patients who had a bulbar urethroplasty performed between January 2011 and December 2015. All patients were assessed by symptoms, a urinary flow rate study and an ascending urethrogram and micturating cystogram. All patients were followed-up for a minimum of 24 months and up to 82.5 months.

Results: Failure rates and timing of the various types of urethroplasty were as follows: 5 of 25 (20%) of transecting anastomotic bulbar urethroplasties at a mean of 12.6 (range 0.8-32.3) months postoperatively; 4 of 83 (4.8%) non-transecting anastomotic bulbar urethroplasties occurring at a mean of 9.37 (range 3.9-16) months postoperatively; 4 of 145 (2.8%) augmentation urethroplasties using oral mucosal grafts occurring at a mean of 11.6 (range 4.6-16.1) months. The overall failure rate of bulbar urethroplasty was 13 of 253 procedures (5.1%) occurring at a mean of 11.13 (range 0-32.3) months postoperatively.Failure was associated with symptoms, a reduced flow rate and a radiological stricture, all together, excepting a few elderly patients who had developed prostatic obstruction. It was not always possible to determine whether the patient had a recurrent stricture at the same site as the original stricture or a new stricture (usually more proximal).

Conclusion: By and large, recurrent strictures after bulbar urethroplasty tend to become apparent within the first year or so after surgery and symptoms of a reduced flowrate and a radiologically demonstrable stricture (and the presence of residual urine) all tend to be equally reliable. Invasive investigation is therefore not always necessary albeit useful if further treatment if planned. Indeed, outside of specialist academic reconstructive units, it is reasonable to simply tell patients who have had a bulbar urethroplasty to return for further assessment if they develop recurrent symptoms.

MP-08.04

Prospective Analysis of Functional Effects of Urethroplasty on Ejaculatory Function

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Introduction and Objective: Sexual morbidity has significant impact in determining overall satisfaction after urethral reconstructive surgery. A prospective study was undertaken with an objective to evaluate effects of urethroplasty on ejaculatory function using a validated questionnaire.

Materials and Methods: The study was conducted after obtaining institutional ethical approval and informed consent from participants. Adult men who underwent successful urethroplasty (Qmax > 15 mL/sec) for anterior urethral strictures between May 2017 and September 2018 were included. Demographic and clinical details were recorded. Additionally, the participants filled the 7-question Male Sexual Health Questionnaire -Ejaculatory function Domain (MSHQ-EjD) pre-operatively, at 3-6 months post surgery (first follow-up) and then at 12-months. Visual analogue scale (0: No Pain, 10: most Pain) was used to assess painful ejaculation.

Results: 60 men with mean age 31.36 ±11.99 were analysed. The stricture location was bulbar in 26, peno-bulbar in 22 and pan-anterior in 7 patients. The mean stricture length was 4.70 ±2.62 cm. The bulbospongiosus muscle was split if stricture involved

the bulbar urethra. Mean pre-operative MSHQ-EjD score was 18.43 ±7.36 while the same was 34.65 ±0.91 before onset of stricture symptoms. There was statistically significant improvement (p <0.05) in MSHQ-EjD after surgery both at first follow-up (32.69 ±4.27, n= 52) and at 12-months (33.81 ±2.62, n= 26) when compared to pre-operative scores. When compared to mean scores prior to development of urethral stricture (34.65 ±0.91), the scores at first follow-up were significantly lower (p <0.05) while at 12-months the ejaculatory function was restored to pre-disease levels. There was statistically significant improvement (p <0.05) in visual analogue scale for ejaculatory pain after surgery (pre-operative score: 6.29 ±3.52, at first follow-up: 0.62 ±1.94, at 12-months: 0.36 ±1.47).

Conclusion: The ejaculatory function is restored to pre-disease levels after successful urethroplasty. The most striking improvement is in the ejaculatory pain.

MP-08.05

Combined One Stage Urethroplasty for Coexisting Anterior Urethral Stricture and PFUDD

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Introduction and Objective: It is rare to see coexisting anterior urethral stricture and a posterior stricture due to pelvic fracture urethral distraction defect (PFUDD). This is a systematic demonstration of how to synchronously repair these two strictures of completely different aetiology and also make it affordable.

Materials and Methods: Three patients with age of 49, 24 and 51 presented with concomitant anterior stricture and PFUDD. In addition to PFUDD stricture, two patients had a penobulbar stricture and the third one had a proximal bulbar stricture. The first patient had a failed PFUDD repair in 2014. The urethrograms showed anterior urethral stricture and PFUDD stricture. At the synchronous single-stage repair proximal stricture at the prostato-membranous urethra was addressed first. It was localized with a soft catheter that could pass easily through the distal stricture but was blocked at the proximal stricture. The proximal urethra was dissected, transected and stricture was excised. Fibrous tissue around the proximal segment was excised till healthy, pink, mobile prostato-membranous urethra was well defined. The distal segment was trimmed and spatulated. A well-approximated end to end anastomosis between the two segments was then done with eight 4-0 vicryl sutures. The distal stricture was then localized with a bigger soft catheter. Two patients with penobulbar stricture underwent a dorsal onlay and the one with a proximal bulbar stricture underwent a ventral onlay BMG repair. A 14-F silicon catheter was placed.

Results: Urethrogram was done at 4 weeks. After confirming the absence of any extravasation catheter was removed. Out of the three patients, one with a long anterior stricture required calibration at 3 months. The other two patients had an uneventful recovery and were voiding well at 15 and 17 months respectively. As both the surgeries were combined together overall expenditure was substantially low.

Conclusion: Concomitant presentation of anterior urethral stricture along with PFUDD is rare. It is feasible to repair both as a single stage. PFUDD repair should be done first followed by anterior urethroplasty. A combined approach to repair two strictures of different aetiology and different location, simultaneously makes this technique most suitable and affordable.

MP-08.06

Outcomes of Penile Fasciocutaneous Island Flap in One Stage Reconstruction of Complex Anterior Urethral Strictures in the Komfo Anokye Teaching Hospital, Kumasi-Ghana

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Introduction and Objective: In developing countries, the problem of complex anterior urethral strictures presents a major challenge to the urologist. The causes include poor quality catheters and poorly managed STI's. Staged urethroplasty for long and multiple anterior strictures may be fraught with infections between the stages that may impact the outcome. To evaluate the stricture characteristics of patients undergoing one stage penile fasciocutaneous island flap ventral onlay urethroplasty and the outcomes of the surgery in Kumasi, Ghana.

Materials and Methods: Between December 2011 and December 2018, a total of 47 penile fasciocutaneous island flap ventral onlay urethroplasties were performed for long and multiple partial anterior urethral strictures by one surgeon at the Komfo Anokye Teaching Hospital. The distal penile circular fasciocutaneous flap was mostly used in this study. A database which included patient's age, aetiology, location, length and number of strictures as well as the duration of surgery and follow up, post-operative complications and final outcome of repair were kept prospectively for all 47 patients. Patients were reviewed at 3, 6, 12 months postoperatively and yearly thereafter. Data were entered into SPSS 17.0 for statistical analysis.

Results: Forty-seven patients met the criteria for the study over the period. The mean age was 45.3 years with a mean stricture length of 6.3 cm (1-15 cm) with a mean follow up period of 46.6 months (6-96 months). Twenty-nine (61.7%) had 2 or more strictures. There were more patients with strictures involving both the penile and bulbar urethra than either location alone 25 (53.2%). Catheterization was responsible for 76.6% of the causes of these strictures with urethritis accounting for 19.1%. Complications included SSI in 6, urethrocutaneous fistula in 2, urethral diverticulum in 2 and one patient had both penile shortening and chordee which required correction at a later date. The overall success rate at first surgery was 85.1%. This rose to 93.6% after secondary repairs in 4 out of 7 patients whose repair failed at first attempt.

Conclusion: Single stage penile fasciocutaneous ventral onlay flap urethroplasty for long and multiple partial anterior urethral strictures is a versatile technique with a good medium to long term outcomes even in resource poor countries.

MP-08.07

Modified Transurethral Resection of the Prostate for the Management of Refractory Symptomatic Benign Prostatic Hyperplasia in Patients with Previous Pelvic Fracture Urethral Injury Reconstruction

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Introduction and Objective: Management of lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia (BPH) poses a unique challenge in patients with a history pelvic fracture urethral injury (PFUI) reconstruction. Patients who are refractory to medical therapy may require a surgical intervention; however, experts recommend against performing a transurethral resection of the prostate (TURP), as these patients often have a compromised external sphincter and rely on their internal sphincter at the bladder neck for continence. We seek to evaluate the utility and efficacy of a modified TURP in patients with a history of PFUI reconstruction who have failed medical therapy.

MP-08.07, Table 1. Patient Voiding Parameters

Voiding Parameters	1	2	3	4	5
Pre-surgical PVR (mL)	120	160	150	400	30
Post-surgical PVR (mL)	0	30	5	40	58
Pre-surgical IPSS	18	26	26	29	19
Post-surgical IPSS	2	8	6α	9	13
Pre-surgical Qmax (mL/sec)	15	8	6	0§	9.6
Post-surgical Qmax (mL/sec)	25	10.7	15	11.2	22

α Value derived from ROS from patient note
§ Patient presented in retention
Q-max – Maximal flow on uroflowmetry
PVR – Post-void residual
IPSS – International prostate symptom score

MP-08.07, Table 2. Pre-post Operative Changes in Voiding Parameters *

Variable	Pre- Operative	Post Operative	p value
Post Void Residual (mean±SD) ml	172 ± 137.36	26.6 ± 24.44	0.039
IPSS (mean ±SD)	23.6 ± 4.82	7.6 ± 4.30	0.002
Qmax (mL/sec) (mean±SD)	8.92 ± 3.71	16.78 ± 6.44	0.99
Paired t-test			

Materials and Methods: Five patients were identified with a history of PFUI and a successful reconstruction of the urethra, who developed severe LUTS. After maximal medical therapy failed, these patients underwent a modified TURP, resecting only one lobe and preserving the circular fibers at the bladder neck. Their voiding parameters were recorded before and after surgery.

Results: Significant improvements in both the post void residual (172±137.36) vs (26.6±24.44), p=0.026, and the International Prostatic Symptom Score (23.6±4.82) vs (7.6±4.30), p=0.002 were observed (**Tables 1 and 2**). Although the maximum flow rate was not statistically significant, there was an overall improvement in Qmax in all patients (8.92 ± 3.71 vs 16.78 ± 6.44). All patients remained continent after this modified intervention.

Conclusion: Our modified TURP provides an efficient option in the management of LUTS secondary to BPH in patients with a history of PFUI reconstruction, relieving symptoms and preserving continence.

MP-08.08

How We Predict the Need for Inferior Pubectomy in Pelvic Fracture Urethral Injuries

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Introduction and Objective: Elaborated perineal approach is merited in patients with long gap for anastomotic urethroplasty after PFUDD. There is paucity of literature to predict the need for inferior pubectomy in patients with PFUDD. The only available suggestion is by Koratiam who described the bulbourethral index, by measuring the length of bulbar urethra and the length of the gap. We share out experience in predicting the need for pubectomy.

Materials and Methods: This manuscript is based on the experience of more than 1307 cases of PFUDD done over 2 decades. This includes various Live urethroplasty workshop done across 30 countries in the world. Most important factor is to have a good retrograde urethrogram and micturating cystourethrogram. The angle at which the patients is positioned in the Urethrogram is very important to understand the anatomy. Some patients in our experience with complex urethral issues will need MRI as imaging. We have modified our protocol with full bladder (which acts as natural contrast) and injecting lignocaine jelly in urethra. We study the relationship of the inferior margin of pubic bone to the lower margin of posterior urethra. In complex cases we have performed 3 d printing using CT Images of Urethrogram and this is a very useful tool.

Results: Based on conventional imaging it is possible to predict the need for pubectomy. However, there are lot of fallacies as the imaging is 2 dimensional. Koratim's bulbo urethral index is based on the length of gap. However truly, the gap can be small but posterior urethra if above and behind the pubic bone, the patient will still need pubectomy. So Koratim's index is not universally true. The only factor which predicts the need for pubectomy is the relationship of posterior urethra to the inferior margin of pubic bone. This can be achieved by MRI using our modified technique and we suggest use of 3 D printing model as an educational tool

Conclusion: The relationship of posterior urethra to pubic bone decides the need for pubectomy which most accurately can be predicted by MRI which is a 3-Dimensional imaging.3 D printing is the new technology on the cards.

MP-08.09

Long-Term Results of Intestinal Ureteral Substitution

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Introduction and Objective: Implementation of new surgical approaches, including endourologic and laparoscopic, leads to increase in number of iatrogenic ureteral injuries. From the other side there are different ureteral diseases for which a reconstructive procedure is necessary, because of reasons like fibrosis, stenosis or even tumor and an ileal ureteric replacement is used as the last resort in complex reconstruction of the urinary tract.The aim of the study is to review indications, improve surgical technique and evaluate the results in patients who underwent different variants of intestinal plasty of the ureter.

Materials and Methods: Retrospective analysis of 178 patients that were surgically treated from 1982 to 2018 with intestinal plastics of the ureter. Mean age was 56,5 ± 8,2 years. All patients underwent complex investigation prior to surgery. Patients follow up ranged from 6 months to 26 years.

Results: Indications to bowel substitution of the ureter were: 58 (32,6 %) – traumatic ureteral injuries; 109 (61,2 %) – cases of retroperitoneal fibrosis (radiation, idiopathic); 8 (4,5 %) – patients had ureteral cancer; 3 (1,7 %) – ureteral obstruction due to tuberculosis. 29 (16,3 %) patients underwent segmental ureteral plastics, 39 (21,9 %) – subtotal, 57 (32 %) – total, 53 (29,8 %) – bilateral ureteral substitution. Substitution of one or both ureters was performed with isoperistaltic graft. Ileo-vesical anastomoses were formed with antireflux mechanisms: in 109 (61,2 %) patients distal part of ileum was everted forming an intravesical cuff; in 69 (38,8 %) – the mucous membrane of a new orifice was incised longitudinally at 12 and 6 o'clock (1-2cm), the suture was placed on the line of the incision. This suture divided the orifice into two parts.In addition to antireflux protection, in 21 (11,8 %) patients, we used plication stitches on contra mesenteric margin of the intestinal segment. This technique straightens the graft and prevents reflux development.Long-term complications included: stenosis of uretero-ileal anastomosis in 3 (1,7 %) patients, stenosis of ileo-vesical anastomosis – 6 (3,4 %), loss of kidney function – 5 (2,8 %), metabolic acidosis – 4 (2,2 %). Vesico-ureteral reflux with intravesical cuff was seen in 41 (36,6 %) patients, with intravesical cuff and divided orifice – 8 (13,3 %) (X2 = 13; p<0,01).

Conclusion: Intestinal plastics of the ureter remains effective method of preserving kidney function in patients with irreversible ureteral lesions. The cuff and suture dividing the intestinal orifice into two parts acts as a valve to reduce or eliminate vesico-intestinal reflux.

MP-08.10

Surgical Management and Functional Outcomes of Fournier's Gangrene: A Tertiary Care Center Experience

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Introduction and Objective: Fournier's gangrene (FG) is a rare urologic condition requiring prompt surgical debridement and intensive medical optimization. Future reconstruction is usually needed but the functional outcomes are largely unknown.

Materials and Methods: A retrospective review of patients treated for FG between October 2011 and April 2018. Available patients who prospectively contacted to enquire about quality of life and erectile function using validated questionnaires (VR-36 and IIEF respectively).

Results: 157 patients underwent surgical debridement for FG at our institution. At the time of FG presentation, median age was 54.0 (IQR: 45.0-61.0) and BMI was 34.2 (IQR: 29.4-43.0). They underwent a median of 2.0 (IQR: 1.0-2.0) debridements. Twenty-eight (17.8%) patients underwent bowel diversion during initial hospitalization. Thirty-four (21.7%) patients underwent wound reconstruction with a median time to reconstruction of 26.5 (IQR: 11.5-77.0) days following initial presentation. Split-thickness skin graft occurred in 16 (47.1%) patients and local advancement flap in 9 (26.5%) patients. In total, 25 (15.9%) deaths occurred with a median expiration of 47.0 (IQR: 15.0-246.0) days following diagnosis.8 patients were successfully contacted prospectively at mean of 42 months post-debridement. Mean IIEF score was 9.38 (SD 11.3). Patients with FG report significantly worse outcomes in all aspect of quality of life measures on VR-36 (physical function, energy/fatigue, emotional well-being, social function, pain, general health) compared to healthy controls.

Conclusion: FG continues to be an associated with high morbidity and mortality. Despite advancement in critical care and all reconstructive efforts patients report poor sexual function and overall quality of life.

MP-08.11

Urethral Stricture Management Knowledge and Surgical Experience Among United States Urology Residents

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Introduction and Objective: In 2007, a nationwide survey of board-certified U.S. Urologists reported that most had little experience with urethroplasty surgery. Additionally, U.S. urology Residents were also reported to have poor skills at interpreting urethrography. Since 2007, there has been a rapid growth within reconstructive urology including increasing number of fellowship training opportunities. Current U.S. Urology Resident knowledge and exposure with reconstructive urology is unknown. We sought to determine to what extent urethral surgery has disseminated to Resident training

Materials and Methods: A non-randomized anonymous clinical scenario-based survey was electronically mailed to all U.S. Urology Residents. Basic demographic information and experience with stricture management and surgery was obtained. Statistical analyses of the data utilized the t-test, Chi-square test, and one-way ANOVA.

Results: 209 of 1337 U.S. Residents responded to the survey (15.6% response). 75.1% were male. 58% were senior Residents and 42% junior Residents. 76% were at an institution with a reconstructive urologist on staff. 52% of the Residents reported they had assisted or observed 0-5 urethroplasties, 24% with 6-10, 10% with 11-15, 5% with 16-20, and 8% with > 20. 69% of residents reported that Urology (independently) harvested buccal grafts, 37% harvested skin grafts and 28% performed muscle flaps. For the actual survey questions, there were 166 respondents. In those respondents, residents correctly managed strictures, according to AUA guidelines, as to meatal stenosis (77%), short bulbar straddle injury (34%), short bulbar stricture refractory to urethrotomy (92%), penile stricture from lichen sclerosis (67%), graft choice (98%), and common complications of urethroplasty (83%). Using multivariate analysis, Resident level, number of urethroplasties assisted/observed, and the presence of a reconstructive urologist was examined for predictors of correct survey response. Resident level was the only significant predictor of correct response (p= 0.021).

Conclusion: U.S. urology residents have a good knowledge of urethral stricture management based on AUA guidelines, except for traumatic straddle strictures. The discipline of reconstructive urology seems to be incorporated into most US residencies -- with most Residents having reasonable urethral surgery exposure. However, practical work with muscles flaps and skin grafting is still lacking.

MP-08.12

Interposition Of Small Intestinal Submucosa (Sis) Graft In Surgical Treatment Of Lower Urinary Tract Defect: A Single Centre Experience

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Introduction and Objective: Lower urinary tract defect is a critical situation with challenging management that may need interposition tissue as Martius or SIS (small intestinal submucosa) flap. Most of the cases in our centre are urinary fistula, complicated urethral diverticula and postoperative complication of urinary tape or prolapse surgery. We aimed to analyse our results of SIS flap interposition in treatment of patients with lower urinary tract defect.

Materials and Methods: We reviewed retrospectively the 59 patients who underwent surgery of lower urinary tract with SURGISIS® (Cook Medical, Bloomington, IN, USA) interposition between 2011 and 2018. The urinary tract defect was closed using polydioxanone absorbable monofilament. SIS graft was interposed after hydration into a sterile saline solution. Six stitches of polyglactin braided absorbable 2-0. The primary endpoint was the absence of postoperative fistula. The secondary criteria were urinary continence, urinary flow, pain, sexual activity, complications and subsequent surgery.

Results: In October 2018, 55 patients (93%) had a successful urinary reparation procedure with the use of SIS interposition and up to 57 (97%) after second surgery. Three patients presented a Clavien Dindo grade III complications (2 vaginal elytroceles and 1 evisceration) and 7 had a grade I complication.

Conclusion: Despite varied aetiology, the use of SIS graft (Surgisis®, Cook) can be an effective and safe interposition flap in lower urinary tract defect reparation. Comparison trials are needed to implement the optimal strategy

MP-08.13

Belgrade Pouch in Females - First Results

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Introduction and Objective: Principle for orthotopic continent urinary diversions is based on creation of urinary reservoir with adequate capacity, low pressure and small resorptive surface which may obtain high level of continence and satisfactory frequency. Standard surgical techniques recommend usage of ileal segment in length of 40-65 cm for neobladder creation, with satisfactory results. During the time there is a constant enlargement of pouch capacity which can cause voiding problems (urinary tract retention, incontinence), ureterohydronephrosis, metabolic disorders and other complications.

Materials and Methods: In prospective study we included 34 female patients operated between 2009-2018 year because of organ confined muscle invasive bladder TCC, according to Belgrade pouch technique with usage of shorter ileal segment for neobladder creation average length of 27 (26-32)cm. Follow up period was 2 years.

Results: Average age of pts was 58 (38-67) yrs. Average operation time was 199 (155-320) min. Blood transfusion was applied intraoperatively in 32.3 % pts in average volume 385 (300-640) ml. 29.4% pts have anemia preoperatively. In early postoperative period we reported 2,9% pts with paralytic ileus which was resolved conservatively. Prolongated lymphorrhoaea appears in 5.8 % of pts. We did not notice wound dehiscence or urinary fistula in this group. High body temperature ≥ 38 °C) appears in 5.8% pts. Survival rate in 2-years period was 88.2%. Delayed characteristics and complications are shown in table No 1.

Conclusion: Despite small numbers of patients we concludet that orthotropic ileal neoblader created from shorter ileal segment "Belgrade pouch" provides high level of continence without significant increasing of voiding frequency, with adequate capacity, insignificant residual urine without urinary tract retention. We reported small percentage of pouch calculosis without acidosis and vitamin B12 deficiency in two years of follow up. Appearance of ureterohydronephrosis is in the same level as it is reported in referent studies.

MP-08.13, Table 1.

	3 months	6 months	1 yr	2 yrs
Day continence (%)	53	74	85	94
Night continence (%)	47	73	85	91
Bladder capacity (ml)	287 (220-348)	371 (285-449)	436 (330-504)	459(345-592)
PVR (ml)	10 (0-18)	16 (0-21)	19 (0-39)	27(0-40)
24-voiding frequency	9	8	7	6
Acidosis (%)	0	0	3	2,9
Vit B12 defficiency (%)	0	0	0	0
Pouch calculosis (%)	0	0	0	2,9
Hydronephrosis (No) Bilat Unilat	 4 /gr. I/ 0	 2 /gr.I/	 1 /gr. II/ 1 /gr. I/	 1 gr III-RePouch-anast 1/ Gr III/PNS

MP-08.14

The Incidence of Hypogonadism after Traumatic Brain Injury: A Systematic Review

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Introduction and Objective: Decreased testosterone concentrations after traumatic brain injury (TBI) can lead to presentations of symptoms which have a significant impact on the quality of life (QOL) of the patient. Patients may present with any number of signs and symptoms including decreased libido, erectile dysfunction, decreased muscle mass and in the long-term, osteoporosis. The objective was to assess the incidence of hypogonadism following TBI.

Materials and Methods: We searched Medline, Embase, Cochrane Registry, Cinahl up to October 2018. Two independent reviewers assessed and selected citations, extracted data, and assessed the risk of bias using a standardised form. We included cohort, case-control and cross-sectional studies enrolling at least five adults with TBI in whom at least testosterone was assessed. We excluded case studies and studies in which other neurological conditions were indistinguishable from TBI.

Results: The online search found 840 papers, from which 45 cohort studies which met the inclusion criteria were identified. Most studies measured all anterior pituitary hormones and the tools used to measure endocrine outcomes including testosterone didn't vary significantly between studies. Across the studies, hypogonadism was shown to impact on QOL including sexual dysfunction. There was little evidence of the benefits of testosterone Replacement Therapy (TRT) as TRT was rarely used to treat low testosterone levels in patients. The studies also found correlation across secondary outcomes, particularly TBI severity positively correlated to hypogonadism incidence.

Conclusion: Patients with TBI may have hypogonadism although this seems to be transient, with studies identifying resolution without intervention at follow-up several months later. Older age and TBI severity as identified by GCS predict anterior pituitary disorders including hypogonadism. Further high-quality studies are needed to better define the burden of hypogonadism and to assess the impact of TRT.

MP-08.15

Is There any Difference of Safety Between an Acellular Dermal Matrix (Allograft vs. Xenograft) Used for Penile Augmentation Surgery During the Early Period?

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Introduction and Objective: To assess the incidence of penile skin infection of an acellular collagen matrix (ACM; allograft vs. xenograft), we investigate two substances used for penile girth enlargement.

Materials and Methods: From January 2018 to January 2019, a total of 554 penile augmentation surgeries using allograft and xenograft were analyzed for this article. Post-op evaluations on the safety an acellular collagen matrix was conducted at the 2-week and 2-month follow-up visits after operation. We assessed the penile skin infection or necrosis caused by insertion of ACM and compared a difference between the two substances.

Results: Of the patients, xenograft was used in 472 cases (85.2%), and 82 (14.8%) used allograft. 96% of all patients reported great satisfaction with penile augmentation surgery with ACM. Infection, that required medical and surgical treatment, developed in 6 (1.3%) of these patients used xenograft and 1 (1.2%) of one used allograft, respectively. There was no statistical difference between the two groups. Of the patients with skin problems, 6 had no previous medical history, but 1 had a history of penile augmentation surgery seven years ago. All patients were cured of infection after graft removal and 2 weeks of continuous treatment with broad-spectrum antibiotics.

Conclusion: In the present study, there was no difference in the incidence of penile skin infection between the two groups. The study reported a high satisfaction rate with these two types of ACM for penile augmentation. Therefore, when the patients decide on penile augmentation surgery, we can choose any of these products comfortably.

MP-08.16

Impact of Pulmonary Rehabilitation on Sexual Activity in Patients with Chronic Obstructive Pulmonary Disease

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Introduction and Objective: Chronic Obstructive Pulmonary Disease (COPD) impairs quality of life, affecting also sexual function. Pulmonary rehabilitation (PR) is a helpful treatment in COPD patients. The aim of this study is to assess sexual activity on COPD male patients and evaluate the impact of a PR program over sexual function in COPD patients.

Materials and Methods: We conducted a single cohort prospective study over male COPD patients that are candidates to a PR program. Clinical, respiratory and biochemical (T, LH, FSH, progesterone) assessment were performed before enrolment. Patients were asked to fill a baseline IIEF questionnaire before PR program, and 6 months after completing it. Descriptive initial analysis was performed. Statistical comparison of respiratory values between patients with and without sexual activity at baseline was conducted using Pearson's X^2, Student's T test for independent samples, and non-parametrical tests when required. Evaluation of changes in IIEF results after PR compared with baseline values was performed using paired samples T-test. Satisfaction with treatment was assessed using EDITS at the last visit.

Results: After Ethics Committee approval, 62 male COPD patients were enlisted in the PR program between 2014 and 2016 and agreed to participate. Mean age: 66.5 years (SD 7.2). 52 Ex-smokers. 10 declared being sexually active (16.1%). No hormonal levels alterations. No significant differences on respiratory parameters (FEV1, 6-minutes walk test, number of exacerbations, CAT score) between sexually active and non-active patients. Baseline mean IIEF values: Erectile function 8, orgasmic function 4, sexual desire 5.6, intercourse satisfaction 5.3 and overall satisfaction 4.5. After the PR program, significant increase in mean IIEF value: 6.1 (IC95% 1.9-10.3). Improvement was found in all domains, with statistical significance on intercourse satisfaction 0.9 (IC95% 0.2-1.6). Moderate satisfaction with treatment was achieved according to EDITS.

Conclusion: Only a low percentage of COPD males included in PR is sexually active. No pulmonary differences were found between sexually active and non-active patients. PR improves sexual function, particularly intercourse satisfaction domain.

MP-08.17

Impact of the Advent of Collagenase Clostridium Histolyticum on the Surgical Management of Peyronie's disease: A Population-Based Analysis in New York State

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Introduction and Objective: Penile plication (PP) or grafting (PEG) has traditionally been the first line treatment for stable Peyronie's disease (PD). Numerous intralesional therapies (IT) have been introduced over the last few decades. Intralesional Collagenase Clostridium histolyticum (CCh) was FDA-approved in 2013 for patients with stable disease and intact erectile function. The impact of the advent of CCh on the surgical management of PD is unknown. We studied the effect of IT on surgical management of PD in a population-based analysis.

Materials and Methods: The SPARCS database (Statewide Planning and Research Cooperative System), which provides statewide all-payer data on patients in the outpatient, inpatient, ambulatory and emergency department setting in New York State, was reviewed. Descriptive statistics and multivariable logistic regression modeling assessed factors influencing choice of IT vs. surgical therapy (PP or PEG).

MP-08.14, Table 1.

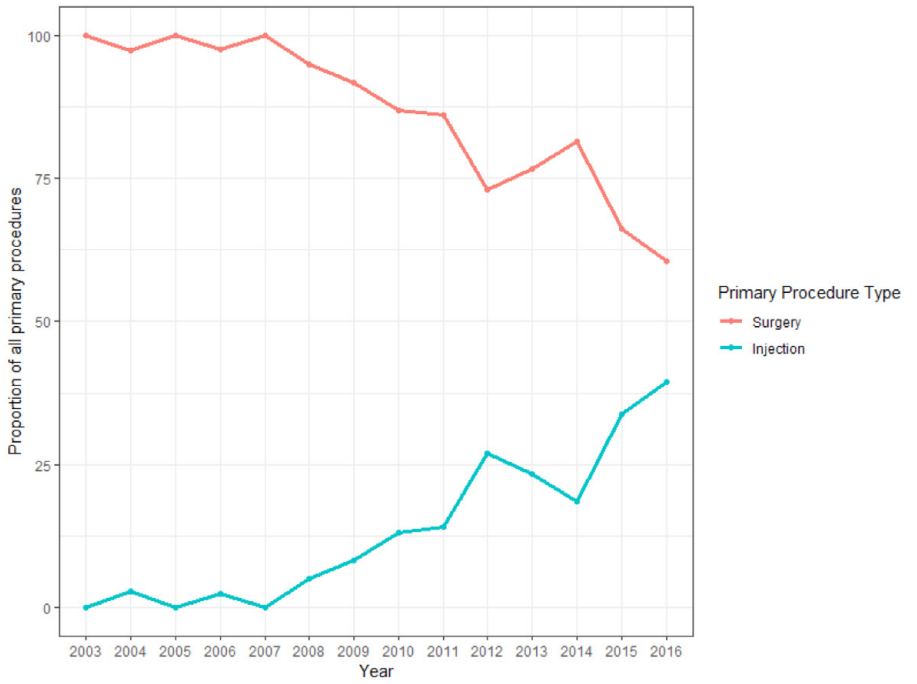
Acute Phase (24 hours – 6 months after Injury)	Chronic Phase (6 months +)
Decreased testosterone seen in 14.3%-100%	Decreased testosterone in 0%-36.8%
Mean 50.3%	Mean 15.9%
Median 48%	Median 12.7%

Patients undergoing penile prosthesis for concurrent erectile dysfunction were excluded.

Results: From 2003-2016, 547 patients with PD presented for management. Median age was 56 years and 57% were Caucasian. Over the study period (Figure 1), surgical management was used less often as the primary procedure with a concurrent increase in use of IT ($p < 0.001$). On multivariable modeling, patients more likely to receive IT were younger (OR= 1.26, P= 0.002, CI= 1.09-1.46), of higher socioeconomic status (OR= 1.14, P= 0.037, CI= 1.01-1.29), those who presented in the post CCH era (OR= 1.17, P= 0.018, CI= 1.03-1.33) and those who presented to a surgeon with a high volume practice (OR= 1.25, P= 0.007, CI= 1.07-1.48). A patient presenting in post CCH era was 17% more likely to receive IT.

Conclusion: There has been an increasing trend in using IT as the primary modality in the management of PD. There has been a markedly accelerated uptick in this trend since the introduction of CCH. IT is now utilized nearly as often as surgical therapies in the primary management of PD.

MP-08.17, Figure 1.



Moderated ePosters Session 9 Stones/Trauma

Saturday, October 19, 2019
1545–1715

MP-09.01

Is Trifecta of Stone Disease Achievable by Tubeless Miniperk PCNL for Stone less than 3 cm? Comparative Study of Tubeless Standard vs Tubeless Miniperk PCNL

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Introduction and Objective: PCNL has become a standard minimally invasive treatment for renal stones. Tubeless PCNL is associated with less morbidity. Miniaturisation of instruments leads decrease morbidity of procedure. Stone clearance, minimal morbidity and painless surgery are the trifecta for stone disease.

Materials and Methods: A prospective randomised study conducted at our institute from January 2017 to January 2018 and included 100 patients, 50 patients in group 1 (standard tubeless PCNL) & 50 patients in group 2 (Miniperc tubeless PCNL), with single renal stone smaller than 3 cm. Patients with CKD, solitary kidney, ectopic kidney, pediatric age group and previous diversion were excluded. Tract was dilated up to 24 Fr in group 1 & up to 16 Fr in group 2. Neither percutaneous nephrostomy nor DJ stent was kept. Post-operative pain score was monitored at 12 and 24 hours. Additional analgesia was given if pain score was more than 6 in form of tab. Tramadol 50 mg. Hemoglobin was measured on the second post-operative day. Stone clearance was checked with ultra-sonography & X-Ray KUB on 15th and 30th post-operative day. Total operative time, pain score, analgesic requirement, haemoglobin drop, complications (bleeding, fever, urinary leak & urosepsis) and stone free rate were compared.

Results: Total 107 patients were enrolled but 4 patients in standard and 3 patients in Miniperc group were excluded due to intra operative complications need stenting. Miniperc operative time was longer than standard PCNL (45±10 vs 35±8 mins. P<0.001). Median pain score at 12 and 24 hours and analgesic requirement was more in group 1 than in group 2 (6±1 vs 4±1, P<0.0001 and 3±1 vs 2±1, P<0.001). Post-operative hemoglobin drop was more in group 1 than in group 2 (0.95±0.2 vs 0.6±0.1, P<0.0001). Stone clearance in group 1 was 98% while in group 2 it was 96%. There was no significant difference in complications between the two groups.

Conclusion: Both Standard tubeless PCNL & tubeless Mini PCNL are effective for renal stones smaller than 3 cm. Operative time is more in tubeless Mini PCNL, whereas pain score, analgesics requirement and hemoglobin drop are more in standard tubeless PCNL comparatively. Stone clearance in both groups is comparable and more than 95% and trifecta of stone disease is very well achieved by Miniperc for stone smaller than 3 cm.

MP-09.02

Dietary and Metabolic Evaluation among First Time Stone Formers and Their Association with Various Stone Compositions

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Introduction and Objective: The study aims to identify the various composition of stones and their associated dietary and metabolic abnormalities. The study also compares the dietary pattern of first-time stone formers with their age matched cohorts within the same family.

Materials and Methods: A prospective observational study from August 2016 to July 2018. All first-time stone formers above 18 years of age were included. Representative diet chart of first-time stone formers with their age matched cohorts within the same family were compared. Patients were preoperatively evaluated with abbreviated metabolic profile. Post operatively stone analysis and 24-hour urine analysis was done and followed up for 2 years

Results: Among total of 1035 patients, average water intake among patients was 1.65±4.21 liters as against relatives of 2.68±3.60. Patients had significantly higher sodium, refined carbohydrate, oxalate and soft drink intake as compared to relatives. Three percent patients had primary hyperparathyroidism. The most common stone was calcium oxalate followed by uric acid and struvite. The most common 24-hour urine analysis abnormality was hypocitraturia followed by hyperoxaluria followed by hyperuricosuria. Factors associated with calcium oxalate stone formation were increased dietary sodium, and dietary carbohydrates with associated hyperoxaluria and hypocitraturia. Dietary increased protein intake was associated with hypercalciuria and 30% of patients with oxalate stone had this finding. Eighty three percent patients with uric acid stones had diabetes and had significantly higher protein intake. A 2-year recurrence free rate of renal calculi among first time stone formers was 83.53%.

Conclusion: There is a strong association among dietary intake, metabolic abnormalities and various stone compositions among first time stone formers. Therefore, identifying and modifying dietary patterns and metabolic derangements among first time stone formers may be the ideal way of preventing recurrences from the outset.

MP-09.03

Does Sexual Intercourse Influence the Success of Extracorporeal Shock Wave Lithotripsy in the Treatment of Distal Ureteral Stones?

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Introduction and Objective: To explore whether sexual intercourse is beneficial to the clinical outcome of ESWL for ureteral calculi of 7-15 mm in the distal ureter.

Materials and Methods: Between March 2016 and January 2017, 225 patents with a stone (7-15 mm) in distal ureter were randomly divided into three groups after ESWL: Group 1 was asked to have sexual intercourse at least three times a week, Group 2 was administered tamsulosin 0.4 mg/d, and Group 3 received standard therapy alone and served as control. Stone free rate, time to stone expulsion, pain score at admission, number of hospital visits for pain and steinstrasse were recorded in 2 weeks.

Results: 70 patients in Group 1, 71 patients in Group 2 and 68 patients in Group 3 were enrolled to the study. At the end of the first week and the second week, the stone free rates for Groups 1 and 2 were approximately the same but were significantly higher than Group 3 (p<0.05). The VAS scores of Groups 1 and 2 were slightly higher than those of Group 3 (p=0.233). However, the number of patients in Group 3 who visited the emergency room for pain was significantly higher than in the other two groups (p=0.015). At the end of the second week, the incidence of steinstrasse in Groups 1 and 2 was significantly lower (p=0.034).

Conclusion: At least three sexual intercourses per week after ESWL can effectively improve the stone free rate, reduce the formation of steinstrasse and relieve renal colic. It provides a choice for urologists in the ESWL treatment of lower ureteral calculi.

MP-09.04

Lower Serum Vitamin B9 Concentration May Contribute to Occurrence and Development of Nephrolithiasis

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Introduction and Objective: Previous studies have reported that vitamins were associated with nephrolithiasis. This study was performed to explore the correlation between serum vitamins concentration and the occurrence and development of nephrolithiasis.

Materials and Methods: Five hundred and ninety-eight adult hospitalized patients from our hospital between August 2014 and November 2018 were included in the study, including 299 patients who had been diagnosed as nephrolithiasis, and 299 age- and gender-matched non-nephrolithiasis patients as normal controls. Nephrolithiasis patients were also categorized into two groups: 123 patients with single stone and 176 patients with multiple stones; 222 initial-stone formers and 77 recurrent-stone formers. Serum vitamins (vitamin A, vitamin B1, vitamin B2, vitamin B6, vitamin B9, vitamin B12, vitamin C, vitamin D, and vitamin E), electrolytes (sodium, potassium, calcium, magnesium and inorganic phosphors), serum carbon dioxide combining power (co2cp) and other clinical data were collected. Statistical analysis was performed to find significant serum sample difference in groups.

Results: Firstly, compared with normal controls, lower serum vitamin B9 concentration (15.06 ± 0.13 vs 15.63 ± 0.14 nmol/L, p=0.003) were detected in the nephrolithiasis patients' group. And after adjustation, vitamin B9 was still a protective factor (OR=0.91,

MP-09.03, Table 1. Overall results in groups 1, 2 and 3

	Group1: sexual intercourse(n=70)	Group2: tamsulosin(n=71)	Group3: control(n=64)	P values(1-2-3, 1-2, 1-3, 2-3)
Age (years ± SD)	35.11 ±8.33	35.27 ±8.08	34.10 ±8.40	0.668
				0.912
				0.473
				0.407
Stone diameter (mm)	11.05 ±2.44	10.56 ±1.96	11.89 ±2.25	0.306
				0.199
				0.924
				0.171
SFR after 1 weeks (free/ failure)	48/22 (68.6%)	49/22 (69.0%)	34/34 (50%)	0.031*
				0.955
				0.026*
				0.022*
SFR after 2 weeks (free/ failure)	56/14 (80.0%)	58/13 (81.7%)	43/25 (63.2)	0.022*
				0.799
				0.029*
				0.015*
VAS	5.76 ±1.74	5.58 ±1.69	6.04 ±1.40	0.233
				0.510
				0.299
				0.091
Need for relieve pain emergency (yes/no)	6/64 (8.6%)	4/66 (5.7%)	14/54 (19.1%)	0.015*
				0.512
				0.045*
				0.009*
Steinstrasse (yes/no)	2/68 (2.9%)	2/69(2.8%)	8/60(11.8%)	0.034*
				0.989
				0.044*
				0.041*

* Statistically significant, p < 0.05

95%CI 0.84-0.99, P=0.020). Secondly, patients with multiple stones had lower serum vitamin B9 concentration (14.78 ± 0.16 vs 15.48 ± 0.23 nmol/L, p=0.011) compared with patients with a single stone. After adjustation, it was still a protective factor (OR=0.87, 95%CI 0.78-0.98, P=0.019). Thirdly, lower serum vitamin B9 concentration (14.62 ± 0.26 vs 15.21 ± 0.16 nmol/L, p=0.059) was detected in recurrent-stone formers compared with initial-stone formers. After adjustation, it was still statistically significant (OR=0.86, 95%CI 0.75-0.97, P=0.016).

Conclusion: Lower serum vitamin B9 concentration was significantly associated with higher nephrolithiasis burden, and it may contribute to the occurrence and the development of nephrolithiasis.

MP-09.05

Cost Analysis on the Use of Disposable Ureteroscopes to Decrease the Cost of Reusable Ureteroscopes Repairs

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Introduction and Objective: To determine if disposable ureteroscopes can be used cost-effectively to decrease the number of reusable ureteroscopes repairs.

Materials and Methods: Patients undergoing flexible ureteroscopy for renal calculi between June 2018 and August 2018 at the Canberra Hospital, ACT were included in our study. Patients were allocated to the disposable ureteroscope (LithoVue- Boston Scientific) arm if they had difficult features (1. Lower pole calculus >8 mm, 2. Large stone burden >15 mm, 3. Complicated calyceal anatomy or 4. Endoscopic combined intra-renal surgery). All other patients were allocated to the standard reusable ureteroscopes arm (Storz Flex-Xc video ureteroscope). We then compared the number of ureteroscopes repairs and costs for this intervention period to that of the last 4 years. Data were analysed using SPSS 24.0

Results: Sixty-two patients were included in the study over a 3-month period. Eighteen patients underwent flexible ureteroscopy using the disposable ureteroscopes while the remaining 44 cases utilised the reusable ureteroscopes. The mean age was 55, with an average of 2.2 calculi treated and 14mm of stone burden. During this three-month intervention period, there was a significant decrease to 1 repair of the reusable ureteroscopes compared to mean of 3.6 repairs every 3 months for the pre-intervention period (p= 0.04). Repair costs during the intervention period were $500/month compared to $5850/month over 4 years in the pre-intervention period. At a utilisation rate of 6 disposable scopes/month, the disposable ureteroscopes would need to be priced below $900 to have cost neutral.

Conclusion: The use of disposable ureteroscopes can decrease the number of reusable ureteroscope repairs. At current pricing disposable ureteroscopes are approximately cost-neutral in decreasing ureteroscope repair costs. Further refinement of our protocol for selection of disposable ureteroscope cases may lead to better cost-savings.

MP-09.06

Comparison of the Surgical Outcome SWL, Mini-PNL and RIRS for Lower Pole Stones with a Size < 2 cm: A Systematic Review and Meta-Analysis

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Introduction and Objective: We aim to compare the surgical outcomes of SWL, RIRS and mini-PCNL for the treatment of lower pole stones with a size <2cm.

Materials and Methods: The systematic review was performed according to the PRISMA guidelines. Several databases were searched including PubMed, Scopus, Cochrane, Embase, WOS without language restriction. Only comparative prospective studies were evaluated. Not randomized studies or studies not describing the location of the renal stones were excluded. The primary endpoint was the stone free rate (SFR) at 3 months. Secondary endpoints included operative time, days of hospitalization, retreatment rate and complications. Statistical meta-analyses were performed with the RevMan 5.3.5 software.

Results: In all, 6687 publications were identified after the initial search, from which 18 randomized controlled trials (RCTs) were included in the systematic review. The SFR at three months was similar between

mini-PNL and RIRS with OD of 1.46 (95% CI: 0.58, 3.65; I2= 25%; p= 0.42). Both mini-PNL and RIRS had higher SFR than SWL with OD of 0.12 (95% CI: 0.04, 0.37; I2= 0%; p= 0.0003) and 2.92 (95% CI: 2.13, 4.01; I2= 45%; p < 0.00001) respectively. The operative time was shorter in the case of mini-PNL compared to RIRS with MD of 31.42 (95% CI: 26.15, 36.68; I2= 96%; p < 0.00001). When comparing RIRS with SWL, the operative time was shorter in the case of SWL with MD of 7.58 (95% CI: 7.03, 8.13; I2= 100%; p= 0 < 00001). A meta-analysis between mini-PNL and SWL was not possible. Hospitalization time was similar between mini-PNL and RIRS with MD of 0.12 (95% CI: -0.03, 0.26; I2= 23%; p= 0.11). A meta-analysis between SWL and mini-PNL or RIRS was not possible. In case of retreatment rate, a meta-analysis between mini-PCNL and RIRS was not possible, but both technics had more favorable results than SWL with OD of 28.57 (95% CI: 7.63, 106.93; I2= 0%; p < 0.00001) and 0.05 (95% CI: 0.03, 0.08; I2= 54%; p < 0.00001) respectively. The complication rate was similar between the group.

Conclusion: Mini-PNL and RIRS had similar SFR and hospitalization time, but mini-PNL had shorter operative time than RIRS. Both technics had higher SFR and lower retreatment rates than SWL.

MP-09.07

Dietary Vinegar Suppresses Nephrolithiasis Through Epigenetic Regulations

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Introduction and Objective: Epidemiological evidence suggests that daily intake of vinegar whose principle bioactive component is acetic acid is associated with a reduced risk of nephrolithiasis. The underlying mechanism, however, remains largely unknown. Here we prove that impact of dietary vinegar on calcium oxalate (CaOx) crystals formation and its mechanism.

Materials and Methods: We used an animal model in rat fed with ethylene glycol (EG)-containing water.

Results: We found that oral administration of vinegar or 5% acetic acid reduced EG-induced CaOx crystal formation likely through increased citrate and reduced calcium in urinary excretion, two critical molecules for CaOx crystal formation. Mechanism dissection suggested that acetate enhanced acetylation of Histone H3 in renal tubular cells and promoted expression of microRNAs-130*a-3p, -148b-3p and -374b-5p* by increasing H3K9, H3K27 acetylation at their promoter regions. These miRNAs can suppress the expression of Nadc1 and Cldn14, thus enhancing urinary citrate excretion and reducing urinary calcium excretion. Furthermore, systemic delivery of antagomiRs against these miRNAs abolished protection from vinegar through derepression of Nadc1 and Cldn14. Consistent with this, systemic agomiRs could silence Nadc1 and Cldn14 expression, mimicking the effect of vinegar consumption in reducing renal CaOx crystals deposition. Significantly these mechanistic findings were confirmed in human kidney tissues, suggesting similar mechanistic relationships exist in humans among vinegar, Histone H3 acetylation, NADC1 and CLDN14 expression as well as expression of *miR-130a-3p, miR148b-3p and miR-374b-5p*. Results from a pilot clinical study indicated that daily intake of vinegar increased citrate and reduced calcium in urinary excretion in CaOx stone formers without adverse side effects.

Conclusion: Our findings demonstrate that vinegar prevents CaOx nephrolithiasis through influencing urinary citrate and calcium excretion via epigenetic regulations. Vinegar consumption is a promising strategy to prevent CaOx nephrolithiasis occurrence and recurrence.

MP-09.08

EMS Lithoclast Trilogy - A New Method for Stone Disintegration During PCNL

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Introduction and Objective: Several energy sources are used for stone disintegration during PCNL. All have their own advantages & disadvantages. The EMS LithoClast Trilogy is the first device combining electromagnetic impactor with ultrasonic energy and suction. Animal studies and in vitro phantom stone studies have proven the safety and efficacy of this device. We aim to study the safety and efficacy of Lithoclast Trilogy EMS™in our patients in this clinical trial.

Materials and Methods: After ethics committee aproval, 31 patients were included in this prospective study. In 20 patients, standard PCNL with tract size from 22 -28 and probe size 10.2F was used, and in 11 patients' tract size of 15 and probe size of 5.7F was used. Demography, stone characteristics, operation details and post-op events were noted. Efficacy was determined by stone volume clearance rate in mm^3 per minute.

Results: Male to female ratio was 6:5 for mini PNL (MPNL) and 16:4 for standard PNL (SPNL). Stone densities were 1229 ± 206 HU vs. 1168 ± 344 HU MPNL vs. SPNL. Mean stone volumes were 3776.1 ± 2132 mm3 for MPNL and 7096 ± 6441 mm3 for SPNL. Mean stone volume clearance ratios were 370.5 ± 171 mm3/minfor MPNL and 590.7 ± 250 mm3/minfor SPNL. Hb drop was comparable with 1.24±0.64 MPNL vs. 1.23±0.89 SPNL. Total procedure time / lithotripter activation time was 53.4 ± 23.8 / 14.7± 12.4 min for MPNL and 65.2 ± 23.5 / 12.0 ± 8.9 for SPNL. Complications: 2 Clavien grade I (fever requiring antipyretics) / Clavien grade II (fever with antibiotic change) 2 / 1 per group. No device failure occurred.

Conclusion: Swiss LithoCLast Trilogy™ clears stones in standard and mini PNL procedures very fast. Ease of use, high tissue safety, and optimized suction set-up which avoids fragment blockings, are other key features of that novel device. There were no adverse events with this device in our study.

MP-09.09

Complete Ultrasound-guided Percutaneous Nephrolithotomy in Prone and Supine Positions: A Randomized Controlled Study

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Introduction and Objective: To evaluate the safety, efficacy, adverse events and feasibility of ultrasound guided percutaneous nephrolithotomy (US-PCNL) in the management of large renal stones in supine and prone positions and to point out the practical considerations related to these techniques in comparison with standard PCNL.

Materials and Methods: This study was conducted between August 2013 to September 2018 as a prospective randomized and controlled study. A total of 392 consecutive patients with nephrolithiasis >2 cm were randomly assigned to undergo ultrasound PCNL in prone (P-US-PCNL) (132 patients); supine position (S-US-PCNL) (129 patients) or conventional PCNL

MP-09.09, Table 1. Demographic and preoperative clinical characteristics of the patients

Parameters	P-US-PCNL Group (n = 132)	S-US-PCNL Group (n = 129))	C-PCNL Group (n = 131)	P value
Age, (years; mean ± SD)	39.6 ± 9.6	38.8 ± 11	40.6 ± 10.8	0.920
BMI (kg/m2, mean± SD)	27.9 ± 3.2	28.8 ± 3.4	28.3 ± 3.3	0.092
Hydronephrosis Grade, n (%)				
None				0.879
Mild	17 (13)	24 (18.6)	19 (14.5)	
Moderate	45 (34)	42 (32.6)	45 (34.4)	
Severe	58 (44)	51 (39.5)	52 (39.7)	
	12 (9)	12 (9.3)	15 (11.5)	
Stone size (mm; mean± SD)	31.2 ± 8.9	32.2 ± 9	33.6 ± 9.9	0.116
Guy's stone score (M± SD)	1.8 ± 0.96	1.77 ± 0.99	1.82 ± 1	0.590
Stone density (HU, mean± SD,)	861 ± 229	915 ± 263	900 ± 253	0.201
Stone type, n (%)				0.679
Single	70 (53)	59 (45.7)	71 (54.2)	
Multiple	46 (35)	52 (40.3)	46 (35.1)	
Staghorn	16 (12)	18 (14)	14 (10.7)	

MP-09.09, Table 2. Operative Data

Puncture attempts median (range)	2 (1 - 4)	2 (1 - 6)	1 (1 - 4)	>0.001*
Access time (seconds; mean ± SD)	15.8 ±5.8	19.3 ±9.4	16.5±8.1	0.001**
working tracts N (%)				0.701
Single	121 (92)	114 (88.4)	114 (87)	
Multiple	11 (8)	15 (11.6)	17 (13)	
tract length (mm; M ± SD)	87.2 ± 15.4	100±22.8	89.6±16.3	>0.001¶
Operative time (minute; mean ± SD)	69 ± 22	75± 23	72 ± 27	0.095
Hemoglobin drop (g/dL, mean ± SD)	1.65 ± 0.66	1.77± 0.78	2.1 ± 0.90	>0.001¨
1ry SFR, N (%)	86 (65.2)	73 (56.6)	81 (61.8)	0.431
Ancillary procedure, N (%)				0.843
2ndlook PCNL				
ESWL	13 (9.8)	21 (16.3)	19 (14.5)	
URS	6 (4.5)	5 (3.9)	6 (4.6)	
	3 (2.3)	2 (1.6)	3 (2.3)	
Final SFR, N(%)	116 (88)	102 (79)	111(85)	0.146

* P-US-PCNL vs S-US-PCNL, p= 0.003; P-US-PCNL vs C-PCNL, p= 0.365; S-US-PCNL vs C-PCNL, p< 0.001.
** P-US-PCNL vs S-US-PCNL, p= 0.001; P-US-PCNL vs C-PCNL, p= 0. 844; S-US-PCNL vs C-PCNL, p= 026.
¶ P-US-PCNL vs S-US-PCNL, p< 0.001; P-US-PCNL vs C-PCNL, p= 0.508; S-US-PCNL vs C-PCNL, p< 0.001.
¨ P-US-PCNL vs S-US-PCNL, p= 0.478; P-US-PCNL vs C-PCNL, p= 0.023; S-US-PCNL vs C-PCNL, p< 0.001.
∞ some cases have initial e punctures into multiple calyces

(C-PCNL) (131 patients). The preoperative parameters, the intraoperative findings, operative time, hospital stay, perioperative morbidities, stone free Rate (SFR) and related data were recorded.

Results: The demographic and baseline characteristics were comparable in all study groups. The mean number of trails and time for successful puncture in P-US-PCNL; S-US-PCNL; and C-PCNL were 1.9 ± 1; 2.3 ± 1.2; and 1.7 ± 1; respectively ($p < 0.001$); and 15.8 ± 5.8; 19.3 ± 9.4; and 16.5 ± 8.1seconds, respectively ($p < 0.001$). The operative time was 69 ± 22; 75 ± 23; and 72 ± 27 minutes, respectively, ($p > 0.05$). The mean nephrostomy time and length of hospital stay were 3 ± 1.3; 3.4 ±1.5; 3.2 ± 1.2 hours, respectively; and 3.8 ± 1.5; 4.1 ± 1.5; 3.9 ± 1.3 days; respectively ($p > 0.05$). The mean percentage decrease in hemoglobin concentration was 1.65 ± 0.66; 1.77 ± 0.78; and 2.1 ± 0.9, respectively ($p < 0.001$), overall stone clearance was 88%; 79%; and 85%; respectively ($p > 0.05$). Complications were acceptable and similar between groups.

Conclusion: US-PCNL either in prone or supine position is as effective, feasible and safe as C-PCNL with zero radiation exposure.

MP-09.10

Can Computed Tomography Scan Predict the Type of Urinary Stones and Obviate the Need for Further Biochemical Analysis?

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Introduction and Objective: Computed tomography (CT) is widely used to diagnose urinary stones. In addition to the size and location of the stone and the overall health of the kidney, the density of the stone in Hounsfield units (HU) was used to predict stone composition (mainly calcium containing lithiasis). Herein we investigate the reliability of CT density to detect urinary stone compositions and obviate the need for biochemical stone analysis.

Materials and Methods: Between March and December 2018, we prospectively evaluated 143 patients with urinary stones and studied the CT density using Hounsfield units (HU) of the stones. Then, the HU value was compared with the result of stone biochemical analysis. Data was analyzed using the appropriate statistical tests and SPSS package version 20.

Results: During the study period, 142 stones were evaluated in 142 patients in whom biochemical stone analysis was performed. We put the mean HU 900 as a cutoff value. A value of 900 HU or more was noted is 62 patients. Of the latter, 50 patients (80.6%) had the biochemical stone composition of calcium oxalate monohydrate mainly (70-100%), 9 (14.5%) had mainly calcium oxalate dihydrate (60-80% of stone composition), and 3 (4.8%) had mixed composition (calcium carbonate phosphate, brushite stones). CT density of less than 900 was found in 80 patients. In this group, calcium oxalate stone were noted in 53 patients (66.3%), uric acid stone in 10 (12.5%), cystine in 6 (7.5%), ammonium hydrogen urate in 4 (5%), struvite stone in 1 (1.3%) and mixed stones in 6 (7.5%).

Conclusion: Hounsfield units (HU) above 900 is highly predictive of calcium oxalate stones. However, HU below 900 indicates variable stone compositions. Therefore, we recommend stone analysis only to those patients with HU less than 900.

MP-09.11

Comparative Study on Anatomical Parameters of Renal Lower Pole Between Normal Population and Patients with Lower Pole Calculi

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Introduction and Objective: To explore whether there is difference in anatomy of lower pole between normal population and patients with lower pole calculi.

Materials and Methods: The anatomic parameters of lower calyx, including infundibulopelvic angle (IPA), infundibular length (IL), infundibular width (IW), and Caliceal pelvic height (CPH) were prospectively collected and measured in patients with lower pole calculi, and compared with normal population.

Results: A total of 172 patients with lower pole calculi and 203 normal subjects were collected. The anatomical parameters of IPA, L, IW, CPH were analyzed by single-factor statistical analysis in normal people and patients with lower pole calculi. There was significant difference in IPA ($P < 0.0001$), IL ($P < 0.0001$), IW ($P < 0.0001$) and CPH ($P < 0.0001$) between the two groups. Multi-factor Logistic regression analysis showed that there were three factors with $P < 0.1$ corresponding to the estimated coefficients: IL, IW, CPH. According to the Logistic regression analysis, a line chart was created to visualize the prediction. The sensitivity was 71.51% and the specificity was 82.27%.

Conclusion: The anatomical parameters of renal lower pole in normal population are different from those in patients with lower pole stone. It is necessary to fully recognize the possible anatomical variation of lower pole in operation.

MP-09.12

Pelvic Fracture-Related Injuries of the Bladder Neck and Prostate

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Introduction and Objective: Injuries to the prostate and bladder neck (BN) as a consequence of traumatic disruption of the pelvic ring are a well-recognised but uncommon entity. The aim of this study is to describe the nature, cause, and management of this type of injury.

Materials and Methods: Over a 10-year period, 15 men with pelvic-fracture related injuries of the BN were treated in a single tertiary reconstructive urology unit. They were referred between 3 months to 5 years after injury with intractable incontinence, recurrent infections or hematuria. 12 had a longitudinal rupture of the bladder neck and prostate at or close to the anterior midline and associated with lateral compression or 'open book' fractures. 5 were confined to the BN and prostatic urethra; the other 7 extended into the subprostatic urethra. All were associated with cavitation into the pubic symphysis when this was disrupted or otherwise involving pubic bone fragments where these had been fractured. 2 of the injuries were simultaneous transection of the BN and the membranous urethra with a sequestered prostate in between. In another, the anterior aspect of the prostate was avulsed. 14 patients underwent reconstruction by resection of any involved bone fragments and excision of the cavity, layered repair of the prostate and BN with an omental wrap in 13. The last patient had a Mitrofanoff diversion.

Results: The primary injury appeared to be to the prostate and prostatic urethra with secondary extension into the BN or subprostatic urethra. Of those reconstructed, the one without an omental wrap broke down and was salvaged by revision surgery. 4 patients who had an associated typical posterior urethral injury had a simultaneous bulbo-prostatic anastomotic urethroplasty. 6 patients had an acceptable continence after reconstruction; the other 8 underwent subsequent implantation of an AUS.

Conclusion: These injuries usually occur primarily to the prostate with the BN being involved by secondary extension. They have a particular cause and particular location with a predictable outcome. A high index of suspicion is needed to identify them and treat them promptly to avoid significant morbidity.

MP-09.13

Genitourinary Trauma in Sport: Analysis of 10-year data from a Tertiary Centre

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Introduction and Objective: Injury whilst playing high impact sports is quite common. Most of the data concentrates on musculoskeletal injury given the incidence far outweighs solid organ injury. Nonetheless, solid organ injury can be severe, and the damage caused to patients can be devastating. We aim to analyse the admission rates of trauma related to sport causing genitourinary injury at our centre to further ascertain the disease burden. We highlight any changes to sports that may reduce this incidence and improve patient outcomes.

Materials and Methods: Ethics approval was acquired from the Austin Health Ethics committee. Patients who were admitted to Austin Health from 2007-2017 with genitourinary trauma were included. Those patients who were injured due to sport were highlighted. The demographics, management and outcomes were studied. Twelve patients were identified to have suffered from genitourinary injuries caused by sports related trauma. Five cases presented with varying degrees of kidney injury and two cases of ureteric injury. Scrotal injuries accounted for five cases. The longest length of stay in hospital was six days and the average age of admission was twenty years of age. Of the twelve cases, four were cricket related, two were pole vault related and three were related to Australian Rules Football. One case was related to basketball, bike riding, horse riding and rugby respectively. Of the twelve cases, five needed surgical management. Of the sports involved, only cricket mandated protective sports equipment for the injuries involved. Of the two cricket related injuries which received surgical intervention, one patient was wearing the protective gear recommended and the other was unspecified.

MP-09.14

Iatrogenic Urinary Tract Injuries During Obstetric and Gynecological Procedures: Single Center 7-Years' Experience

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Introduction and Objective: Urologic injuries during obstetric and gynecologic procedures are not uncommon. Studies revealed an incidence of 0.18% and 0.49% bladder injuries and 0.01% and 0.24% ureteric injuries in obstetric and gynecologic surgeries respectively. These complications can result in morbidity and even mortality for affected patient. Our aim is to retrospectively analyze the frequency and management of urological injuries in obstetric and gynecological procedures in our tertiary referral hospital over the last 7 years.

Materials and Methods: Of 12910 obstetrical and gynecological surgeries performed in our hospital from January 2012 to August 2018, medical records of all patients who sustained urological injuries were reviewed. Type and indication of surgery, site of urologic injury, type of urologic management and outcome were reported and analysed.

Results: During the study period 1356 patients had underwent gynecological surgery and 11554 patients underwent obstetric surgery (Caesarean Section "CS" in 11533; of them 3661 were recurrent or caesarean hysterectomy in 21 cases (12 with placenta Accrete, 5 with placenta Increta, 2 with placenta Percreta, and 2 for postpartum haemorrhage) .Urological injuries were sustained in 42 (0.33%) patients. Bladder injury was reported in 8 (0.56%) gynecological surgeries and 28 (0.24%) obstetric surgeries (1 with primary CS, 22 with recurrent CS, 3 with placenta Increta and 2 with placenta Percreta). Ureteric injury was seen in 4 (0.29%) gynecological surgeries and 2 (0.017%) obstetric surgeries; the injuries included ligation in 2 (0.015%) cases, transection in 2 (0.015%) cases and contusion in 2 (0.015) cases. All injuries were diagnosed intraoperatively. Cases of bladder injury were treated by formal surgical repair and bladder drainage, while patients with ureteric injury were treated by surgical repair and/or ureteral stenting.

Conclusion: Urological injuries were more common among gynecologic than obstetric surgeries. Difficult surgeries due to recurrent CS or abnormal placenta were the commonest causes for urologic injuries in obstetric cases. Key factors to ensure good outcome are keeping high index of suspicion in difficult and risky cases with early recognition and immediate repair of injuries.

Moderated ePosters Session 10 Kidney, Ureter, Adrenals

Saturday, October 19, 2019
1545–1715

MP-10.01

Robotic Enucleation of Adrenal Tumors

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Introduction and Objective: To evaluate the feasibility and safety of the application of robot-assisted laparoscopic partial adrenalectomy (RALPA) for patients with adrenal mass.

Materials and Methods: The study retrospectively reviewed 13 patients who underwent RALPA in Shanghai Changhai Hospital. 8 were women and 5 were men, with an average age of 48 years old (range 32 to 68). The median nodule size was 3.3 cm (range 2.3 to 6.5). RALPA was performed with a standard procedure using Da Vinci robotic system. Multivariate analysis was used to identify predictors of operative time, warm ischemia time, estimated blood loss, major perioperative complications, and postoperative functional outcomes.

Results: All robot-assisted partial adrenalectomies were successfully completed without conversion to a hand-assisted or an open approach. The final pathologic examination revealed that 5 patients were non-functional adrenal adenomas, 4 patients were primary hyperaldosteronism and 4 were pheochromocytomas. The mean operative time was 75 minutes (range 60 to 95), with a mean warm ischemia time of 12 minutes (range 8 to 17). The estimated blood loss was 20 mL (range 10 to 50). No intraoperative complications occurred. At a median follow-up period of 12 months (range 9-15), all patients are steroid independent without any disease recurrence.

Conclusion: As an alternative procedure for several adrenal masses, RALPA represents a safe and effective approach with promising perioperative and functional outcomes, which merit an increasing adoption for this technique.

MP-10.02

The Adrenal Vein Sampling Algorithm Should be Applied Before Adrenalectomy

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Introduction and Objective: Primary aldosteronism has become a common cause of hypertension. The screening guideline was promoted by measuring the plasma aldosterone-to-renin (PAC/PRA) ratio. However, the data were affected by various factors. The Mayo Clinic developed an algorithm that uses adrenal computed tomography (CT) and adrenal vein sampling (AVS), in order to diagnose aldosterone-producing adenomas (APAs). Since the AVS algorithm was introduced 4 years ago in our center, we aimed to review the applications in clinical practice.

Materials and Methods: In this chart-review study, all patients who underwent unilateral adrenalectomy since a radiologist joined our team in September 2014 were enrolled. AVS was performed in accordance with the patients' will. Complete data were acquired and analyzed using MedCalc Statistical Software, including initial symptoms, 24-hour urine collection, imaging studies, case detection tests (with PAC / PRA ratio), AVS results, surgical results, and duration of follow-up.

Results: From Oct. 2014 to Apr. 2019, of 66 patients had adrenalectomy, 49 underwent AVS (22 were male and 27 were female, with an average age of 53.7 ±11.0 years). Twenty-eight patients had hypertension, but only 17 of them developed symptoms of hypokalemia. Before the surgery, 5 patients repeated AVS due to artificial data. In addition, 67.3% of the patients showed peripheral PAC/PRA ratios of >20 (range, 960–1.08). Image studies were obtained as pre-operative evaluation. However, the CT/MRI results were not consistent with the AVS in 5 patients (10.2%). The adrenal gland (tumor part if identified) weighed 15.7 ±12.6 g. Pathological findings included adrenal cortical adenoma (71.4%), adrenal hyperplasia 11 (22.4%), cystic teratoma (2.0%), pheochromocytoma (2.0%) and ganglioneuroma (2.0%). The follow-up duration was 10.7 ±10.4 months. The last postoperative case detection testing (peripheral PAC/PRA ratio) showed a biochemical abnormality in 13 patients.

Conclusion: Although AVS is time-consuming and experience-dependent, it is necessary and useful for identifying tumor sites. Furthermore, its success rate varies; therefore, imaging studies and case detection tests should also be considered. Almost all patients can induce a significant reduction in aldosterone secretion. Therefore, we follow this algorithm to evaluate surgical candidates.

MP-10.03

Lessons Learnt after Selective Artery Embolization of 41 Patients: Propensity Scoring Matched Study of 2076 Partial Nephrectomies

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Introduction and Objective: Partial nephrectomy (PN) is the current surgical standard for T1 renal tumors. However, occasionally potentially life-threatening postoperative hemorrhagic complications have been reported. Our objective was to assess the clinical characteristics in patients undergoing selective artery embolization (SAE) due to iatrogenic vascular complication.

Materials and Methods: We retrospectively evaluated patients who underwent SAE after PN from 2076 patients who underwent PN between 2005 and 2018. Patients' characteristics and clinical outcomes were analyzed through entire data analysis and propensity score matching (PSM).

Results: SAE was performed in 41 (1.97%) patients who underwent open (19/1171), laparoscopic (4/60), and robot-assisted PN (18/845). The median period from PN to SAE was 12 days. The most common symptom of 31 (75.61%) patients was gross hematuria, followed by flank pain (3/41). Follow-up computed tomography of 7 asymptomatic patients revealed iatrogenic vascular complications. The main reason for SAE on angiography was pseudoaneurysm (32/41), followed by arteriovenous fistula and contrast extravasation. Technical and clinical success was achieved in all patients. There were no episodes of bleeding during the follow-up period. The embolization and control groups showed 94.9% and 94.3% estimated glomerular filtration rate (eGFR) preservation after PN, respectively, with no statistical difference between the two groups (p= 0.649). There was no statistically significant difference in surgical methods or baseline characteristics between the two groups in the entire data analysis and PSM. Conversely, there was statistically significant difference in ischemic time in the entire data analysis and PSM. In the embolization group, renal tumors were endophytic (28/41) and posterior (25/41) and showed statistically significant difference in the PSM.

Conclusion: SAE is an effective method for controlling postoperative bleeding while preserving renal function after PN. To prevent vascular complication, urologists should strive to reduce ischemic time and also pay attention to renal masses with endophytic and posterior locations, especially.

MP-10.04

The Sonic Hedgehog Link: Histopathology and Protein Analysis of Stented and Unstented Paired Porcine Ureter

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Introduction and Objective: Pre-stenting of the ureter causes passive ureteric dilatation and better access to the urinary system during subsequent procedures. However, the pathophysiology of ureteral stenting is currently unknown. In this study, we aim to elucidate the mechanistic pathway that leads to the involvement of multiple tissue layers in ureteric dilatation.

Materials and Methods: Three pigs were stented unilaterally for 14 days and sacrificed. Both stented and non-stented ureters were harvested; histological analysis was performed to determine the tissue layers affected by stent placement. The protein expression of transcription factor Gli-1 (effectors of Hedgehog signaling) was assessed via immunohistochemistry scored independently by 3 different pathologists who were blinded to the laterality of ureteric stenting.

Results: Microscopic examination of transverse cut sections of the ureters demonstrated luminal dilatation of both stented and non-stented ureters in Pigs 1 and 2. Pig 3 showed luminal dilatation of the stented ureter with no significant histological changes on the contralateral non-stented ureter. The ureters were not uniformly dilated along its entire length; proximal segments of the ureters showed a significantly greater degree of dilatation compared to the distal segments. The mucosa showed diffuse reactive changes with intestinal metaplasia. The stented ureter displayed focal mucosal ulceration associated with acute inflammation and granulation. In the submucosal layers, chronic inflammatory changes were seen in

both the stented and non-stented ureters. The muscularis propria layer in both stented and non-stented ureters showed smooth muscle thinning and hyperplasia with increased luminal diameter. Gli-1 protein was expressed in the smooth muscle cells of the muscularis propria in all three pigs. The intensity of staining increased with increasing luminal diameter. These findings were similar in both the stented and non-stented ureters.

Conclusion: Our findings suggest that ureteral stenting induces a systemic response causing dilatation in the contralateral non-stented ureter and the Gli-1 protein may potentially be involved in this dilatation cascade.

MP-10.05

The Risk Factors Associated with Forgotten Double-J Ureteric Stents– A Nationwide Population-Based Study

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Introduction and Objective: Indwelled double-J ureteric stents (DJs) have considerable adverse effects, including forgotten DJs, on which profound encrustation make the removal very difficult. Since the placement and removal of the DJs are not necessarily performed in the same hospital, it is hard to study these patients with forgotten DJs in a single institute. In the present study, we try to identify the patients who are at risk to have forgotten DJs by using a nationwide population-based database.

Materials and Methods: 2000 Longitudinal Health Insurance Dataset (2000LHID), one of the datasets of National Health Insurance Database of Taiwan, collects all the medical insurance information from one million randomly-selected residents. Patients who received DJs indwelling for any reasons from 2000 to 2013 in 2000LHID were included. Patients with forgotten DJs were defined as those who didn't have an endoscopic or open surgical procedure to remove or to replace the DJs within six months. Age at ureteric stenting, sex, the service specialties when the stenting occurred, frequency of emergency room visit and abdominal plain x-ray filming after ureteric stenting, and usage of alpha blocker more than seven days after ureteric stenting, were compared between the groups with and without forgotten DJs. T test and Pearson's chi-square test were applied for statistical analysis.

Results: There were 13,148 patients received DJs during the study period. Most patients (94.6%) had DJs for only once, and 692 (5.26%) had simultaneous bilateral DJs. Ninety-five (0.72%) were classified into forgotten DJs group. They were significantly the elderly (40.0% vs 20.2%, $p < 0.0001$), female (56.8% vs 36.0%, $p < 0.0001$). The forgotten DJs were prone to occur under non-urological service (67.4% vs 11.6%, $p < 0.0001$), and the patients received less abdominal plain x-ray follow-up (0.48 ± 1.03 times vs 1.20±1.43 times, $p < 0.0001$). Usage of alpha blocker were associated with less forgotten DJs (8.4% vs 16.7%, $p= 0.031$).

Conclusion: Older female patients who received DJs under non-urological service without frequent abdominal plain x-ray follow-up and medication may be at risk to have their DJs forgotten inside their body. We should pay more attention to this subgroup in our clinical practice.

MP-10.06

An Observational 1-Year Follow-Up Study About Perioperative Renal Functional Outcomes Assessed by 99mtc-DTPA Scintigraphy After Minimally Invasive Kidney Stone Surgery

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Introduction and Objective: We evaluated the comparative effect of miniaturized percutaneous nephrolithotomy (mini-PCNL) and retrograde intrarenal surgery (RIRS) on perioperative kidney function using diethylenetriamine penta-acetic acid (^{99m}Tc-DTPA) scintigraphy and identified significant predictors associated with deterioration or amelioration of renal function after surgery.

Materials and Methods: All 70 patients who underwent mini-PCNL or RIRS between 2012 and 2016 were monitored by ^{99m}Tc-DTPA scintigraphy preoperatively, and 3 to 12 months postoperatively in abnormal renal function patients. Logistic regression analyses were conducted to estimate the predictors of aggravated renal dysfunction and improvement.

Results: The difference in preoperative renal function between the contralateral and the operative sides was > 10% in 57 patients (81.4%). Among those abnormal group, 40 (70.2%), 10 (17.5%), and 7 (12.3%) patients showed stability, deterioration, and improvement at postoperative 1 year, respectively. Functional changes did not differ according to the type of surgery. High level of preoperative serum creatinine (P =0.060; OR= 10.822; 95% CI, 0.903-129.669) and a history of previous stone procedures (P =0.051; OR= 29.621; 95% CI, 1.141-768.721) showed borderline significance for prediction of renal function deterioration.

Conclusion: Minimally invasive surgery showed favorable outcomes involving renal function during 1-year follow-up period.

MP-10.07

Feasibility of Surgery for Large Stones in Elderly Patients with a Solitary Kidney

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Introduction and Objective: To evaluate the clinical efficacy and safety of retrograde intrarenal surgery (RIRS) or percutaneous nephrolithotomy (PCNL) in the treatment for large renal stones in elderly patients with a solitary kidney.

Materials and Methods: In this study, 43 patients 60 years who had only a solitary kidney enrolled between January 2010 and December 2016 were retrospectively evaluated. All of them underwent RIRS or PCNL for renal stones larger than 2cm. Eleven patients treated with PCNL were compared to thirty-one patients treated with RIRS by assessing the stone-free rate, complication rate.

Results: The initial and final stone-free rates of the PCNL group were significantly higher than that of the RIRS group (63.6% vs 48.4%, $P < 0.001$), while the final stone-free rates of the RIRS group were statistically higher than that of the PCNL group (72.7% vs 83.9%, $P < 0.05$). Furthermore, complication rate of RIRS was lower than that of PCNL (6.5% vs 63.6%, $P < 0.001$).

Conclusion: RIRS, rather than PCNL, is a safer choice with fewer complications and acceptable final stone-free rate.

MP-10.08

Germline DNA Damage Repair Gene Mutation Landscape and Clinical Relevance in Early-Onset Upper Tract Urothelial Carcinoma Patients

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Introduction and Objective: Patients with germline DNA damage repair (DDR) gene mutations can benefit from platinum-based chemotherapy, poly (ADP-ribose) polymerase (PARP) inhibitors and PD-1/PD-L1 blockade in multi-cancers. Identification of upper tract urothelial carcinoma (UTUC) patients with germline DDR gene alterations is important for hereditary cancer screening, genetic counseling and specific therapy guiding. Early-onset is an important indicator of heredity across various cancers. We aim to explore DDR gene mutation landscape and clinical relevance in early-onset UTUC patients.

Materials and Methods: We consecutively enrolled 75 early-onset (<60 years at diagnosis) UTUC patients with no previous history of bladder cancer, from 2008 to 2015. These patients all received surgeries in Fudan University Shanghai Cancer Center. Whole-exome sequencing was used to achieve germline variant data. We focused on 230 DDR genes for germline mutational analysis. Pathogenic variant filtering was performed using a refined criterion based on American College of Medical Genetics (ACMG) guideline.

Results: Twenty-one DDR germline pathogenic variants were detected in 19 of 75 (25.3%) early-onset UTUC patients. Six germline pathogenic variants belonged to homologous recombination genes, 6 belonged to mismatch repair genes while remaining 9 variants belonged to other DDR pathway genes. Pathogenic mutation carrier rate in pelvic cancer patients (24.1%) was similar to ureteral cancer patients (28.6%), higher than previously reported rate (6.7%) in early-onset bladder cancer patients. Logistic regression analysis revealed that germline DDR pathogenic mutation carrier was more likely to have high T stage (OR: 5.969, 95% CI: 1.200 – 29.698) and N stage (OR: 6.662, 95% CI: 1.044 – 42.500). In addition, 5 and 7 patients were found to carry Lynch-associated damaging variants and variants of unknown significance (VUS), respectively.

Conclusion: In early-onset UTUC patients, germline genetic testing identified 1/4 cases carried pathogenic germline mutations in DDR genes. This emphasized the importance of screening these early-onset patients, especially cases with higher T or N stage. Germline DDR mutation screening represents an achievable aspect of personalized medicine that can help genetic counseling and guide patient management.

MP-10.09

Sunitinib-Induced Hypertension as Biomarkers of Efficacy in Patients with Metastatic Renal Cell Carcinoma

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Introduction and Objective: To investigate the relationship between sunitinib-induced hypertension and efficacy in patients with metastatic renal cell carcinoma.

Materials and Methods: The clinical data of 65 patients with metastatic renal cell carcinoma treated with sunitinib were collected retrospectively from January 2009 to June 2016. All patients received the standard dosing schedule of sunitinib: 50 mg daily for 4 weeks on and 2 weeks off. The efficacy was assessed by CT examination every 2 cycles and blood pressure was measured on days 1 and 28 of each cycle of treatment.

Results: Patients were divided into hypertension group (n = 30) and normal blood pressure group (n = 35) according to adverse events of hypertension during patients treated with sunitinib. There was no significant difference in baseline characteristics between the two groups. Sunitinib-induced hypertension often occurred during the first or second cycle of treatment. It was occurred earlier in the increasing of systolic blood pressure (median time: cycle 1, range: 1 to 9 cycle) compared with the increasing of diastolic blood pressure (median time: cycle 2, range: 1 to 11 cycle). At 12-month follow-up, the objective response rate was significantly higher in the hypertensive group (17 patients, 56.7%) than that in the normal blood pressure group (10 patients, 28.6%) (P= 0.016). Through subgroup analysis, there was significant statistical difference between systolic hypertension group or diastolic hypertension group and normal blood pressure group (systolic pressure comparison: P= 0.039; diastolic pressure comparison: P= 0.038). During long-term follow-up, the mean progression-free survival time in the hypertensive group was significantly longer than in the normal blood pressure group (13.4 vs. 8.7 months, P= 0.002).

Conclusion: Patients with sunitinib-induced hypertension achieve better tumor control and longer progression-free survival, which is suitable for predicting the efficacy of treatment.

MP-10.10

Neoadjuvant Targeted Therapy in Patients with Localized RCC

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Introduction and Objective: The aim of the study was to evaluate efficacy of neoadjuvant TT in terms of increasing possibility of nephron-sparing surgery (NSS) for localized RCC.

Materials and Methods: Results of prospective randomized study starting from 2015 and including 118 cases of localized RCC. TT group included 58 (49,2%) patients treated with 2 cycles of Pazopanib (800 mg) preoperative; control group included 60 (50,8%) patients which underwent only surgery. The groups were comparable by age, sex, tumor size, body mass index, hemoglobin and creatinine levels, total GFR (p> 0.05). All patient underwent complex clinical examination, that included evaluation of RECITS 1.1 tumor regression and remaining functional parenchyma volume (RFPV) according to NCIU–scoring system.

Results: Indications to neoadjuvant TT were: imperative in 12 cases and elective in 46. Tumor location: 34 (58.6%) – central with size larger than 40 mm and 24 (41.4%) patients with polar or laterally located RCC spreading to renal hilum with RFPV over 50%. The use of TT lead to average decrease in tumor size from (M ±SD (95% CI)) 60.8 ±19.7 (55.7-66) to 48.5 ±16,4 (44.2-52.8) mm (t-test; p <0.001). Neoadjuvant TT prompted RCC regression in 50 (86.3%) cases, with average decrease up to 2.,5 ±14.3 (16.8-24.3) %. In 8 (13.8%) patient's tumor size didn't change. There were no cases of progression during TT. In 44 (75.9%) tumors regression level reached 30%, in other 14 (24.1%) – was over 30%, with maximum regression at 60%. There was found no dependence between tumor size and regression level (ANOVA, η^2 =0.01 with power at 0.1 (p = 0.72)). The effects of TT prompted to proceed to partial nephrectomy in 53 cases (91.4%) over only 22 (33.3%) in surgery group (x^2 = 42.1; p < 0,0001). Total GFR level 3 months after surgery didn't change in TT group and equaled M+m (95% CI) 78+17 (61-95) ml/min/1.73m^2 and decreased in control group to 61 +12 (50-72) mL/min/1.73m^2 (Mann-Whitney U test; p <0.001).

Conclusion: The use of neoadjuvant TT in patients with localized RCC showed average tumor size regression of 20.5 ±14.3 (16.8–24.3)%, that enabled kidney preservation at tumor size 60.7 ±19.8 mm in 91.4% (x2= 42.1; p <0,0001). Positive treatment strategy results suggest applicability of neoadjuvant TT use in localized RCC management.

MP-10.11

The Analysis of the Adverse Events After Neoadjuvant Targeted Therapy in RCC

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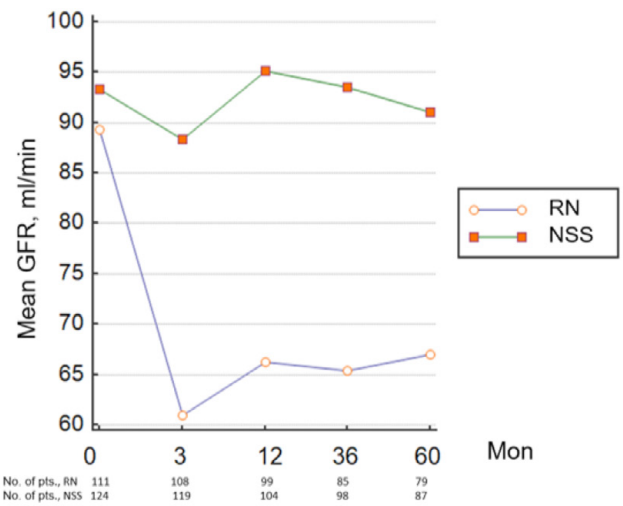
Introduction and Objective: Targeted therapy is an option for locally advanced and metastatic RCC, but the usage of the indicated treatment in patients with local disease in the neoadjuvant regimen is still controversial and poor studied. The basic principles of neoadjuvant targeted therapy for RCC is the concept of improving the safety of the procedure and improve outcomes. The aim of the study was to evaluate the factors that influence adverse events rate in adjuvant and neoadjuvant regimens of targeted therapy in patients with RCC.

Materials and Methods: In a prospective cohort study, patients with T1b-T2 tumors were divided into two groups: 1st included 58 patients with localized RCC who received neoadjuvant therapy; in 2nd-53 patients with locally advanced or metastatic RCC who received adjuvant targeted therapy. Side effects were evaluated according to CTC AE4.0.

Results: The main and control groups initially matched by sex (39/19 vs.33/20; p= 0.28, X^2= 0.3), age (55.8 ±9.2 vs. 55.3± 8.3 years; p= 0.79), ECOG-status (0.53± 0.56 vs. 0.72 ±0.57; p= 0.8), body mass index (30.9 ±6.1 vs. 28.3 ±4.5; p= 0.06). Groups differed according to the level of total GFR (88.6 ±26.1 vs. 61.4 ±19.3; p <0.004), the number of patients with CKD (4 vs.25; p <0.005) and serum creatinine blood (94.5 ±2 vs. 115 ±7.1; p <0.0026) significantly, which could affect the level of complications. With conducting TT total side effects occurred in 22 (37.9%) patients of the neoadjuvant TT group and in 32 (60.4%) of the control group (X^2=5.6; p< 0.05). The groups also differed in adverse events 3-4 degree (15.5% vs. 32.1% respectively).

MP-10.11, Figure 1.

Fig.1 - Mean estimated glomerular filtration rate as a function of time by assigned treatment. GFR = glomerular filtration rate; NSS = nephron-sparing surgery; RN = radical nephrectomy.



Conclusion: Neoadjuvant TT in patients with localized RCC allows to reduce the level of side effects from 60.4% to 37.9% compared with standard readings due to the large number functioning renal parenchyma and glomerular filtration rate (X^2= 5.6; p <0.05).

MP-10.12

Computer Generated vs Human Generated R.E.N.A.L. Nephrometry Score to Predict Surgical Outcomes in Renal Cell Carcinoma

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Introduction and Objective: The RENAL nephrometry score is associated with pathological outcomes, complication rates and survival. Despite its success, widespread uptake has been limited by interobserver variability and time investment to generate scores. We developed a computer algorithm to measure tumor parameters on CT and produce a computer generated (CG) RENAL score. We aimed to compare CG RENAL scores with human generated (HG) scores to predict presence of renal cell carcinoma (RCC) on final pathology, high tumor grade (Fuhrman 3-4), high tumor stage (pT3-4) and tumor necrosis.

Materials and Methods: Retrospective review of 544 patients undergoing nephrectomy following CT for suspected RCC at a single institution between 2010 and 2018**.** We included all patients who underwent late arterial phase CT imaging prior to nephrectomy, either partial or radical. Patients with angiomyolipoma, tumor thrombus, nephrectomy for non-oncological indications, and missing or incomplete imaging were excluded. After manually delineating tumors on CT using an internally-made application, we developed an algorithm to automatically generate each component of the RENAL score. Each tumor was also manually, independently scored by one of five medical professionals. We used to receive operating characteristic (ROC) curve analysis to quantify the discriminative ability of HG and CG RENAL scores in identifying RCC, high grade tumor, high stage disease and tumor necrosis.

Results: CT imaging was available for 195 patients. 183 (94%) had malignant tumors, including 60 (31%) with high stage and 60 (31%) with high grade disease. Interobserver agreement between CG and HG RENAL scores was significant, but slight (kappa=0.32, p<0.001). However, CG score had good discriminative ability for cancer (AUC 0.76), greater than HG (0.67). CG (0.59) and HG (0.62) scores were comparable for high grade, whilst HG score (0.80) outperformed CG (0.62) scores for high stage. HG (0.74) also outperformed CG (0.63) score for tumor necrosis.

Conclusion: CG RENAL scores demonstrate significant agreement with HG RENAL scores and have similar ability to predict clinically important pathologic outcomes. These are promising results, and, with further refinement, automated RENAL scores may be more reliable, cheaper, faster and potentially supersede human RENAL scoring in predicting post-operative outcomes.

MP-10.13

Removal of the "High" Caval Tumor Thrombi: Emphasis on the Surgical Access to the Right Atrium

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Introduction and Objective: We retrospectively evaluated our own experience of surgical treatment of renal cell carcinoma (RCC) spreading to the inferior vena cava (IVC) with the use of the liver transplantation technique for thrombectomy. Particular attention was paid to various surgical approaches to the supradiaphragmatic segment of the IVC and the right atrium through the diaphragm from the abdominal cavity.

Materials and Methods: From 2002 to 2018, ninety-six nephrectomies with removal of caval tumor thrombi in patients with RCC were performed. The tumors spread above the diaphragm in 16 (16.7%) cases, including 5 (5.2%) patients with atrial thrombi. In 8 cases the upper end of the thrombus was located between the mouths of the major hepatic veins and the diaphragm. All patients underwent piggy-back liver mobilization, surgical access to the supradiaphragmatic IVC from the abdominal cavity, and manual repositioning of the thrombus apex below the diaphragm (milking maneuver). Extracorporeal circulation was performed in none of the cases.

Results: The extrapericardial approach was sufficient for the tumor thrombus apex control in 22 of 24 patients, including 3 cases of the atrial thrombi. The isolation of the supradiaphragmatic IVC and cavoatrial junction most easily and safely was performed through T-shaped diaphragmotomy. The transpericardial access was necessary only in 2 patients with large atrial thrombi (intra-atrial part up to 3.5 cm). During the access stage, intraoperative complications in the entire series were registered in 22.4% cases. They included damage to phrenic veins (45.8%), major hepatic veins (20.8%), IVC (12.5%) and the liver (12.5%). However, the average volume of blood loss due to the trauma of these structures did not exceed 100 ml. Specific complications associated with the access to the supradiaphragmatic IVC and the right atrium were detected in none of the cases.

Conclusion: In our opinion, surgical approaches to the supradiaphragmatic IVC and the right atrium from the abdominal cavity, with or without opening the pericardium, are safe and easy-to-perform. In situations when the atrial part of a thrombus exceeds 1.5 cm, it is necessary to use the extrapericardial access with complete mobilization of the IVC at the level of the diaphragm.

MP-10.14

Role of Nephrometry Scores in Predicting Conversion of Robotic-Assisted Partial Nephrectomy: A Single Center Analysis

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Introduction and Objective: Several tools have been developed to help plan surgery and counsel patients regarding partial nephrectomies. Nephrometry scores have been utilized to assess risk of complications, but their utility to predict conversion to either open partial (OPN) or laparoscopic radical nephrectomy (LRN) has been poorly studied. Our goal is to evaluate the role of nephrometry parameters in predicting robotic-assisted partial nephrectomies (RAPN) that required conversion.

Materials and methods: We retrospectively collected data on patients undergoing RAPN for kidney mass in our institution between September 2007 and August 2017. Pre-operative imaging was reviewed to assess R.E.N.A.L. and PADUA scores. Patients with multiple masses (n= 24) were excluded as nephrometry scores are not validated in this setting.

Results: There were 408 patients scheduled for RAPN, of which 21 were excluded as pre-operative imaging was currently unavailable. We also excluded cases where intra-operative ultrasound made the surgeon change to LRP even before attempting RAPN (n= 33); these had a median RENAL score of 9 and PADUA score of 11. Among the 354 study patients, RAPN was converted to a different technique in 34 cases (9.6%): 20 to OPN (5.6%) and 14 to LRN (4.0%). Previous abdominal surgery was a risk factor for conversion (17.3% vs. 7.5%, p= 0.011), including on multivariate analysis (p= 0.007; OR 3.7, 95%CI 1.4-9.3). We found no correlation between conversion and gender, BMI, antiplatelet/anticoagulant use, pre-operative diabetes, hypertension, or GFR below 60 mL/min. Adherent perinephric fat (n= 13) and gastrointestinal system factors (n= 6, all converted to OPN) were the most common reasons for conversion. Tumor size was larger in converted cases (35 vs. 25 mm, p= 0.001). Converted cases had higher R.E.N.A.L. (p= 0.001) and PADUA scores (p <0.001), both on univariate and multivariate analysis. When examining individual nephrometry parameters, only nearness to the collecting system (p <0.001) and renal sinus involvement (p <0.001) predicted conversion.

Conclusion: Nephrometry scores can be used to risk stratify and appropriately counsel patients regarding the difficulty of completing a RAPN with differing importance amongst individual parameters. Other factors, such as history of previous abdominal surgery, should be taken in account when planning the surgery.

MP-10.15

Surgical Resection of Metastasis and Survival in mRCC Patients Using Real-World Canadian Data

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Introduction and Objective: Complete and incomplete metastasectomy can potentially offer prolonged cancer control or symptoms palliation. The objective of this studyis to describe the utilization of complete and incomplete metastasectomy in contemporary practice using real-world data from Canadian hospital centers and to estimate the impact on overall survival according to the site of metastasectomy.

Materials and Methods: The CKCis database was used to select patients who were diagnosed with metastatic RCC (mRCC) between January 2011 and December 2018. Study cohort includes patients diagnosed with mRCC and having received complete or incomplete metastasectomy during the study period. Overall survival (OS) was calculated from time of 1st-metastasectomy until death from any cause using Kaplan-Meier (KM) curves. A Cox proportional hazards model was used to identify the potential predictors of survival while adjusting for potential confounding variables.

Results: Overall, 406 patients were included in the analysis, with 65% (n= 265) having received complete metastasectomy. Patients undergoing incomplete metastasectomy had more synchronous disease (43.9% vs. 25.7%, p <0.001), were treated more frequently with targeted therapy prior to metastasectomy (75% vs. 42.7%, p <0.0001) and had more bone metastasectomy (32.6% vs. 11.7%, p <0.0001). The 5-year overall survival of patients receiving complete and incomplete metastasectomy was 73% and 35%, respectively (p <0.001). The 5-year OS of patients undergoing metastasectomy in different organs was the following: lung (84.3%), adrenal glands (73.4%), bones (42.6%), brain (36.9%) and liver (33.3%). Having brain metastasis (HR: 2.47, 95%CI: 0.28-17.73) and targeted treatment before the metastasectomy (HR: 6.65, 95%CI: 2.94-15.04) were associated with higher risk of mortality. Patients who were not treated with targeted treatment at the time of complete metastasectomy had a longer survival than patients who were treated with targeted treatment NR (95%CI: 80-NR) months vs. 42 months (95%CI 26-NR), p <0.0001.

Conclusion: As expected, patients undergoing complete metastasectomy have better prognosis of survival than patient undergoing incomplete metastasectomy. Independent of the type of metastasectomy (complete vs incomplete), sites of metastasectomy, such as brain, liver or bones metastasis, were associated with a poorer survival.

MP-10.16

Utility of Pre-Operative Lymphocyte-Monocyte Ratio in Prediction of Oncological Outcomes in Non-Metastatic Renal Cell Carcinoma

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Introduction and Objective: The association between inflammation and carcinogenesis has long been studied, and inflammatory markers including the Lymphocyte-Monocyte ratio (LMR) have been shown to predict oncological outcomes in several solid malignancies. We aimed to critically evaluate the utility of LMR in the prognostication of oncologic outcomes for localized post-nephrectomy renal cell carcinoma (RCC), for both clear cell and papillary subtypes.

Materials and Methods: A total of 780 binephric patients from Singapore General Hospital with localized unilateral RCC treated with partial/radical nephrectomy from the years 2000 to 2015 were retrospectively analysed. Haematological values were collected prior to nephrectomy for calculation of LMR, and the optimal cut-off for LMR was determined using X-tile 3.6.1 software (Yale University, New Haven, CT, USA). In order to analyse the prognostic significance of LMR, both univariate and multivariate Cox regression models were evaluated, with primary outcomes of overall survival (OS) and cancer-specific survival (CSS).

Results: A total of 687 (88.1%) patients had clear cell RCC (cRCC) and 93 (11.9%) patients had papillary RCC (pRCC). For cRCC, there were a total of 67 (9.8%) cancer-specific deaths over a median follow-up of 76.3 (1–209) months, while for pRCC, 18 (19.4%) cancer-specific deaths were seen over a median follow-up of 58.4 (6–189) months. Mean LMR was 4.1 (±3.7) and 3.7 (±3.2) for cRCC and pRCC respectively. The optimum cut-off for LMR was determined to be 2.4. On multivariate analysis, a low LMR < 2.4 was a significant predictor for both OS (HR 1.84, 95% CI 1.21-2.80, p=0.004) and CSS (HR 3.56, 95% CI 1.16-3.69, p=0.013) in cRCC. In contrast, LMR was not robust in prediction of OS and CSS for pRCC patients (HR 1.52, 95% CI 0.72-3.20, p=0.27, and HR 1.04, 95% CI 0.37-2.91, p=0.95 respectively). In addition, for cRCC, a low LMR was significantly associated with worse pathological features, including pathological T-stage, Fuhrman grade, and tumour necrosis.

Conclusion: For localized post-nephrectomy RCC patients, LMR is a useful predictor for 5-year oncologic outcomes of OS and CSS, but its use is mainly limited to the clear cell subtype.

Moderated ePosters Session 11 Bladder Cancer

Sunday, October 20, 2019
1400–1530

MP-11.01

Preventative Effect of Omega-3 Polyunsaturated Fatty Acids (n-3 PUFAs) Against Induction of Bladder Cancer (BC) in a Rat Model

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Introduction and Objective: The available data in urological literature regarding the role of n-3 PUFAs in the field of BC chemo-prevention are scarce and conflicting. The present work aims to test the chemo-preventative effects of n-3 PUFAs against BC induction in a rat model and the potential antineoplastic mechanisms of the drug.

Materials and Methods: Ninety male Fisher rats were divided into 3 groups during a 22-week protocol: group 1 (control), group 2 (Placebo+ N-butyl-N-4-hydroxybutyl nitrosamine (BBN) for induction of BC) and group 3 received n-3 PUFAs at a daily dose of 1200 mg/kg/day + BBN. At the end, blood samples and bladder tissues were collected and checked for the presence of malignancy, markers of angiogenesis (CD34 expression and VEGF relative gene expression), inflammation (IL-6), proliferation (KI-67 expressions), redox status (serum MDA) and epigenetic control (miRNA-145 level).**Results**: Survival was [30/30 rats (100%) ,18/30 (60%) and 26/30(86.6%)] for groups 1, 2 and 3 respectively. There was significant weight loss among rats in group 2 (carcinogen) when compared with n-3PUFAs rats (group 3; P <0.001). The frequency of neoplastic and paraneoplastic lesions was less in group 3 when compared with group 2. Staining for CD34 expression and KI-67 were less in group 3 when compared with group 2. Moreover, there were significant up regulation of miRNA-145 expression (tumor suppressor) in group 3 when compared with group 2. Finally, there were significant lower VEGF, IL-6 and serum MDA levels in group 3 when compared with the group 2 (Table 1). We also managed to prove that our modification of the dose was not harmful and tolerated by rats.

Conclusion: The n-3 PUFAs at our modified dose were able to inhibit tumor growth in the BBN induced rat model of BC, which might be due to anti-inflammatory, antioxidant, anti-proliferative, and anti-angiogenic properties together with epigenetic control.

MP-11.02

NMIBT Technological Advancements in Optical Diagnostic and Tumor Ablation Put to the Test of a 5 Years' Follow-Up – NBI–Bipolar Plasma Vaporization Hybrid Approach Versus the Standard Management Protocol Within a Matched-Paired, Index-Control Cohort Study

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Introduction and Objective: A combined diagnostic (white light cystoscopy-WLC and narrow band imaging-NBI) and treatment (bipolar plasma vaporization-BPV) approach were compared to the standard protocol (WLC and monopolar transurethral resection of bladder tumors-TURBT) in large non-muscle invasive bladder tumors (NMIBT).

Materials and Methods: A matched-paired, index-control, cohort study included 260 patients with at least 1 bladder tumor over 3 cm. Index patients (n=130) were prospectively enrolled and underwent standard and NBI cystoscopy, followed by BPV (tumor staging and complete removal confirmation by using bipolar resection). In the retrospectively selected control cases (n=130), WLC and TURBT were solely applied. The matched pairs were determined based on the similar recurrence and progression risk categories according to the EORTC risk classification. Standard Re-TUR was performed, followed by 1 year BCG immunotherapy. The follow-up protocol included urinary cytology and WLC, performed every 3 months for a period of 2 years and every 6 months for the next 3 years.

Results: BPV emphasized significantly reduced obturator nerve stimulation rate (2.7% versus 18.4%), bladder wall perforation (0.9% versus 6.4%), mean hemoglobin level drop (0.47 g/dl versus 0.96 g/dl), catheterization period (48.6 hours versus 74.1 hours) and hospital stay (2.9 days versus 4.2 days). NBI cystoscopy was characterized by significantly improved tumors' detection rates (CIS-95.3% versus 65.1%; pTa-93.3% versus 82.2%; overall NMIBT-95% versus 84.2%). NBI additional lesions' cases were significantly more numerous regardless of tumor stage (pTa-24.1% versus 10.3%; pT1-33.7% versus 7.2%; NMIBT-31.1% versus 8%). Significantly lower Re-TUR overall (6.3% versus 17.4%) and primary site (3.6% versus 12.8%) residual tumors' rates were determined secondary to NBI-BPV. The 1 (7.2% versus 18.3%), 2 (12.4% ver-

MP-11.01, Table 1. Effects of n-3 PUFAS

	Group 1 (N=30)	Group 2 (N=18)	Group 3 (N=26)	P1	P2
No. of rats with paraneoplastic changes [n/n (%)]					
Rat with no changes	30/30(100)	0	7/26(26.9)	<0.001	0.031
Rats with changes including (hyperplasia-dysplasia –squamous metaplasia or papillary hyperplasia	0	18/18(100)	19/26(7.1)		
No. of rats with neoplastic changes [n/n (%)]					
No malignancy	30/30(100)	0	24/26(92.3)	<0.001	<0.001
Squamous cell carcinoma	0	5/18(27.8)	1/26(3.8)		
Transitional cell carcinoma	0	13/18(72.2)	1/26(3.8)		
CD-34 Expression (No. of rats& %)					
G1= minimal	21(70)	0	8(30)	0.015	< 0.001
G2=mild	6(20)	1(5.6)	7(26.9)		
G3=mild to moderate	3(10)	1(5.6)	10(38.5)		
G4=moderate	0	6(33.3)	1(3.8)		
G5=moderate to marked	0	10(55.6)	0		
KI-67 Expression (No. of rats& %)					
Low < 20%	30(100)	2(11.2)	21(80.8)	0.048	< 0.001
High > 20%	0	16(88.6)	5(19.2)		
Molecular and biochemical studies					
miRNA 145 expression level median(range)	12.81 (7.54-14.34)	0.071 (0.025-0.53)	5.9 (4.64-10.320)	< 0.001	<0.001
VEGF relative gene expression Mean ± SD	0.46± 0.09	5.88 ± 0.56	2.67± 0.31	< 0.001	<0.001
IL-6 relative gene expression Mean ± SD	0.76± 0.046	4.07 ± 0.38	1.49± 0.39	< 0.001	<0.001
Serum MDA level(nmol/mL) Mean ± SD	3.43±0.36	10.45±0.87	2.92±0.25	<0.001	<0.001

P1= Group1 vs group2 Vs group 3 P2=group 2 vs group 3

sus 25.8%), 3 (16.1% versus 30.9%), 4 (19.7% versus 34.5%) and 5 (22.9% versus 38.7%) years' recurrence rates were significantly reduced in the NBI-BPV series. Differences between study arms gradually lowered and lost statistical significance after 2 years.

Conclusion: BPV emphasized superior surgical safety, decreased bleeding risks and faster postoperative recovery. NBI cystoscopy significantly improved the NMIBT diagnostic accuracy. The hybrid approach determined a significant reduction in tumor recurrence rates up to 5 years of follow-up, while differences between methods decreased in time.

MP-11.03

ADNP-Mediated Cell Cycle Promotes Bladder Cancer Proliferation Via AKT Pathway

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Introduction and Objective: Bladder cancer (BC), generally urothelial carcinoma, is a clinically and molecularly heterogeneous disease. Patients with BC have poor outcomes due to lack of effective molecular targets for therapy. Activity-dependent neuroprotective protein (ADNP), which is involved in embryo formation and neurodevelopment, has been shown to be overexpressed in several human cancer types. Nevertheless, the role of ADNP in the progression of bladder cancer (BC) remains unknown. The present study aimed to identify ADNP as a novel mitochondrial target in BC cells, suggesting a potential role for AKT-MDM2-p53 signaling in human bladder cancer.

Materials and Methods: The effects of ADNP in human bladder cancer identified by bioinformatic analysis based on TCGA database. ADNP expression in tumor samples was examined by qRT-PCR, immunoblotting and immunohistochemistry. The patients' clinical data were downloaded from electronic medical records (system). The effects of cell proliferation on ADNP knock-down as well as overexpression were assessed by CCK-8 assays and colony formation assay. Cell cycle distribution tested by FACS and immunoblotting. The tumorigenic effect(s) of ADNP knockdown was assessed using a mouse orthotopic xenograft model. ADNP-related downstream pathways confirmed by immunoblotting.

Results: ADNP expression was higher in tumor tissue compared to it in adjacent normal tissue in patients with BC. Immunohistochemical analysis of 221 paraffin-embedded archived BC tissues showed that high ADNP expression was significantly associated with nuclear grade, pathological T stage and pathological N stage. Univariate and multivariate analysis indicated that high ADNP expression was an independent prognostic factor for poorer overall survival and progression-free survival in the entire cohort. ADNP overexpressing significantly promoted cell proliferation in vitro, as well as tumor growth in vivo. Conversely, ADNP knockdown exhibited the opposite effects. The flow Cytometry assays showed that ADNP fostered cell cycle progression at G1–S transition. Moreover, we also demonstrated that ADNP-induced the promotion of G1-S cell cycle transition was mediated by activation of AKT-MDM2-p53 signaling at the molecular level.

Conclusion: ADNP may function as a risk factor for predicting the clinical outcomes of BC patients, as well as a potential therapeutic target for BC.

MP-11.04

Examination of Diagnostic Accuracy of UroVysion Fluorescence in Situ Hybridization for Bladder Cancer in a Single Community of Japanese Hospital Patients

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Introduction and Objective: UroVysion (Abbott Molecular, Inc., Illinois, USA) is based on multicolor fluorescence in situ hybridization (FISH). It has been used successfully in the USA following its Food and Drug Administration approval in 2001. However, the technology was not approved for use in Japan until 2017. Cystoscopy and urine cytology are the most frequently used examinations to detect bladder cancer in Japan, and there are only a few reports regarding the performance of UroVysion. Therefore, the aim of this study is to examine the diagnostic accuracy of UroVysion FISH in Japanese patients whose tumors are detected by cystoscopy before transurethral resection of bladder tumor (TURBT).

Materials and Methods: From April 2018 to July 2018, a total of 40 patients who were diagnosed as having bladder tumors by cystoscopy, and therefore underwent TURBT were registered in this study. One day before TURBT, urine cytology and UroVysion FISH were used in order to compare the accuracy with which they could detect bladder carcinoma, as confirmed by pathological results of TURBT.

Results: The pathological results of TURBT showed urothelial carcinoma in 33 cases. Urine cytology showed positive results for 0 cases (0%), suspicious results for 10 cases (30.3%), and negative results for 23 cases (69.7%). On the other hand, UroVysion FISH indicated 9 positive cases (27.3%) and 24 negative cases (72.7%). There were 19 cases of urothelial carcinoma (57.6%) that were not detected by either method.

Conclusion: We conclude that UroVysion FISH alone is insufficient to detect bladder cancer and that cystoscopy is essential for the optimum detection or follow up of bladder cancer cases in our hospital.

MP-11.05

Risk for Venous Thromboembolic Events in Patients with Advanced Urinary Tract Cancer Treated with 1st-LINE Chemotherapy

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Introduction and Objective: Venous thromboembolism (VTE) is a frequent complication among cancer patients. Risk Assessment Models (RAMs) for Cancer-associated Thrombosis (CAT) have been proposed. However, advanced urinary tract cancer (aUTC) was not adequately represented in these models. We studied the incidence of VTEs, risk factors and the applicability of recently described RAMs.

Materials and Methods: 354 patients with aUTC, treated with chemotherapy between 4/1995 and 9/2015 in a single institution were analyzed. All patients consented to the use of their medical details.

Results: 96% received cisplatin or carboplatin-based 1st-line chemotherapy. 32 patients (9%) suffered VTEs within a median time of 3.1 months from the start of 1st-line chemotherapy. The cumulative and 6-month incidence were 10.4% (95% confidence intervals [CI]: 7.3-14.2) and 7.5% (95% CI: 5-10.7), respectively. No significant association of the Khorana risk score (KRS) and the COMPASS RAMs with the incidence of VTEs was observed. History of previous vascular event (VTE, peripheral artery embolism, ischaemic stroke, coronary event) was identified as the only independent risk factor for the development of VTE. Patients with a history of vascular event had a 30.2% (95% CI: 14.3-47.9) cumulative incidence compared with 8.5% (95% CI: 5.6-12.2) of those who did not. The inclusion of this factor in the KRS improved the discriminatory ability of the latter.

Conclusion: Development of tumor-specific algorithms for the risk of vascular events is supported by our results. Patients with aUTC and a history of VE have a high risk for VTE development. The role of prophylaxis in this group should be prospectively studied.

MP-11.06

RLC-Score (R-Status, Lymphovascular Invasion, C-Reactive Protein) Predicts Survival Following Radical Cystectomy for Muscle-Invasive Bladder Cancer

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Introduction and Objective: The TNR-C score of Gakis et al. correlates with cancer specific survival (CSS) in patients with bladder cancer (BCa) after a radical cystectomy (RC). The aims of our retrospective single center study were to externally validate the TNR-C score on our RC cohort and to develop our

own outcome score for muscle-invasive bladder cancer (MIBC) patients undergoing RC.

Materials and Methods: Initially, 254 patients who underwent RC at Medical School Hannover between 1996-2007 were reviewed. Clinicopathologic parameters assessed included age, gender, co-morbidities, pre-/postoperative serum levels (CRP, leucocytes, haemoglobin, and creatinine), urinary diversion, tumour grading, tumour staging, lymph node status, lymph node density (LND), lymphovascular invasion, vascular invasion, tumour necrosis, concomitant CIS, number of tumours, synchronous/metachronous metastases, and resection margin status. For outcome, overall survival (OS) was assessed. Chi-square test was used for univariate analyses and Cox regression for multivariate analyses. Kaplan-Meier plots and log-rank test were used for survival analyses.

Results: Single parameters of the TNR-C-score like T-stage (p= 0.012) and R-status (p= 0.002) were independent prognostic parameters regarding overall survival (OS). The univariate analysis of our RLC-score showed a significant correlation of T-stage (>pT2, p= 0.001), R-status (p<0.001), lymphovascular invasion (LVI, p= 0.011) and preoperative CRP level (p= 0.02). The multivariate analysis under exclusion of lymph node (LN) positive and metastasized patients showed a significant correlation of R-status (p<0,001), LVI (p= 0.021) and preoperatively elevated CRP level >5 mg/L (p= 0,008) with the OS. Median OS in the low risk, intermediate risk, and high-risk group was 62, 22 and 6.5 months, respectively. The AUC of the ROC curve for the RLC-Score is 0.752.

Conclusion: The RLC-score identifies BCa patients after RC with a higher risk for disease progression and therefore a reduced OS. The RLC score now needs a further validation itself. Overall, our study supports the role of CRP in prognostic score models regarding UCC although there is a need for prospective trials.

MP-11.07

Comparing Costs of Radical Cystectomy Versus Trimodal Therapy for Patients Diagnosed with Localized Muscle-Invasive Bladder Cancer

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Introduction and Objective: Earlier studies on the cost of muscle-invasive bladder cancer treatments lack granularity and are limited to 180 days. The objective of this study was to compare the one-year costs associated with trimodal therapy versus radical cystectomy, accounting for survival and intensity effects on total costs.

Materials and Methods: Design: A cohort study used the Surveillance, Epidemiology, and End Results (SEER)-Medicare database. Data analysis was performed from March 5, 2018 through December 4, 2018. Setting: Population-based (United States). Participants: A total of 2,963 patients aged 66-85 years diagnosed with clinical stage T2-4a muscle-invasive bladder cancer from January 1, 2002 through December 31, 2011. Main Outcomes and Measures: Total Medicare costs within one year of diagnosis following radical cystectomy versus trimodal therapy were compared using inverse probability of treatment-weighted (IPTW) propensity score models, which included a two-part estimator to account for intrinsic selection bias.

Results: Median costs were significantly higher for trimodal therapy than radical cystectomy in 90 days ($83,754 vs. $68,692; median difference $11,805, 95% CI $7,745 to $15,864), 180 days ($187,162 vs. $109,078; median difference $62,370, 95% CI $55,581 to $69,160), and 365 days ($289,142 vs. $148,757; median difference $109,027, 95% CI $98,692 to $119,363), respectively. Outpatient care, radiology, medication expenses and pathology/laboratory costs contributed largely to the higher costs associated with trimodal therapy. On IPTW-adjusted analyses, patients undergoing trimodal therapy had $129,854 (95% CI $115,793-$145,299) higher costs compared with radical cystectomy one year after diagnosis.

Conclusion: Compared to radical cystectomy, trimodal therapy was associated with higher costs among patients with muscle-invasive bladder cancer. Extrapolating cost figures resulted in nationwide excess spending of $444 million for trimodal therapy compared with radical cystectomy for patients diagnosed in 2017.

MP-11.08

Development of a Multigene Biomarker Panel for the Detection of Bladder Cancer

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Introduction and Objective: Current standard methods used to detect and monitor bladder cancer are invasive or have low sensitivity. We developed a non-invasive, fast molecular diagnostic test, based on the gene expression patterns of urine, for bladder cancer detection with better sensitivity than NMP22 and urine cytology while maintaining adequate specificity.

Materials and Methods: We performed bioinformatics analysis on the gene chip information and clinical pathology information contained in the data set GSE31189 in the comprehensive database of gene expression (GEO DATABASE), and performed gene transcriptome on the urine of 52 bladder cancer patients and 40 control subjects. We further enrolled 63 bladder cancer patients and 44 controls into a training set to construct a classification model. Thirty-two genes were screened out from 75 genes as a group of bladder cancer urine molecular markers. Finally, 214 voided urine samples including 121 cases of bladder cancer, 93 cases of control were obtained to verify this multigene panel. The sensitivity and specificity were compared to cytology and the NMP22 assays using cystoscopy as the reference.

Results: The multigene panel detected 109 of 121 urothelial carcinoma cases (90.1% sensitivity, 95% CI 83.2-95.5) compared with NMP22 ELISA (50.4%, 95% CI 36.3-65.1)and cytology (45.1%, 95% CI 38.2-59.3), including 95% of the high grade tumors and 100% of carcinoma in situ. The cut-offs for the multigene panel were prespecified to give a specificity of 91.4% (95% CI 83.3-96.2) while the specificity of cytology and NMP22 ELISA was 94.3% and 81.0%. The ROC of this multigene panel distinguished between bladder cancer and normal controls was 0.945 (95% CI 91.4 -97.3).

Conclusion: We developed a new urine-based test that was powerful for the detection of bladder cancer. The multigene panel showed improved sensitivity for the detection of bladder urothelial carcinoma compared to the NMP22 assays and cytology and can help guide physician decision making in the management of bladder cancer. Additional evaluation in a prospective study is needed to establish the clinical usefulness of this assay.

MP-11.09

Patients Viewing Their Cystoscopy, Does It Provide Pain Relief? A Controlled Study About 67 Patients

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Introduction and Objective: Involving patients in diagnostic minimally invasive procedures as colonoscopy has been reported to ease pain and anxiety; involving patients in cystoscopy may give similar results. The objective is to compare during cystoscopy the effects of real-time visualisation with appropriate explanation with explanation alone on pain in patients who underwent ambulatory cystoscopy.

Materials and Methods: From January 2015 to March 2019, male patients, undergoing ambulatory rigid cystoscopy for the first time and accepting to watch the monitor during the procedure, were included in this study. They were randomized in two groups: Group A - they watch monitor during procedure and receive explanations; Group B - they receive explanations alone. All patients were operated for bladder carcinoma and underwent cystoscopy under local anesthesia (uretral instillation of 5 mL of Xylocain). They receive detailed explanations during the procedure. They are asked to record the pain they had experienced during the procedure on a scale of 1-10 with a visual analogue scales (VAS). Pain was significant if VAS >4.

Results: Only 67 patients were included in the study. They were 35 in group A and 32 in group B. There was no statistically epidemiological difference between the two groups. Men who were allowed to watch their rigid cystoscopy experienced significantly less pain, than those who did not (p=?0.033). Age and education level had no effect on the results. There were no complications.

Conclusion: According to the present observational study, watching the monitor during rigid cystoscopy decreases significantly pain in patients receiving explanations. Thus, men who undergo rigid cystoscopy should be offered to watch their procedure in real-time on a video screen to make it less painful.

MP-11.10

Functional Outcome After Radical Cystectomy and Orthotopic Neobladder in Women: Ten Years Later

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Introduction and Objective: Radical cystectomy (RC) and orthotopic neobladder (ONB) remain the gold standard treatment for muscle invasive bladder cancer in select cases of women. However, available data regarding the long-term functional and renal function outcome are limited. Herein, we assessed the long term functional and renal functional outcome in women who completed 10 years or more of follow up after RC and ONB.

Materials and Methods: We retrieved all dedicated electronic data of the prospectively evaluated women who underwent RC and ONB in our institute between 1995 and 2018. Those who completed 10 years of follow up were included in the study. Patients' demographics including early and late complications were retrieved. Continence status was assessed at last follow up by face to face interview. Renal function at last follow up was estimated using serum creatinine and eGFR (measured by Modification of Diet in Kidney Disease Equation).

Results: Among 394 women who underwent RC and ONB, 82 were eligible for analysis. The mean age ±SD at time of surgery was 48.1±9.8 years. The median (range) pre-operative serum creatinine was 0.8 (0.5-1.5) mg/dL and 15 (18.3%) had preoperative hydronephrosis. Eight (9.7%) had early postoperative complications including wound infection, ileus, diarrhea, pulmonary embolism, pouch-cutaneous fistula and pouch-vaginal fistula in one, one, one, one, one and three patients, respectively. Twenty-one (25.6%) developed late complications in the form of stricture uretero-ileal anastomosis, pouch stone and renal stone in 6, 9 and 6 patients. At a mean follow up ± SD of 170.2± 31.9 months, 74 (90.3%), 51 (62.2%) and 25 (30.5%) women had daytime continence, nighttime continence and significant residual urine (hypercontinence), respectively. Thirteen (15.8%) had bilateral hydronephrosis because of reflux or residual hydronephrosis with no significant decrease in kidney function and 26 (31.7%) had varying degrees of pyelonephritis. The median (range) serum creatinine at last follow up was 1 (0.5-5.3) with a significant increase compared to the preoperative values (p<0.001). The median (range) eGFR was 61 (9-135 mL/min/1.73 m2). Five (6.1%) and four (4.9%) patients had eGFR 15-29 (Grade IV CKD) and eGFR <15 (Grade V CKD), respectively.

Conclusion: Women surviving 10 years after RC and ONB have maintained accepted rates of daytime, nighttime urinary continence and hypercontinence. Reasonable renal function was maintained in the majority of cases, but with varying degrees of increase in median serum creatinine. A wide variety of late functional complication after RC and ONB is expected. Therefore, long term meticulous follow up is mandated.

MP-11.11

Overexpression of ADAMTS1 is Associated with Gemcitabine/Cisplatin Resistance and Poor Prognosis in Patients with Advanced Urothelial Carcinoma

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Introduction and Objective: The aim of this study was to evaluate the changes of gene expression after the development of acquired platinum resistance in bladder cancer cell lines and gemcitabine and cisplatin chemotherapy (GC) resistance in urothelial carcinoma (UC).

Materials and Methods: We newly established cisplatin-resistant and gemcitabine-resistant bladder cancer cell lines from T24 and UMUC3 (T24-RC, UMUC3-RC, T24-RG and UMUC3-RG). RNA was isolated from T24, T24-RC, UMUC3 and UMUC3-RC, amplified and hybridized using highly sensitive DNA chip microarrays (3D-Gene™). Tissue samples were obtained from 29 UC patients who received GC.

Results: Of 16 genes that were significantly upregulated in cisplatin-resistant cell lines, overexpression of ADAMTS1 was associated with response to GC and median cause-specific survival [ADAMTS1-positive vs -negative; 5.0 months vs 22.0 months, respectively (p= 0.005)]. Next, we knocked down ADAMTS1 using siRNA in T24-RC, UMUC3-RC, T24-RG and UMUC-RG. Cell proliferation was markedly suppressed by knocking down of ADAMTS1 in these cell lines.

Conclusion: These results suggest that ADAMTS1 plays a role in chemoresistance and malignant degeneration of urothelial cancer. It may provide optimal prognostic indicator for neoadjuvant GC.

MP-11.12

IDENTIFY: The Investigation and Detection of Urological Neoplasia in Patients Referred with Suspected Urinary Tract Cancer: A Multicentre Analysis

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Introduction and Objective: The IDENTIFY Study (Investigation and DEtection of urological Neoplasia in paTIents reFerred with suspected urinarY tract cancer) aims to determine contemporary urinary tract cancer prevalence and diagnostic test performance in patients referred to secondary care with suspected urothelial cancer.

Materials and Methods: IDENTIFY is the largest ever prospective, international, multi-centre study of patients referred to secondary care, with or without haematuria, for the investigation of suspected urinary tract cancer. Patient demographics, presenting features and diagnostic test results were recorded. Prevalence rates were calculated for each subtype of urological cancer and diagnostic test accuracies were calculated.

Results: Over 11,000 patient records were collected from 111 hospitals in 27 countries (Dec 2017 - Dec 2018). 65.5% had visible haematuria [VH], 28.9% non-visible haematuria [NVH] and 5.6% no haematuria [NH]. The prevalence of bladder cancer [BC] overall was 17.9%; (VH: 22.4%, NVH: 5.2%, NH: 30.6%). 81.9% of bladder cancers presented with VH. The prevalence of Upper tract urothelial cancer [UTUC] was 1.17% (VH: 1.60% NVH: 0.28%), renal cell carcinoma [RCC] 0.98% (VH:1.26% NVH:0.41%) and prostate cancer 1.14% (VH:1.37% NVH:0.54%). Prevalence varied significantly with age and geography. Countries with a lower healthcare access and quality index had a higher cancer detection rate. Variables significantly associated with BC included type of haematuria, age, smoking history, anticoagulation, storage urinary tract symptoms and having had >1 episode of VH. The diagnostic performance of ultrasound [US] and Computed Tomography [CT] is given in Table 1.

MP-11.12, Table 1. Test characteristics of US and CT in diagnosis of BC and UTUC for tests that were deemed adequately conducted

	Imaging modality	Sensitivity	Specificity	Positive Predictive Value	Negative Predictive Value
Bladder cancer	US	77.8% (95% CI 74.4%-81.0%)	93.5% (95% CI 92.7%-94.3%)	67.8% (95% CI 64.9%-70.5%)	96.0% (95% CI 95.5%-96.6%)
	Contrast CT	80.5% (95% CI 77.3%-83.4%)	92.3% (95% CI 91.3%-93.3%)	71.5% (95% CI 68.7%-74.1%)	95.2% (95% CI 94.4%-95.9%)
UTUC	US	42.5% (95% CI 27.0%-59.1%)	97.7% (95% CI 97.3%-98.1%)	12.7% (95% CI 12.4%-27.7%)	99.5% (95% CI 99.4%-99.7%)
	CT Urogram	95.7% (95% CI 88.0%-99.1%)	94.4% (95% CI 93.5%-95.2%)	26.8% (95% CI 24.0%-29.8%)	99.9% (95% CI 99.7%-99.97%)

Conclusion: IDENTIFY provides contemporary cancer detection rates and patient variables in a global population alongside diagnostic test performance for each cancer type. The detailed data will allow a personalised approach to haematuria investigations and improve shared decision-making by developing predictive models to optimise cancer detection. These patient-specific pathways will reduce patient and healthcare resource burdens.

MP-11.13

Poliovirus Receptor CD155 is Associated with Active CD8 T Cell Infiltration and Poor Prognosis of Bladder Cancer

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Introduction and Objective: CD155, serving as a ligand for co-stimulatory and co-inhibitory receptors of lymphocytes, is associated with tumor immune regulation. In this study, we evaluated the expression pattern and clinical relevance of CD155 in bladder cancer.

Materials and Methods: 153 patients in Fudan University Shanghai Cancer Center (FUSCC) cystectomy cohort, 406 patients in TCGA and 165 patients in a GEO dataset were included. CD155 expression was evaluated using immunohistochemistry in FUSCC cohort. T cell infiltration was evaluated using immunohistochemistry and flowcytometry. Survival analysis was conducted in muscle invasive bladder cancer (MIBC) of FUSCC (n= 108) and TCGA (n= 335) cohorts.

Results: CD155 was dominantly expressed on the membrane of tumor cells and significantly upregulated in bladder cancer compared to matched normal urothelium ($p < 0.001$ in FUSCC cohort, TCGA, and GEO dataset). Muscle invasive bladder cancer presented higher CD155 expression compared to non-invasive disease ($p < 0.001$ in GEO dataset; high expression rate, 55.00% vs 12.12% in FUSCC cohort). More CD8 T cell infiltration and checkpoint (PD-1, TIGIT) expression were observed in CD155 highly expressed tumor. In FUSCC cohort, high CD155 expression was associated with shorter overall survival (HR= 2.03, p= 0.011) and recurrence free survival (HR= 2.38, p= 0.004) in MIBC patients. In TCGA cohort, CD155 remained to be significantly correlated with shorter overall survival in Cox multivariate analysis including age and TNM stage (p= 0.009).

Conclusion: CD155 is upregulated in bladder cancer and associated poor prognosis of MIBC. CD155 may be a regulator of immune microenvironment and immune-therapeutic target for bladder cancer.

MP-11.14

Cost of Managing Metastatic Bladder Cancer with the introduction of Immunotherapies from a Canadian Healthcare Perspective

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Introduction and Objective: The development of immunotherapies (IOs) for the treatment of bladder cancer in first and second-line, namely pembrolizumab and atezolizumab, increased the economic burden of this disease. The objective was to use an economic model to compare the additional cost when IOs are included in treatment algorithm of metastatic bladder cancer.

Materials and Methods: The model evaluated overall survival (OS), progression-free survival and costs associated with each drug; adverse event (AE) treatment; monitoring; and post-progression (third-line treatment, best supportive care (BSC)). Efficacy, safety, and treatment duration were estimated from regimens'pivotal clinical trials. The model included first-line gemcitabine-cisplatin (Gem-Cis), gemcitabine- carboplatin (Gem-Carb) or IOs in Cis-ineligible patients and high PD-L1 expression, and second-line IOs, Gem-Carb, paclitaxel or docetaxel. Cost of BSC and AEs was retrieved from published Canadian studies. Sensitivity analyses were conducted to take in consideration potential rebates to IOs in hospital.

Results: The cost of treating patients with Gem-Cis in first-line was estimated to be $16,339 with 53% of cost related to the management of adverse events. When treating patients in second-line setting, the incremental survival of pembrolizumab and atezolizumab compared to paclitaxel/docetaxel were 3.3 and 4.1 months, respectively. Treatment with second-line therapy costs $64,207, $54,857, $14,119 and $14,154 for pembrolizumab, atezolizumab, paclitaxel and docetaxel, respectively. Cost of managing adverse events represented less than 1 % for IOs and 10% for paclitaxel/docetaxel. In Cis-ineligible patients, the use of IOs in first-line increased cost by $47,818 (total $72,596) vs. Gem-Carb, while improving OS by 6.6 months.

Conclusion: In a Canadian setting, inclusion of IOs for treatment of metastatic bladder cancer in first or second-line will increase treatment cost by approximately $50,000 for an incremental survival of 3 to 6 months.

Moderated Video Sessions
MVP01: Minimally Invasive Surgery

Friday, October 18, 2019
1100–1230

MVP-01.01
3D Laparoscopic Zero-Ischemia Enucleation for a Complex Renal Tumor (PADUA 10)

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Introduction and Objective: The development of minimally-invasive techniques that allow improved 3D visualization of the surgical field, as well as modern instruments, represent a step towards the broadening of the indication of partial nephrectomy to more complex tumors. Furthermore, the enucleation of renal masses has been proven to be an oncologically safe procedure, with the possibility to avoid renal ischemia. The objective of our video was to evaluate the feasibility of the 3D laparoscopic approach for the enucleation of complex renal tumors.

Materials and Methods: We present the case of a 63-year-old female patient, who was referred to our department for the incidental ultrasonographic diagnosis of a right kidney tumor. The contrast-enhanced CT identified a 40/38/31 mm right renal tumor, located in the mid-kidney, on the anterior valve, almost completely endophitic, PADUA score 10, cT1aN0M0. The patient had no significant comorbidities and the pre-operative GFR was within normal range. We proposed a 3D laparoscopic partial nephrectomy. We performed a transperitoneal approach using 4 trocars. The procedure started with the medial mobilization of the ascending colon and duodenum. The right ureter was identified, and the dissection continued cranially up to the renal pedicle. The renal artery and vein were identified and isolated with vessel loops. The Gerota fascia was incised, followed by the identification of the tumor and incision of the renal capsule circumferentially. Zero-ischemia enucleation of the tumor was performed. Renorraphy was performed in a single layer using the sliding clip technique, resorbable suture and hemostatic material.

Results: The operative time was 150 minutes and the blood loss was minimal. The lumbar drainage was removed in the first post-operative day and the patient was discharged on day 4. The pathological examination revealed the diagnosis of renal cell carcinoma, Fuhrman grade 1/ ISUP 1, with negative surgical margins.

Conclusion: The laparoscopic approach for the enucleation of highly complex renal tumors is feasible and safe in experienced centers. The enhanced 3D visualization offers the possibility to develop the avascular plane between the renal parenchyma and the tumor, while avoiding renal ischemia with the highest chance of renal function preservation.

MVP-01.02
Clampless Techniques for Robotic Management of Major Intraoperative Vascular Injury without Conversion (Report of 4 Cases)

Du S, Ma X, Zhang X, **Gu L**

Chinese PLA General Hospital, Beijing, China

Introduction and Objective: Major vascular injury is a life-threatening complication during minimally invasive surgery with a high conversion rate to open surgery. We report our clampless techniques during robotic repair of major intraoperative vascular injury without additional port and conversion.

Materials and Methods: Four cases with major intraoperative vascular injury were reviewed. Case 1 was a 32-year-old female admitted with left renal tumor and enlarged para-aortic lymph nodes. She underwent radical nephrectomy and para-aortic lymph node dissection, and a 5 mm incision of aorta injury was made. Case 2 was a 49-year-old male diagnosed with a recurrence of retroperitoneal ectopic pheochromocytoma. He underwent retroperitoneal pheochromocytoma ectomy, and multiple injuries of inferior vena cava (IVC) were made. Case 3 was a 47-year-old male admitted with left renal tumor with inferior vena cava tumor thrombus. An IVC venogram was performed preoperatively revealing an absolutely obstructed IVC and establishment of robust collateral vessels. He underwent radical nephrectomy and inferior vena cava thrombectomy. During the procedure, the distal IVC was cut circumferentially and suddenly the vessel loop slipped. Case 4 was a 28-year-old male diagnosed with bilateral renal tumor and left adrenal pheochromocytoma. He underwent adrenal pheochromocytoma ectomy and left partial nephrectomy with intra-arterial cold perfusion. The renal vein was transected during the procedure.

Results: All four cases were successfully performed without conversion to open surgery. During the procedure, no additional port and clamp was placed. For case one, the injury aorta was suture repaired. For case two, an endo-GIA stapler and suture technique was applied to repair the injured IVC. For case three, the distal IVC was successful suture ligated. For case four, venous anastomosis was performed to re-establish left renal vein drainage. Median operation time was 208 min (135-360 min). Median vascular repair time was 6 min (4.5-18 min). Median blood loss was 1150 mL (100-1500 mL). Median blood transfusion was 415 mL (0-1380 mL). All patients were successfully discharged without complications. Median postoperative hospital stay was 6 days (4-6 days).

Conclusion: Robotic repair of major vascular injury is feasible without the requirement of additional clamp or port placement in selected cases.

MVP-01.03
Results of 350 Patients Underwent Extraperitoneal Trans-Bladder Prostatic Adenomectomy HD - 3D Videolaparoscopy

Geddo D

Clinical City of Bra, Bra, Italy

Introduction and Objective: We review the results of HD-3D Laparoscopic Extraperitoneal Trans-Bladder Prostatic Adenomectomy in a single surgeon series.

Materials and Methods: Between January 2010 and December 2018, a total of 350 patients were operated. Mean age was 67.71 years (range 50 to 86). Prostatic Adenoma had mean weight of 96.25 gr (range 50 to 165).

Results: Mean operative time was 101.3 minutes (range 60 to 240). The amount of blood lost during surgery was about 10-30 mL. Non-major intraoperative complications were recorded. Continuous bladder irrigation was not positioned in the postoperative period. The patients were mobilized from first postoperative day. Mean time of bladder catheter was 4.1 days (range 2 to 7). Once catheter was removed, all patients urinated spontaneously. First 10 patients (2.85%) were discharge from hospital at 7 postoperative days; the next 50 patients (14.28%) at 5 postoperative days; the next 20 patients (5.71%) at 4 postoperative days; the next 270 patients (77.14%) at 2 or 3 postoperative days. Mean time drainage was 2.7 days (range 2 to 4). No patients (0%) needed re-catheterization for urine retention from voiding block. Four patients (1.14%) at distance of 7-15 days from surgery were again hospitalized for macrohematuria and it was resolved with continuous bladder wash. No patients (0%) presented stress incontinence. No patients (0%) presented urge incontinence. 132 patients (37.7%) presented urinary frequency and urgency during the first 90 postoperative days; these were resolved with anticholinergic or beta 3 agonist therapy. No patients (0%) presented cicatricial stenosis of the urethra. Three patients (0.85%) presented sclerosing cicatricial stenosis of the bladder neck; this was resolved with bipolar Tuip.

Conclusion: Laparoscopy compared to open simply prostatectomy, offers: (1) the use of ultrasonic scissors allowed to enucleate the adenoma in an almost bloodless way, so it was not necessary to use the continuous bladder irrigation in the postoperative course; (2) the catheter positioned in bladder, keeps to the patient secondary disorders to the catheter balloon inflated in prostatic lodge to achieve haemostasis of the same lodge; and (3) short hospital stay, thanks to the immediate mobilization and rapid removal of the bladder catheter. Comparing laparoscopic to transurethral endoscopic techniques, Bipolar Turp and Holep, it is evident: hospitalization and bladder catheter time are similar, similar disruptive result, and no incidence of cicatricial stenosis of the urethra (0%). The statistical incidence of this complication in transurethral endoscopy is comprised in scientific literature from 3.4 to 9.8% - a significantly lower incidence of sclerosing cicatricial stenosis of the bladder neck. In the light of these results, laparoscopy is a safe alternative technique that can be offered to patients who need to undergo surgery for medium or large obstructive pros-

tatic hypertrophy. Furthermore, the fact to underline is that by comparing laparoscopy with transurethral endoscopic techniques, laparoscopy does not cause cicatricial stenosis of the urethra.

MVP-01.04

Endoscopic Recanalization of a Complete Stenosis of the UPJ: Endoscopic Trans-Pelvic Blunt Dissection of the Proximal Ureter

Lezrek M[1,2], Tazi H[2], Fathi A[2], Sayerh Y[2], El Yazami O[2], Slimani A[1], Ziouziou I[2], Moufid K[1], Alami M[1], Ammani A[1]

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Introduction and Objective: We present a video of a new endoscopic technique for the recanalization of the complete obstruction of the uretero-pelvic junction (UPJ), using endoscopic blunt dissection of the proximal ureter through the renal-pelvic wall, using the biprong forceps through the nephroscope. The ureter is localized using cut-for-the-vibration technique. Then, an endoscopic uretero-pelvic anastomosis is performed.

Materials and Methods: 56-year-old female presented with a right flank pain. 3 months ago, she had the history of open surgery for a right renal stone. Ultrasound and CT-scan showed a large right hydronephrosis, and a pyelonephritic left kidney with stones. Retrograde uretero-pyelography showed a complete obstruction of the UPJ. A nephrostomy was performed. The patient wass placed in the split leg modified lateral position. A 24 Fr percutaneous access was performed through a middle calyx. At exploration, the nephroscope did not find the UPJ nor its scar. A dye was injected through the ureteral catheter and it does not pass into the renal pelvis. Retrograde ureteroscopy and trying to cut for the light technique failed. The ureteroscope light was not seen by the nephroscope. An endoscopic incision was performed in the pelvic wall, using an electrode. The biprong forceps were used through the nephroscope to perform an endoscopic blunt dissection of the dense fibrotic tissue outside the pelvic wall. In order to find the ureter, a cut-for-the-vibration technique was used. The ureteral catheter was vigorously rattled. Dissection was orientated following the catheter vibrations. The ureter was found and opened. A 3.5 needle-holder was inserted in the nephroscope and using a 13 mm needle suture, 2 sutures were placed between the pelvic and the ureteral wall. Then, double-J-stent was placed.

Results: Endoscopic blunt dissection of the proximal ureter was possible. The cut-for-the-vibration technique had oriented the dissection, had allowed to find the ureter and recanalization. The suturing was difficult due to fibrosis and the tissue edges were fixed far apart. The mean operative time was 154 minutes. The postoperative hospital stay was 3 days. Retrograde pyelography showed a medium passage of contrast media through the UPJ, and a new JJ-stent was placed, with a follow up of respectively 36 months.

Conclusion: The endoscopic blunt dissection of the ureter was possible. It had allowed insertion of at least of replaceable double-J-stent in complete UPJ stenosis, where all the other endoscopic techniques had especially failed. The cut-for-the-vibration technique was more effective than the cut-for-the-light technique in this case, with dense fibrotic tissue between the renal pelvic wall and the ureter.

MVP-01.05

A Bloodless Circumcision Technique Using Bipolar Diathermy

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Introduction and Objective: Circumcision is one of the most basic urological procedures that urologists learn but it can result in complications, particularly post-operative haemorrhage. Different surgical techniques are described with similar cosmetic outcomes and complication rates. We have developed a bloodless, knifeless circumcision technique commonly performed at our centre. We aim to describe the surgical technique and the outcomes over the last 5 years.

Materials and Methods: With patient consent, video recording was undertaken to demonstrate the bloodless circumcision technique. Patients who underwent circumcision using this technique from July 2013 to June 2018 were identified. Data were collected by retrospective chart review, including demographics, indication for circumcision and complications. Outcomes were compared with the literature and between trainees and surgeons as primary operators.

Results: The video demonstrates that the technique requires only common instruments and minimal haemostasis, without requirement of a sharp incision using a scalpel. A total of 166 patients underwent circumcision or preputioplasty. 47 cases had a trainee as the primary operator, whereas the other 119 cases were performed by a single consultant. Patients were between the age of 15 to 79 years old. Surgical time range between 22 to 87 mins with a mean of 39 and 44 minutes in the consultant and trainee groups, respectively. There were 7 (5.88%) minor complications in the consultant group versus 4 (8.51%) in the trainee group (P= 0.54).

Conclusion: The bloodless knifeless circumcision technique is easy to perform with no requirement for special instruments. It has the potential to be learned and performed safely by surgical trainees. It appears to have comparable outcomes to other described techniques.

MVP-01.06

Percutaneous Transvesical Single-Port Robotic Simple Prostatectomy

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Introduction and Objective: To present our initial experience performing percutaneous transvesical single-port robotic simple-prostatectomy (pSP-RSP) using the novel da Vinci SP® Robot Platform.

Materials and Methods: Two consecutive patients were submitted to pSP-RSP between January 2019 and February 2019. On the percutaneous transvesical approach, the patient is positioned in the supine position, a 3 cm infra-umbilical incision is made after percutaneous needle identification of the bladder dome, a GelPOINT Mini advanced access platform is inserted directly into the bladder and the da Vinci SP® robot is docked. The bladder is then insufflated with CO_2 at 12 mmHg Pneumovesicum pressure and the prostate adenoma is enucleated and hemostasis is achieved. Finally, a mucosal advancement flap is sutured to the urethra to cover the resected area.

Results: Mean total operative time was 168.5 minutes, mean estimated blood loss was 75 mL and the mean postoperative Hgb deficit was 1.7 mg/dL. The mean length of stay after the end of surgery was 17 hours and 11 minutes. All patients came out of surgery with a 2-way foley catheter and no bladder irrigation. No patient received drains. There was no need for additional ports. No intraoperative complications were reported, and no surgeries were converted to open approach. There was no blood transfusion during or following the procedures.

Conclusion: The pSP-RSP is an option regarding minimally invasive techniques for treating benign prostatic obstruction with substantially enlarged glands. Our initial experience revealed that this procedure led to minimal bleeding, no need for additional ports, no need for bladder irrigation, minimal usage of postoperative opioids, and thus favoring a shorter hospital stay and opening the possibility of outpatient management in the future. Further studies need to be completed with a larger sample and long-term follow-up to confirm our findings and after comparing it to the other available large prostate surgical options.

MVP-01.07

Vaginal Flap Incorporation during Robot Assisted Vesicovaginal Fistula Repair: A Novel Technique for Avoiding Ureteral Re-Implantation

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Post Graduate Institute of Medical Education & Research, Chandigarh, India

Introduction and Objective: We present our novel technique of vaginal flap incorporation during robot assisted vesicovaginal fistula (VVF) repair. This avoids ureteric reimplantation in cases where the ureter is opening in the margin of VVF.

Materials and Methods: A 55-year-old lady presented with continuous leak of urine following total abdominal hysterectomy performed for fibroid uterus, at a private hospital. There is a history of repair for bladder injury at the time of surgery. During the immediate postoperative period, she developed acute kidney injury and underwent right percutaneous nephrostomy placement. On pelvic and cystoscopic

examination, a VVF of 2x2 cm was found located in the posterior wall. The left ureter was not visualized during cystoscopic examination. She was planned for robot assisted VVF repair with left ureteric reimplantation. However, during surgery, the left ureteric orifice was identified with an opening into the vagina by the colored efflux of phenazopyridine. A ureteric catheter was placed in the ureter and another ureteric catheter was placed across the fistula. During the fistula repair, a flap of vagina was incorporated into the bladder and the ureteric reimplantation was avoided. The operative time was 150 minutes.

Results: Post-operative period was uneventful, and she was discharged on post-operative day 5. The urethral catheter was removed 3 weeks after the surgery. The patient is continent at 4 months post-surgery and on ultrasound examination showed normal upper tracts. Cystoscopic examination revealed efflux from both ureteric orifice and no fistula.

Conclusion: In complex fistulas with ureter opening at the fistula margin, our technique can avoid ureteric reimplantation. It shortens operative time and consequent inadvertent ischemia to the bladder.

MVP-01.08

Technique of Total Robotic Augmentation Gastrocystoplasty

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S.H. Ho Urology Centre, Singapore, Singapore; The Chinese University of Hong Kong, Ma Liu Shui, Hong Kong

Introduction and Objective: Augmentation gastrocystoplasty has been the technique of choice for patients with a contracted urinary bladder and impaired renal function. This video demonstrates the execution of this procedure in a total robotic approach.

Materials and Methods: A 27-year-old lady suffered from a fibrotic and contracted urinary bladder secondary to ketamine abuse. Her impaired renal function rendered her unfit for ileo-cystoplasty. Robotic augmentation gastrocystoplasty was performed, beginning with the stomach part in a head-up position. Ten-centimetre wedge of stomach was used as the patch to augment the bladder, preserving the right gastro-epiploic vessel as its blood supply. The bladder part was completed with redocking of the robot and putting the patient in the slight Trendelenburg position. Upon completion of the procedure, the patient had a urethral Foley catheter and a pelvic drain in place.

Results: Operation time was 275 min. Blood loss was 100 mL. Nasogastric tube was taken off on post-op day 2. The patient was discharged on post-op day 6. Foley was taken off on post-op day 14. Recovery course was smooth without complication. Functional bladder capacity at post-op 3 months was 300 mL.

Conclusion: Total robotic augmentation gastrocystoplasty is a safe alternative to the conventional open approach. Long term outcome assessment is necessary to determine if this minimal invasive approach can be recommended as one of the standard options in this setting.

Moderated Video Sessions
MVP02: BPO/ LUTS

Friday, October 18, 2019
1400–1530

MVP-02.01
A New Technique for HoLEP 'Omega Sign'

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Introduction and Objective: Holmium laser enucleation of the prostate (HoLEP) is a safe and effective procedure for benign prostatic hyperplasia (BPH) treatment. Incontinence following HoLEP can be encountered, although it is often temporary. To avoid incontinence, the sphincter, located in the urethra as an omega shape, must be protected. In particular, many techniques have been reported concerning enucleation step in HoLEP. With this video presentation, we would like to share our experience and technique on HoLEP with respect to the external urethral sphincter and its omega shape configuration.

Materials and Methods: All HoLEP procedures were performed using a 120-W holmium: YAG (yttrium aluminum garnet) laser (Versapulse, Lumenis Inc., Santa Clara, CA, USA); and a 550-nm end-firing fiber (SlimLineTM 550, Lumenis Inc.). Continuous flow 26 F resectoscope (Karl Storz, Tubingen, Germany), a rigid nephroscope with a 5-mm working channel (Karl Storz), and a Versacut tissue morcellator (Lumenis Inc.) were also used. Power settings were 37.5 Watt (1.5J energy, 25 Hz frequency) in the right pedal and 100 Watt (2 J energy, 50 Hz frequency, and short-500 µs pulse width combination) in the left pedal. After the cystoscopy, the median lobe was incised from both sides, from the urethral orifice line to verumontanum. This groove is deepened to the level of the surgical capsule. After both lateral lobe apex border markings, median lobe enucleation was completed. In next step, midline incision from verumontanum to bladder neck in 12 o'clock region of the prostatic fossa. Mucosal incisions were performed from down to up in both lobes. These incisions were connected at 12 o'clock in behind of the urethral sphincter. This image looked like an Omega Sign. Following this step, left and right prostate lobes were enucleated, respectively. This procedure was completed with morcellation.

Results: 229 patients with BPH were treated by this technique. All procedures were performed using the same mucosal incisions as the procedure preparation and the landmarks. No incontinence was reported.

Conclusion: We demonstrate a novel omega sign technique for preserving of the urethral sphincter during HoLEP procedure. This technique can reduce incontinence rate.

MVP-02.02
Simultaneous Bipolar Enucleation of Prostate and Open Cystolithotomy

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Introduction and Objective: To assess the feasibility and safety of simultaneous bipolar enucleation of prostate and open cystolithotomy for 3 large bladder stones with total diameter of more than 10 cm.

Materials and Methods: An 82-year-old gentleman with history of hypertension, who presented severe lower urinary tract symptoms, had a digital rectal examination that showed moderately enlarged benign prostate. KUB showed 3 large bladder stones with each diameter of about 3.5 cm. After discussion about different surgical modalities with the patient, simultaneous bipolar enucleation of prostate and open cystolithotomy with two teams' approach was performed on 27.3.2018. There were 7 steps to complete the whole procedure. Step 1 – It started with enucleation of left lobe of prostate. Step 2 – Enucleation of right lobe of prostate was completed. Step 3 – Small suprapubic mid-line laparotomy was done after complete enucleation of prostate. Step 4 – Small cystostomy was opened after 2 stay stitches via bladder wall. Step 5 – Retrieval of all bladder stones and enucleated prostate were performed simultaneously. Step 6 – 2-layer closure of urinary bladder defect was done. Step 7 – Negative leak test of repaired urinary bladder was confirmed before closure of small laparotomy wound.

Results: Total operation time was 1 hour. 3 large bladder stones with a total diameter of more than 10 cm were retrieved and enucleated prostate was sent for pathology, which came back to benign pathology. There was no drop of haemoglobin. Patient was discharged on day 2 postoperatively. He was readmitted to trial off Foley catheter and removal of stitches on day 7 postoperatively.

Conclusion: Simultaneous bipolar enucleation of prostate and open cystolithotomy with two teams' approach is safe, a one-off procedure and has short operation time. It is one of the surgical options for benign enlarged prostatic obstruction with large bladder stones.

MVP-02.03
Early Experience of Mini Bladder Neck Incision with 4D Prostatic Urethral Lift in Cohort of Patients with Benign Prostatic Enlargement and Associated High Tight Bladder Necks

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Introduction and Objective: Prostatic urethral lift surgery (PUL) is an established minimally invasive technique proven to be effective in the treatment of lower urinary tract symptoms (LUTS), secondary to benign prostatic hyperplasia (BPH). However, patients with concomitant high tight bladder necks and BPH present a challenge in delivering PUL to provide an effective disobstruction. Therefore, we have developed a technique of combining mini bladder neck incision (mini BNI) with 4D urolift placements to achieve good urine outflow outcomes, with no significant ejaculatory dysfunction.

Materials and Methods: Seventeen patients were diagnosed with BPH with associated high and tight bladder necks via flexible cystoscopy. They were counselled about the procedure and informed consents gained. Mini BNI was performed with Collins knife electrocautery at 6 o'clock with subsequent strategic placement of 4 urolift implants at bladder neck (4D technique) to maximally widen the bladder neck and prostatic fossa. All patients were discharged on the same day, 12 patients without catheter while 5 patients discharged with catheter with a trial without catheter (TWOC) on post-op day 3. Retrospective clinical data were collected from patients including International Prostate Symptoms Score (IPSS) and urine flow rates.

Results: Reduction of 14.6 in mean IPSS was noted (pre-op mean 22.4; post-op 7.8). QoL scores reduced from 4.3 (pre-op) to 1.7 (post-op). Urine flow rate results revealed 119% improvement in mean Q_{max} from 12 mL/s (pre-op) to 26.3 mL/s (post-op) and reduction of post void residual volume of 52.7 mL (mean). There were no reports of ejaculatory dysfunction in any of the men post-operatively. All patients had successful TWOC at the planned schedule post-op. One patient returned with urinary retention within a week but with subsequent successful TWOC. There were no significant adverse events noted.

Conclusion: Patients with LUTS secondary to BPH with concomitant high/tight bladder necks can be effectively and safely treated without any ejaculatory dysfunction with this novel technique of mini BNI with 4D prostatic urethral lift surgery. Our early encouraging results will pave the way for larger future studies to further evaluate the effectiveness of this new technique.

MVP-02.04
Prostate Aquablation: How to Do It (A Step-by-Step Visual Guide)

Rijo E[1], Misrai V[2], Gomez-Sancha F[3], Bhojani N[4], Zorn K[4], Aho T[5], Elterman D[6], Desai M[7], Bach T[8], Gilling P[9]

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Introduction and Objective: Aquablation is a novel and minimally invasive alternative to transurethral resection of the prostate for treating lower urinary tract symptoms (LUTS), secondary to benign prostatic hyperplasia (BPH). It's an image-guided robot-assisted water-jet ablation of the prostate that combines an integrated cystoscope with intra-operative transrectal ultrasound (TRUS) images. The aim of this video is to

share our experience and offer a step-by-step guide to perform the Aquablation technique.

Materials and Methods: The surgery was performed with the AquaBeam® system (PROCEPT BioRobotics, Redwood Shores, CA, USA) under spinal anesthesia. A biplanar TRUS probe was used. A 24-F handpiece was inserted transurethrally. Both the handpiece and the TRUS were fixed to articulating arms attached to the operating table. Real-time ultrasound imaging outlines the surgeon-planned prostatic fossa and a robotically guided handpiece containing a side-firing nozzle shoots a high-velocity water-jet from bladder neck to verumontanum in a single pass (in most cases). This precise and fast (± 5 min) ablation is able to preserve anterograde ejaculation by sparing the ejaculatory function anatomical landmarks and protecting the urinary sphincter. Hemostasis was achieved by a Foley catheter balloon tamponade. There are various methods of post-Aquablation hemostasis, however the most adequate is still evolving.

Results: This video demonstrates how to perform Aquablation, a procedure that has been proven to be safe, efficient and easy to learn, regardless of prostate size (up to 150 mL).

Conclusion: This video serves as a step-by-step visual guide to perform Aquablation. It has been demonstrated previously in the literature that the combination of robotics and image guidance increases reliability and significantly reduces the operative/resection time and improves anterograde ejaculation preservation. These promising results warrant further studies to assess long-term outcomes.

MVP-02.05

Green Laser Enucleation of the Prostate (GreenLEP): Tips and Tricks

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Introduction and Objective: Given the hemostatic benefits of the Greenlight laser wavelength, there has been an increased interest and application with endoscopic enucleation of the prostate (EEP) in recent years for the treatment of benign prostatic obstruction (BPO). The aim of this video is to offer tips and tricks to perform anatomic EEP with the greenlight laser and to share our experience and practical advice in order to improve the overall results of this procedure.

Materials and Methods: We used the Green laser enucleation of the prostate (GreenLEP) "en-bloc" technique followed by mechanical morcellation in all the cases with a 532-nm lithium triborate laser (GreenLight® XPS 180W device; Boston Scientific, Boston, MA), 2090 side-fire laser fiber and the Piranha® morcellation system (Richard Wolf GmbH, Germany). We merged multiple surgical videos from our own daily experience with the technique to provide tips and tricks for GreenLEP, as well as recommendations and troubleshooting to ensure proper technique.

Results: We have demonstrated herein some technical tips and tricks that surgeons may find beneficial in carrying out the GreenLEP technique, improving patient safety and outcomes and avoiding the most common intraoperative complications in this procedure. More specifically, details for fibre handling/direction, power setting, anatomic landmarks for capsular recognition, manual mechanical endoscope details and systematic approach for EEP are reviewed to facilitate dissection and optimize patient outcomes.

Conclusion: GreenLEP previously demonstrated its feasibility, safety and similar short to mid-term functional outcomes compared to surgical gold standards in the literature. This video offers a step-by-step practical guide to learn the technique and perform GreenLEP en-bloc procedure safely, effectively and efficiently.

MVP-02.06

Laparoscopic Approach for Intravesical Surgery Using Pneumovesicum in the Management of Anterior Colporrhaphy Mesh Erosion and Stones Around the Bladder Neck

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Introduction and Objective: Perforation of the bladder or urethra and erosion of the mesh after cystocele repair surgery, are not uncommon and have potentially serious complications. Traditionally, surgical management of such complications has involved excision of the mesh using either a transurethral approach or open surgery. In this video, we present our experience of laparoscopic transvesical surgery for exposed mesh and stone.

Materials and Methods: The patient was placed in the lithotomy position under general anesthesia and a 30° operating cystoscope was inserted under direct vision. After filling the bladder with 300 mL normal saline, a 5 - mm VersaStep™ bladeless trocar was placed 2 cm above the pubic symphysis. Two more 5 mm trocars were placed bilaterally at 3 cm intervals from the initial trocar site. The pneumovesicum state was maintained at 8 - 12 mmHg and a 5 mm telescope was introduced. Using a curved dissector and curved Mayo scissors, the exposed mesh was mobilized and removed. Interrupted 4 - 0 Vicryl sutures were used to close the defect. To localize the ureteral orifice, intravenous Indigo Carmine was used. The bladder stones were removed through the urethra using a stone basket, guided using a ureteral stent pusher.

Results: Total operation time was 55 min and the Foley catheter was removed at post-operative day 5, after post-operative cystography.

Conclusion: Excellent visualization of mesh exposure and ureteral orifice was possible under aparoscopic transvesical surgery and reconstruction, including the mucosa and muscle layer, was able to be achieved. This method is useful and feasible, with minimal invasiveness and an early post-operative recovery.

MVP-02.07

Robotic Ileocystoplasty and Bladder Neck Artificial Urinary Sphincter Insertion: Video Demonstration of Technique

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Introduction and Objective: To present our technique of combined robotic assisted clam ileocystoplasty and artificial bladder neck urinary sphincter (AUS) insertion to treat neurogenic urinary incontinence.

Materials and Methods: We present the case of a 38-year-old male with spina bifida and double incontinence. A robotic clam ileocystoplasty is performed with the patient in a 30° Trendelenburg position. The vasa and seminal vesicals (SVs) are dissected revealing the posterior surface of the bladder neck. The space of Retzius is entered, exposing the anterior surface of both the bladder and prostate. A Maryland is then passed through the angle at the base of the SV from posterior to anterior to size the bladder neck circumference. A section of small bowel is isolated, and the remaining bowel restored using a covidien stapling device. A transverse incision is made into the bladder and the de-tabularised section of bowel sutured into position. The cuff is then placed through the 5 mm port and positioned around the bladder neck. Following this, the reservoir is placed into the pelvis beside the bladder and inflated with an iodine-based solution. Next, the tubings are trimmed, capped and secured under the skin. The patient underwent a procedure to insert the pump in the scrotum and connect all of the tubings 3 weeks later to ensure no infection. However, this is something to review for future procedures.

Results: Total hospital stay was 6 days. The catheter was removed at 3 weeks following cystogram. Urodynamic studies 10 months following the procedure showed a functioning AUS, with normal bladder compliance but persistent neurogenic detrusor over activity which improved with tolterodine. Patient pad usage decreased from 5 to 2 daily.

Conclusion: Herein we present a successful outcome of concomitant robotic ileocystoplasty and AUS insertion to treat a patient with severe urinary incontinence due to neurogenic detrusor over activity, small bladder capacity, and neurogenic sphincter weakness.

MVP-02.08

Successful Treatment of Persistent Postoperative Stress Urinary Incontinence with Artificial Urinary Sphincter in Men, After the Failure of the Use of Male Sling

Tatanis V, Kousournas G, Spanos N, Levis P, Anastasiou I, Constantinidis C, Adamakis I

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Introduction and Objective: The purpose of this study is the presentation of the placement manner of

an artificial urinary sphincter in males suffering from persistent stress urinary incontinence with history of failure of male sling placement after radical prostatectomy.

Materials and Methods: AMS 800 artificial urinary sphincter was placed in two males, 64 and 65 years old, who firstly underwent male sling placement. The first patient underwent radical prostatectomy 7 years ago and salvage radiotherapy post-operatively. Because of severe stress incontinence, he underwent adjustable male sling Atoms® 4 years ago. On the 3rd post-operative month, the symptoms reappeared. Via a vertical perineal incision, the adjustable sling was recognized and removed. The bublo-spongiosum muscle and the urethra were recognized in excellent condition and the simultaneous placement of artificial urinary sphincter was decided. The peri-urethral cuff was placed at the height of the bulbar urethra. During the access to the paravesical region, a traumatic injury of the external iliac vein was recognized which treated with vein ligation. The second patient underwent male 4-arm sling Virtue® because of moderate postoperative stress urinary incontinence, without improvement, so the artificial urinary sphincter was decided. The sling was recognized, prepared and removed. The bulbo-spongiosum muscle was atrophic. The urethra was recognized in good condition, followed by the placement of periurethral cuff, of the handling pump and of the reservoir. The surgical procedures were uncomplicated. The artificial urinary sphincter was activated on the 6th postoperative week successfully. The patients were re-examined after 1 month and every 3 months afterward.

Results: During the 3-month follow-up, the patients remained continent without the need of pad. They have fully returned to daily activities.

Conclusion: The stress urinary incontinence consists one of the most common complications of the radical prostatectomy. The placement of a male sling presupposes the existence of a functional sphincter mechanism, but it has a failure rate of up to 30%. The placement of an artificial urinary sphincter is the only alternative solution for the incontinence restoration. Despite the potential intraoperative difficulties, it is a feasible and viable solution with excellent functional results and a high degree of acceptance and satisfaction.

Moderated Video Sessions
MVP03: Reconstruction/ Prostate Cancer

Friday, October 18, 2019
1545–1715

MVP-03.01
Transperineal Fiducial Markers Insertion

Lo KL, Leung KW, Chui KL, Ng CF

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Introduction and Objective: Radical external beam radiotherapy has been an indispensable treatment modality for prostate cancer. Recent advancement in radiotherapy techniques calls for more accurate targeting of radiotherapy to diseased tissues. Fiducial markers (FM) have emerged as a potential solution to localizing prostate cancer during radiotherapy.

Materials and Methods: To avoid septic complication of transrectal insertion of fiducial markers, we have performed 4 cases of transperineal insertion of fiducial markers in March 2019. We composed a video report which depicted how transperineal insertion of fiducial markers could be performed under ultrasound guidance. Firstly, the perineal region was disinfected. Then local anesthetic was injected to the periprostatic plane. Under ultrasound guidance, two trocars were inserted to guide implantation of FM to the right base, right apex and left middle gland. This triangular arrangement of markers held true for tumors in any part of the prostate.

Results: Among the 4 cases, the average age was 69 years, the mean PSA was 7.97 ng/dL, and 3 cases were T1C disease, while the last case was stage IV disease with oligo-progression at prostate after hormonal therapy. One case with aspirin 80 mg daily was not stopped before the procedure. Average procedure time was 7 min. The average pain scores of ultrasound probe insertion, local anesthetic injection and fiducial markers insertion were all 1 only. There was no admission due to fever, sepsis, haematuria, per rectal bleeding or other complication after the procedure.

Conclusion: For patients with prostate cancer, transperineal insertion of fiducial markers is safe and effective in deploying full advantages of image-guided radiotherapy in modern era.

MVP-03.02
Robotic Single Port Surgery and the New SP® Platform: The Ideal Option for Extra-Peritoneal Radical Prostatectomy?

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Glickman Urological & Kidney Institute, Cleveland, United States

Introduction and Objective: We describe the technique for extra-peritoneal single port robotic radical prostatectomy using the New SP® da Vinci surgical system.

Materials and Methods: Ten consecutive cases of Robotic Single Port radical prostatectomy were performed during February 2019 and prospectively recorded. Preoperative, intra-operative and postoperative data were collected regarding demographics, age, BMI, operative time, estimated blood loss, complications, length of stay, days with Foley catheter, final pathology, and oncological margins. Our technique of extra-peritoneal robotic radical prostatectomy includes 2 previous steps. Extra-peritoneal space: a 3 cm infra-umbilical incision is used to reach the extra-peritoneal space and then a kidney shape balloon is introduced until the pubic bone and deployed to create the working space which is then verified using a laparoscopic endoscope. Single port device placement: a mini gel point advance platform is inserted through the incision with the previously attached 25 mm robotic single port cannula and multichannel guide and a 12 mm laparoscopic port. After that the radical prostatectomy can be performed following the steps used with other platforms — the opening of endopelvic fascia, bladder neck dissection, pedicles and neuromuscular bundle management, dorsal vein complex transection and ligation, posterior reconstruction and urethro vesical anastomosis.

Results: Mean age was 62.3 ± 6.4 years and BMI 30.01 ± 5.73. Median total operative time was 197.5 minutes with a console time of 148.5. Average estimated blood loss was 143 cc. No conversions or additional ports were needed; no complications were recorded. Four patients spent one night at the institution, but none spent more than 24 hours. All patients reported minimal pain.

Conclusion: Extraperitoneal single port robotic radical prostatectomy is feasible and offers advantages to patients such as small single incision, no additional port, no drain, no Trendelenburg position, less pain and use of opioids and in most cases, less than 24 hours of hospital stay.

MVP-03.03
Robotic-Assisted-Laparoscopic Excision of Vesico-Urethro Anastomotic Stenosis (VUAS), Re-Do Anastomosis, Perineal Exploration with Excision of Urethral Stricture

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Introduction and Objective: We demonstrate an uncommon, combined approach to the surgical management of an intractable, recurrent Vesico-Urethral Anastomotic Stenosis (VUAS) in the setting of prior pelvic radiation therapy.

Materials and Methods: Patient is a 68-year-old male with history of prostate cancer, treated 10 years ago with Robot Assisted laparoscopic (RAL) prostatectomy and subsequent adjuvant pelvic radiation. Presented with worsening Lower Urinary Tract Symptoms (LUTS) and Stress Urinary Incontinence (SUI). Workup revealed bladder outlet obstruction secondary to a 10 Fr VUAS. Due to severity of symptoms and desire to maintain an active lifestyle, he opted for surgical treatment.

Results: He was initially treated with a course of serial (x 3) Direct Vision Urethrotomy (DVIU) and steroid injections. Had recurrence of stenosis 6 months later with significant calcifications. Decision was made to proceed with major reconstructive surgery to excise calcified stenosis and re-do anastomosis. Surgical approach was combined RAL abdominal and open perineal. Total surgery time was 8 hours. Hospital length of stay was 3 days. Kept indwelling catheter for 4 weeks and Retrograde Urethrogram (RUG) performed at time of removal.

Conclusion: Patient completely incontinent, but no evidence of recurrent stenosis. Plan for trans-corporal artificial urinary sphincter (AUS) implantation 6 months post-operative. Combined abdomino-perineal approach is feasible and effective in treating VUAS.

MVP-03.04
Modified Kulkarni Techniques

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Introduction and Objective: Panurethral stricture is one of the challenging conditions that impacts quality of life. Surgical intervention has evolved with a trend toward single stage procedures and buccal mucosa use. In 2009, Kulkarni published his initial experience for treating long segment urethral stricture by dorsal onlay buccal mucosal graft urethroplasty. The technique presents a versatile solution with good functional and cosmetic outcome. However, such technique might require more than two grafts, which might increase the comorbidities at donor site. We are demonstrating a modified technique of Kulkarni urethroplasty. The aim is to reduce the number of oral graft mucosa used in case of extremely long segment urethral stricture.

MVP-03.05
Transurethral Resection of Bladder Tumor Through Artificial Urinary Sphincter

Heinsimer K, Wiegand L

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Introduction and Objective: Artificial Urinary Sphincter (AUS) is a common treatment for stress urinary incontinence, especially in patients treated for prostate cancer. A small number of patients with an AUS will subsequently develop bladder cancer. These patients are especially hard to manage due to risk of cuff erosion with transurethral interventions.

Materials and Methods: Description of management of an 81-year-old male, with history of prostatectomy and AUS placement, found to have 2.5 cm bladder tumor.

Results: The patient underwent transurethral resection of bladder tumor (TURBT) through a 5 cm AUS cuff using a 16.5 Fr flexible cystoscope and 3 Fr bugbee monopolar electrode. The tumor was able to be resected en-bloc. The patient's cuff was deactivated prior to TURBT and reactivated 72 h post-oper-

atively. The patient experienced no complications or compromises from an oncologic or incontinence standpoint. Final pathology was spindle cell carcinoma without muscle invasion.

Conclusion: The technique of en-bloc enucleation using a flexible cystoscope may offer less complications than rigid cystoscopy without negatively impacting oncologic outcomes in patients who require transurethral resection through an AUS.

MVP-03.06

Robotic Assisted Laparoscopic Posterior Urethroplasty Using the SP Robot

Jun MS, Liu W, Dy GW, Zhao LC

New York University, New York City, United States

Introduction and Objective: To describe our technique and outcomes for the treatment of posterior urethral stenosis with the da Vinci Single Port (SP)® platform.

Materials and Methods: We retrospectively reviewed 5 patients who underwent SP robot-assisted laparoscopic posterior urethroplasty (SPRALPU) by a single surgeon from October 2018–January 2019. Compared to multi-port robotics, the SP robot allows for improved exposure and less instrument clashing in the deep pelvis. Variables included patient demographics, diagnosis and etiology, prior interventions, intraoperative variables, functional outcomes, and complications. Success was defined as passage of a 17 Fr. flexible cystoscope or absence of urinary symptoms. The operative technique involves SP port placement at a periumbilical location for transabdominal mobilization of the bladder neck and urethra. Cystoscopy is used to identify the level of the urethral stenosis. The stenotic segment is excised and the anastomosis is completed using either excision and primary anastomosis or Y-V plasty. Combined abdomino-perineal approach may be used for distal urethral mobilization to reduce tension.

Results: The mean age was 64.8 years (range 51–77). Posterior urethroplasty was performed for vesicourethral anastomotic strictures (VUAS) (n=1), VUAS with rectourethral fistula (n=1), bladder neck contracture (BNC) (n=1), BNC with bulbar urethral stricture (n=1), which were caused by prostate cancer treatment (brachytherapy, radiation therapy, prostatectomy), and prostatic urethra false passage (n=1) due to traumatic intermittent catheterization in a patient with neurogenic bladder. Prior interventions included endoscopic balloon dilation, urethral incision under direct vision, and foley catheter placement. Four patients underwent SPRALPU without open conversion. Mean operative time was 417 minutes, estimated blood loss 220 mL, and length of stay 5.2 days. There were no intraoperative complications, though one case required open conversion due to SP robot failure; however, surgery was subsequently completed robotically using the Xi robot. Post-operative complications included ileus (n=2), small bowel obstruction (n=1), deep venous thrombosis (n=1), urinary tract infection (n=3), hematuria (n=1), urethrocutaneous fistula (n=1), abscess (n=1) and osteomyelitis (n=1). Catheters were removed at a median time of 32.5 days. All cases had patent urethral anastomoses with a median follow-up of 2.5 months. No patients experienced de novo urinary incontinence.

Conclusion: SPRALPU is a feasible approach to an otherwise difficult reconstructive procedure due to challenges in exposure.

MVP-03.07

An Improvised Surgical "Sewing Machine" for Rapid Graft Quilting and Suturing

Phelps J, Blakely S, Bratslavsky G, **Nikolavsky D**

SUNY Upstate Medical University, Syracuse, United States

Introduction and Objective: The use of buccal mucosal graft (BMG) during urologic reconstructive surgery is common practice. Graft fixation can be difficult in poorly accessible surgical areas. We developed and implemented a surgical "sewing device" to improve the effectiveness of graft quilting and suturing in these challenging spaces. Our objective is to demonstrate the ease of adopting this technique as well as its applicability to a variety of reconstructive surgeries.

Materials and Methods: We conducted a retrospective chart review of all patients where the improvised surgical "sewing machine" was utilized for graft fixation due to limited exposure and accessibility. Pre-operatively, all patients were confirmed to have strictures. Intraoperatively, after harvesting BMG, the device was assembled using materials readily available in the operating room. An absorbable barbed suture was loaded into a hollow needle and then deployed into the tissue with application of gentle pressure. The barbs secured the suture in place to allow for easy removal, forward advancement and reintroduction into the tissue to create a continuous running suture. Post-operatively, patients were seen within a couple weeks and then followed at 4-month intervals to assess graft survival, suture resorption and stricture recurrence.

Results: Between January 2017 and November 2018, a total of 8 patients underwent BMG quilting utilizing the novel device. This included 6 men, 1 woman and 1 transgender female. The mean patient age was 57 years (range 29-79). The types of surgeries performed included 4 posterior urethroplasties, 1 transvesical bladder neck reconstruction, 1 augmented urethrostomy, 1 female dorsal onlay BMG urethroplasty and 1 revision neo-vaginoplasty. Average follow-up was 31 weeks (range 6-68). Graft survival was demonstrated in all patients with suture resorption occurring between 12-16 weeks postoperatively. There were no recurrent strictures within the time period studied.

Conclusion: The novel surgical "sewing machine" can be used in a variety of surgeries where graft quilting or suturing is technically challenging. It creates a solution to the problem without compromising surgical outcomes. In addition, it has the potential for future applications in endoscopic and laparoscopic surgery.

MVP-03.08

New Adjustable Artificial Urethral Sphincter (AUS) with an Additional Stress Balloon to Further Improve Treatment Outcome in Male Stress Urinary Incontinence (SUI)

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Introduction and Objective: The artificial urinary sphincter (AUS) became the gold standard to treat stress urinary incontinence (SUI) in the male. The reported success rate varied between 50 to 96%. Still, certain issues seem not to be solved. The recently released AUS Victo+ from Promedon® has been developed to solve these issues: faster reaction to stress-less episodes of urine loss; adjustable cuff to ensure the critical urethral closing pressure-avoidance of corpora spongiosum atrophy. We demonstrate the Victo+ surgical procedure and show its safety and efficacy.

Materials and Methods: We retrospectively reviewed data stored in a multi-center prospective database for 46 (average age: 70 ± SD 7.5 years old) male patients with severe SUI. The causes of SUI were related to previous TURP, radical prostatectomy and/or radiation related to prostate cancer. In the lithotomy position through a midline perineal and inguinal incision, the one-piece Victo+AUS was implanted. Patients were now followed from 16 (5.9-25.9) months. The essential features of operation are described. Primary successful operative measurements were defined as no complications and patient satisfaction. Successful treatment outcome was defined as no pad usage or reduction of pad usage > 50%.

Results: No intraoperative complications occurred. Operative time was 63 (55-78) min. After 6 weeks, the patient returned for activation. 18/36 patients became continent with the initial filling and the other patients needed additional fluid to reach a satisfactory outcome. The need for pads reduced from 6.4 ± 3.6 to 1.8 ± 1.8 pads/day. Overall patient satisfaction was reported in 84%. The patients were also investigated with regard to their leakage while coughing. Related to the stress balloon, the leakage while coughing was not seen in any of the patients. The number of implants and the follow-up is still small to make a final conclusion.

Conclusion: The initial results of the Victo+AUS demonstrates that it can be safely and effectively performed with promising results.

Moderated Video Sessions
MVP04: Stones and Transplant

Saturday, October 19, 2019
1400–1530

MVP-04.01

Successful Open Surgical In Vivo Repair of a Complex Transplant Renal Artery Aneurysm (TRAA)

Durai P, Vincent C, Julian W, Goh B, Tiong HY

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Introduction and Objective: De novo transplant renal artery aneurysm (TRAA) is a rare (0.3%) complication and if left untreated can lead to devastating complications and allograft loss. This video of open surgical excision and vascular bypass of a TRAA illustrates the importance of pre-operative planning and novel techniques.

Materials and Methods: A 30-year-old lady underwent an uncomplicated living-related renal transplant in 2006 on the right side. Routine ultrasound in 2018, incidentally detected a saccular TRAA. Her estimated glomerular filtration rate (eGFR) was 57 mL/min. CT angiogram with 3D reconstruction confirmed a 2.6 x 2.2 cm wide neck saccular TRAA arising from the anterior segmental branch, distal to the posterior segmental branch origin, but proximal to branches supplying the mid and upper pole. The short take-offs excluded safe radiological endovascular stenting. There was no clinical evidence of mycotic aneurysm. Pre-operative planning dictated a midline transperitoneal approach to provide direct access to the anteriorly positioned TRAA, the iliac vessels and allograft hilum without mobilizing the allograft. The iliac vessels were first secured proximal and distal to the single arterial anastomosis. TRAA was then dissected down to the aneurysmal neck with its connected branches. Renal vein was dissected too. Right saphenous vein graft was harvested and prepared by anastomosing it to right common iliac artery. Based on segmental clamping partial nephrectomy principles, *in vivo* excision of the TRAA was performed after suture ligation of anterior segmental arterial origin and clamping of the distal branches. With renal vein and posterior segmental branch unclamped, the rest of the kidney remained perfused. The prepared saphenous vein graft was then anastomosed to the distal divided end of the anterior segmental arterial branch.

Results: Total operative time was 148 minutes. Estimated blood loss was 500 mL. Hospital stay was 5 days. Total warm ischemic time was 20 min. Post-operative renal function was normal and after 6 months. Follow up scans showed no TRAA recurrence.

Conclusion: Careful pre-operative planning enabled a direct approach to the aneurysm, with its excision under segmental arterial clamping and repair with vein grafting. This in turn helped to achieve a rapid and complete allograft function recovery.

MVP-04.02

Risk Reduction Strategies in Robotic Assisted Kidney Transplantation

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Introduction and Objective: Robotic Assisted Kidney Transplantation (RAKT) is a new and challenging technique in urology. The robotic approach is especially useful when the operative field is deep and narrow and requires fine dissection and micro suturing. We present various risk reduction strategies for good outcome of RAKT.

Materials and Methods: We analyzed 25 patients who underwent RAKT at a single institute from 2014-2019. We analyzed the challenges in RAKT patients. Appropriate strategies were formulated for the risk reduction and improve the outcomes of the procedure.

Results: Creation of graft jacket with ice is required for maintaining cold ischemia of the graft. Pfannenstiel incision for engraftment has advantage of being cheap and prompt access in case of emergency bleeding. Adequate mobilization of bladder is required to prevent inadvertent bladder injury while engraftment. The orientation of graft is very important to prevent tospy-turvy graft, which can be salvaged by end-to-end anastomoses of graft ureter to native ureter. Bench preparation can be done in case of dual donor renal arteries by anastomosing small artery to large donor renal artery in end-to-side fashion. Internal iliac artery can be utilized in case of significant plaque in external iliac artery. Less significant plaque in external iliac artery can be stabilized by 6-point fixation by Prolene sutures. Meticulous bench preparation with ligation of all possible tissue is essential to avoid post-clamp release graft surface bleeding. Adequate Retroperitonealization of the graft is essential to prevent graft torsion and access for graft biopsy. Retroperitonealization should be with good peritoneal windows to prevent lymphocele formation.

Conclusion: RAKT is safe and feasible if risk reduction strategies are followed at appropriate steps.

MVP-04.03

The Use of Smart Phone Thermal Imaging for Temperature Monitoring During Renal Transplant

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Introduction and Objective: Thermal imaging is a well-known technology with a wide spectrum of clinical uses. Recent introduction of devices able to connect with a smartphone have opened up the possibility for non-invasive temperature monitoring during surgery including renal transplant.

Materials and Methods: A Flir one thermal camera was connected to a I-Phone and used during a renal transplant to monitor the temperature of the renal graft. Real time video was done with the camera during the preparation of the graft on the bench and also during the transplant.

Results: Thermal imaging use prior to surgery allowed us to assess if the graft preservation fluid was of adequately cooled. During graft cooling, the non-invasive and real-time temperature monitoring allowed us to see if the graft was being cooled sufficiently and if the whole kidney, or only one area of the kidney, was being cooled. During this stage it is difficult for the surgeon to assess the temperature of the graft as his fingers are also in the iced saline bath. During the transplant, the temperature could be monitored from a distance and the surgeons could be made aware when the graft's temperature is rising and prompted to cool it with cold saline.

Conclusion: The findings of this study changed our institutions protocols for temperature monitoring during renal transplants. Fluids and working area temperatures are now adequately assessed and, if required, cooled before surgery. Doctors are now more aware of the temperature of the graft and more effort is taken to assure adequate cooling of it during the surgery.

MVP-04.04

Automated Needle Targeting (ANT) Device Assisted Renal Access in Percutaneous Nephrolithotripsy (PCNL) Puncture. A Novel Technique in University Malaya Medical Centre (UMMC)

Chai CA, Yeoh WS, Fadzli AN, Ong TA, Kuppusamy S, Aung KP, Lim J, Lim WH, Azad Razack AH

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Introduction and Objective: PCNL is the treatment of choice for large renal stones. However, PCNL can be challenging for new urologists as accurate puncture for renal access is vital for success. The ANT device is an intraoperative navigation system developed to provide needle guidance in renal access during PCNL. It uses a software-controlled automated electromechanical arm with 2-D fluoroscopy images to calibrate needle puncture, aiming to reduce surgery time and radiation exposure. This video presentation demonstrates use of the ANT device to achieve successful PCNL puncture.

Materials and Methods: This is an ongoing open label, single surgeon phase II clinical trial in subjects undergoing PCNL, using the ANT device. Ethical approval was obtained from UMMC ethics review board (Ref No 20118105-6740). Consenting patients diagnosed with kidney stones and suitable for prone PCNL, would undergo surgery using the ANT percutaneous access technique. After initial motor calibration, the ANT is assembled, and image calibration is done with the patient's fluoroscopy image. Then, ANT software-oriented calculation will be made to achieve bullseye alignment before percutaneous puncture. Accurate renal access is confirmed by efflux of urine in the chiba needle as well as imaging with the C-Arm positioned at different angles. Our primary endpoints are time taken to successful renal access and assessment of adverse events.

Results: In this presentation, a single attempt is needed for successful renal access. The time for renal access is 7 minutes 52 seconds, calculated from time of setting up the ANT to efflux of urine in the chiba needle used for puncture. The total fluoroscopy time is 24 seconds (7.4 mGy). No adverse events were documented in this presentation.

Conclusion: The ANT device has shown promising capability in achieving renal access safely and efficiently for PCNL cases. A phase III trial on this procedure will be needed to justify its effectiveness and efficacy in achieving accurate renal access, as well as reducing surgery time and radiation exposure to both surgeons and patients.

MVP-04.05

Retroperitoneoscopic Pyelolithotomy

Juaneda Castell B, Pellegrinelli F, Salinas Duffo D, Tarragón Gabarró S, González Sala JL, Bellido Petti JA, Vicente Palacio E, Castañeda Argaiz R, Kanashiro Azabache A, Martos Calvo R, López Martínez JM, Castro Sader L, Piqueras Bartolomé M, Peña González JA

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Introduction and Objective: Open versus retroperitoneoscopic surgery for urinary stone treatment is not usually indicated. Nevertheless, they represent valid options in presence of anatomical abnormalities, big ureteral stones or failure after endoscopic or extracorporeal shock wave lithotripsy (ESWL).

Materials and Methods: We present the case of a 67-year-old man with a past history of right hemicolectomy due to a colon adenocarcinoma. A 16 x 20 x 28 mm right renal pelvis and right pyeloureteral junction's urinary stone was diagnosed during a routine urological examination. ESWL was not indicated due to stone volume and localization. Retroperitoneoscopic pyelolithotomy and transurethral ureteral stent placement was performed.

Results: Surgical time: 80 min. Hospital stay: 3 days. No post-operative complications. Ureteral stent was removed after one month. Crystallographic Stone analysis: magnesium ammonium phosphate.

Conclusion: Retroperitoneoscopic access represents a valid alternative for complex renal stones treatment in experienced hands.

MVP-04.06

Endoscopic Combined Intrarenal Surgery in a Left Duplex Kidney

Lee YM, Yeow Y, **Chong W**

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Introduction and Objective: Minimally invasive surgery for urinary stones continues to undergo evolution, and endoscopic combined intrarenal surgery (ECIRS) is now increasingly performed for complex cases of urinary stones.

Materials and Methods: We present a video of a case of renal stones in a left duplex kidney, treated with ECIRS. This was performed in the supine position and using mini-perc technique. No nephrostomy tube was placed at the end of surgery.

Results: Complete stone clearance was achieved (postop CT scan). Patient was well at 3 months follow up.

Conclusion: ECIRS is a safe and effective treatment modality for complex urinary stones.

MVP-04.07

Percutaneous Calyceal Flush Manoeuvre: A Valuable Adjunct for Achieving Stone Clearance in Horse Shoe Kidney

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Introduction and Objective: To describe our technique of "Percutaneous calyceal flush manoeuvre" for clearance of residual stones/stone fragments in inaccessible calyces in horse shoe kidney (HSK) during percutaneous nephrolithotomy (PNL).

Materials and Methods: A 77-year-old woman was found to have HSK and multiple renal stones in right moiety during evaluation for hematuria. Her urine for malignant cytology was negative and her serum creatinine was normal. Percutaneous access for PNL was achieved through superior calyceal puncture. Initially stone in the renal pelvis was fragmented and retrieved. An accessible lower calyceal stone was also cleared. One small stone (5 mm) was still seen located in an inaccessible posterior calyx medially under fluoroscopy. Initially a retrograde pyelogram was performed after blocking the previously placed amplatz sheath with a gauze piece. The location of the residual stone bearing inaccessible calyx was noted and it is punctured fluoroscopically using 18G two-part PNL puncture needle. Subsequently, under fluoroscopy the needle tip was positioned just on the surface of the stone and the inner trocar of the two-part PNL puncture needle was removed. Free flow of saline was seen through the cannula confirming the location of the tip of the needle in the pelvic calyceal system. Twenty-mL saline loaded syringe was connected to the cannula and with pressure the saline was flushed after removing the previous packed gauze piece in the amplatz sheath.

Results: The water jet pushed the stone from the calyx to the pelvis and it was subsequently retrieved through the already placed amplatz sheath. Complete stone clearance was confirmed, and 18 Fr nephrostomy was placed. Total operative time was 50 minutes. Post-operative course was uneventful. Next day perurethral catheter with ureteral catheter was removed and nephrostomy was clamped which was after 48 hours. Patient was discharged on third post-operative day.

Conclusion: "Percutaneous calyceal flush manoeuvre" is a simple minimally invasive intraoperative adjunct during PNL for clearance of residual stones or fragments in inaccessible calyces of horse shoe kidney.

MVP-04.08

Ambulatory Second Look Percutaneous Nephrolithotripsy with Maturated Nephrostomy Tract

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Introduction and Objective: Percutaneous nephrolithotomy (PCNL) is the standard technique to manage large renal calculi. Second look PCNL is usually performed under intravenous (IV) sedation or spinal/general anesthesia for removal of remnant stone. This leads to additional pre-anesthesia assessment and close monitoring. To simplify this procedure, the authors investigated feasibility and safety of second look PCNL without anesthesia and sheath, after maturation of nephrostomy tract.

Materials and Methods: Fourteen eligible patients noted to have remnant stone >5 mm diameter by simple CT scan after supine PCNL through single nephrostomy tract under general anesthesia, were included. 24 Fr nephrstomy tube was inserted after surgery. Second look PCNL was performed after 1-week maturation of the nephrostomy tract. 25 mg of IV pethidine was injected prior to second look surgery. Second look supine PCNL was performed using rigid or flexible renoscope without anesthesia or sheath.

Results: Mean age of patients was 57.4 ± 8.5 years old. Mean diameter of stone was 5.4 * 3.3 cm. Mean branch numbers of stone was 4.1 ± 1.4. Mean time of operation during first PCNL was 131.1 ± 24.8 minutes. Mean rate of residual stone was 24.3 ± 10.2 percent. Mean operation time of second look PCNL was 97.4 ± 36.0 minutes. Mean pain score of numeric rating scale was 2.8 ± 1.0. All patients experienced stone free without complication.

Conclusion: Second look PCNL without anesthesia and sheath after maturation of nephrostomy tract was shown to be an effective procedure without severe pain to remove remnant stone in selected patients.

MVP-04.09

RARP: IDC Caught in Urethro-Vesical Anastomosis, No Problem

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Introduction and Objective: Radical prostatectomy remains an important means to treat prostate cancer. Robot-assisted radical prostatectomy (RARP) is indicated for men with prostate cancer with a significant expected expectancy. Most urologists in Australia have now adopted RARP and the number of procedures Australia wide continues to increase each year.

Materials and Methods: In this video we explore a technique used to trouble shoot a catheter (IDC) that has been caught up in the final urethro-vesical anastomosis.

Results: This technique allowed the surgeon to disengage the sutured IDC without compromising and having to redo the urethro-vesical anastomosis. It highlights the technical advantages of RARP in overall efficiency, as well in improving accuracy, reliability, and reproducibility of radical prostatectomy.

Conclusion: As more and more surgeons practice RARP, we will continue to see 'tips and tricks' emerge that were previously not possible using open or laparoscopic techniques.

Moderated Video Sessions
MVP05: Oncology: Non-Prostate

Saturday, October 19, 2019
1545–1715

MVP-05.01
Our Initial Experience with 3D Laparoscopic Radical Cystectomy

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Introduction and Objective: Radical cystectomy and bilateral pelvic lymphadenectomy are considered the treatment of choice for patients with muscle invasive bladder cancer. This can be done by open/laparoscopic/robotic. We are presenting our initial experience with 3-D laparoscopic radical cystectomy for treatment of carcinoma bladder and presenting video of a pre-operatively diagnosed adenocarcinoma bladder.

Materials and Methods: Patients diagnosed with carcinoma bladder with T1 (high grade, Bulky disease)/ T2/T3 cases were selected. Between January 2018 to April 2019, we have done around 21 radical cystectomies. We started doing 3D-laproscopic radical cystectomy since January 2019. Between January 2019 and April 2019, we did 7 cases of 3D laparoscopic radical cystectomy with extracorporeal ileal conduit technique.

Results: Seven patients had their records reviewed. Mean age was 54 years (range 36 – 68 years). All were males. In final histopathology report, 6 were transitional cell and one was adenocarcinoma. Of them, three were T1G3, two were T2N0, one with T3aN1 and last was T3bN2. The intraumbilical incision for specimen retraction and extracorporeal ileal conduit creation was 9 cm. Mean estimated blood loss was 400ml (range 300-700ml). Mean duration of surgery was 6 hours (range 5-8 hours). All of the patients spent 36 hours in intensive care unit. Orally sips allowed on post-operative day (POD) 2 and complete orals by POD 4. Per urethral catheter drain was removed on POD 3. Mean time of abdominal drain removal was 8 days, although in 1 patient, it was kept for 15 days because of urine leak, which was managed conservatively. All patients were discharged on POD14, except one who had urinary leak and was discharged on POD 28. Wound infection occurred in one patient and was managed conservatively. There was no operative mortality.

Conclusion: 3D-Radical cystectomy has made dissection easier in radical cystectomy, due to its better vision and depth perception.

MVP-05.02
Application of Multiparametric MRI Vesical Imaging-Reporting and Data System (VI-RADS) in Bladder Tumour – Endoscopic Submucosal Dissection (BT-ESD)

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Introduction and Objective: Bladder cancer is not an uncommon disease. About 75% of the cancers are non-muscle invasive bladder cancers (NMIBC). Transurethral resection of bladder tumor (TURBT) is currently the gold standard treatment of non-muscle invasive bladder cancer. Why do we need to consider Bladder Tumour - Endoscopic Submucosal Dissection (BT-ESD) of bladder cancer? Disadvantages of TURBT are the risks of disruption of integrity of bladder cancer, bladder perforation, incomplete resection, no muscle inclusion for pathology and cauterisation problem of muscle specimen. Our objective is to illustrate the application of Multiparametric MRI Vesical Imaging-Reporting and Data System (VI-RADS) in Bladder Tumour – Endoscopic Submucosal Dissection (BT-ESD).

Materials and Methods: What is BT-ESD? It's an en-bloc resection of bladder cancer using Hybridknife. The electrode firstly marks the 5 mm clear margin circumferentially, then submucosal injection of saline to elevate the tumour, and it is followed by cutting the mucosa of the previous markings circumferentially. During en-bloc dissection of the tumour, cauterisation of the bleeding vessel is done at the same time, and finally the tumour is resected completely. Studies have shown that BT-ESD has high rate of detrusor muscle inclusion with no significant difference of perioperative morbidity and recurrence rates as compared with TURBT.

Results: 70-year-old gentleman presented with gross hematuria, flexible cystoscopy and showed 4 cm bladder tumor over left posterolateral wall and 1.5 cm bladder tumor over right lateral wall. Multi-parametric MRI confirmed clearance of upper tract and organ confined bladder tumors. MRI VIRADS system from grade 1 to 5 signifies different degree of invasiveness of the bladder cancer. VIRADS grade 3 means non-suspicious of muscle invasion of both tumors of the patient. The duration of the whole procedure was less than one hour. Foley was removed and patient was discharged on post-op day one. Pathology of these two tumors was high-grade non muscle invasive bladder cancers.

Conclusion: MRI VIRADS system guides us the invasiveness of the bladder cancer before BT-ESD, which is a safe en-bloc resection of bladder cancer with high detrusor muscle inclusion rate.

MVP-05.03
Squamous Cell Papilloma of the Urinary Bladder Rare Benign Tumor with Endoscopic Finding Mimicking Malignancy

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Introduction and Objective: Malignant urothelial tumors are more commonly compared to benign tumors. On the other hand, squamous lesions of the urinary bladder occur less often. Squamous cell carcinoma of the bladder represents 2-5 % of bladder tumors. Benign non-invasive squamous lesions of the bladder, like squamous cell papilloma, is extremely rare, with few cases reported in the literature.

Case Presentation: 39-year-old male patient presented complaining of macroscopic hematuria of 3 days associated with obstructive lower urinary tract symptoms. Review of systems otherwise normal. His medical history was unremarkable. On examination: normal external genitalia, digital rectal exam revealed average size prostate. Laboratory: all labs including PSA were all within normal. CT abdomen and pelvis showed: three large intravesical stones 3 cm each; no significant back pressure changes in either kidney; irregular polypoidal urinary bladder wall thickening. Cystoscopy: showing normal urethra, 3 big bladder stones + cauliflower extensive, whitish, exophytic lesion found rising from the anterior wall of the bladder. Management: trans-urethral resection was done, and pathology came back as squamous cell papilloma of the bladder. One month later cystoscopy was done showing no evidence of the tumor and bladder stone was removed through PCCL. Three months later during follow up cystoscopy, the same lesion was seen again at the primary site and the patient underwent TURBT and again, pathology confirmed the same finding squamous cell papilloma.

Conclusion: Most of urinary bladder tumors are urothelial neoplasms, while squamous cell lesions are rare and can be either benign or malignant. Malignant squamous lesions include squamous cell carcinoma in situ and invasive squamous cell carcinoma. Benign lesions include keratinizing squamous metaplasia, verrucous squamous hyperplasia, squamous cell papilloma, and condyloma acuminatum. Endoscopic visualization of these tumors will nearly be the same and resembling urothelial tumors, trans-urethral resection and histological analysis needed to identify the cell of origin.

MVP-05.04
Modified Ileal Conduit Intracorporeally Accomplished Following Laparoscopic Radical Cystectomy

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Introduction and Objective: To introduce a modified ileal conduit (MIC) intracorporeally performed

following laparoscopic radical cystectomy (LRC) and dissection of lymph nodes for bladder cancer (BC).

Materials and Methods: Using linear anastomosis stapler (LAS) 15 cm terminal ileum was isolated with mesentery transilluminator to preserve the blood supply. The continuity of the ileum was restored by end-to-end ileoileal anastomosis, using LAS. The isolated loops were flushed with normal saline containing gentamycin, two single-J stents were pulled through the lumen of the loops. At stoma site a circular incision was made, and an extra-peritoneal tunnel was bluntly created with index finger. Through the tunnel, the loop and stents were pulled out of the incision. The left ureter was brought over the great vessels to the right side. The posterior wall of spatulated ureters were sutured to the loop in running suture, the anterior wall was closed after stents were inserted into ureters respectively. Finally, the conduit and the ureterointestinal anastomosis was totally re-peritonealized by closing the rent of retroperitoneum.

Results: Twenty-six patients of BC were included. Male/female 20/6, age 63.57 ± 9.96 years old, BMI 23.91 ± 2.957 kg/m^2, operation time 329.08 ± 96.91mins, estimated blood loss 232 ± 222.62 mL, ambulation 2 (1-4) days, flatus 3 (1-5) days, hospital stay 11 (6-25) days. Peri-operative complications (Clavien-Dindo) within 90 days included minor (I-II) 11 (44%) cases and major (III-V) 1 (4%) cases. Hydronephrosis was found in 3 cases (mild, 1; moderate, 1; severe, 1) and compromised renal function in 9 cases (mild, 7; moderate, 1; severe 1).

Conclusion: The MIC was intracorporeally accomplished with maximally preserved blood supply of involved intestine and end-to-end reflux ureterointestinal anastomosis with conduit anchored in the extra-peritoneal tunnel. The ureterointestinal anastomosis was totally retroperitonealized, thus obviating any chance of herniating small bowel lateral to the conduit, reducing the incidence of urinary intestinal leak and secondary infection, and facilitating to handle subsequent complications. MIC is feasible and safe although technique challenging, which preserves satisfying renal function while not increasing peri-operative complications.

MVP-05.05

Short-Term Outcomes and Clinical Efficacy of Ligation-Free Technique Used in Laparoscopic Radical Cystectomy

Xu P, Chen B, Xu A, Liu C

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Introduction and Objective: Ligation-free technique is firstly proposed and used in laparoscopic radical prostatectomy. In long-term clinical practice, it has been found equally applicable for bladder cancer. We herein reported the 2-year follow-up results of Ligation-free technique (suture-free dorsal vascular complex) used in laparoscopic radical cystectomy.

Materials and Methods: From January 2015 to October 2016, 49 males less than 60 years old with Ta-T3a bladder cancer underwent laparoscopic radical cystectomy and orthotropic detail sigmoid neo-bladder. Prostate malignancy was excluded based on pathological examination. During the operation, the dorsal vascular complex was treated with ligation-free technique. The operation time and intraoperative blood loss were recorded. Oncologic (cancer specific mortality and recurrence) and functional outcomes (voiding, continence and erectile function) were evaluated as followed up.

Results: No patient had severe intraoperative complications. The operation time was 205.6 ± 32.4 min, and the intraoperative blood loss was 187.5 ± 42.6 mL. No patient had a positive apical surgical margin. The average catheterization time was 12.6 ± 4.57 days, and 7 patients achieved daytime control two weeks after removal of the catheter. Median follow-up was 22 ± 6.8 months. During follow-up, daytime continence was achieved in 42 patients while nighttime continence was achieved in 22 patients, respectively. In 19 patients who had normal erectile dysfunction before surgery, 7 patients recovered erectile function in 2 years of follow-up. 2 patients were found to have unilateral pyelo-carcinoma and underwent surgical resection. The rest of the patients had no localized recurrence and distant metastasis of prostate tumor and bladder tumor.

Conclusion: The integrity of the dorsal vascular complex plays an important role in urinary control. Ligation-free technique can clearly expose the apex of the prostate and reserve the functional support structure as much as possible, which not only reduces the operation time but also promotes post-operative functional recovery without compromise of oncologic effectiveness.

MVP-05.05, Table 1 - Demographic characteristics of the patients operative status.

Variable (Mean±SD)	
Age	49.06±12.52
BMI	24.26±1.10
PSA, ng/ml	1.62±0.76
Smokers, n (%)	37(75.5%)
ASA score, n (%)	
II	40 (81.6%)
III	9 (18.4%)
Clinical stage, n (%)	
Tis/T1	4 (8.2%)
T2	37 (75.5%)
T3	8 (16.3%)
Previous TURBT, n (%)	6 (12.2%)

MVP-05.06

Transurethral Anatomical Enucleation and Resection of the Prostate for Capsule-Preserving Cystoprostatectomy in Selected Patients with Bladder Cancer

Xu P, Chen B, Xu A, Liu C, Zhang Y

Zhujiang Hospital - Southern Medical University, Guangzhou, China

Introduction and Objective: Radical cystectomy with lymph node dissection and urinary diversion is the gold-standard treatment for muscle-invasive bladder cancer. We herein describe our technique and outcomes of capsule-preserving cystoprostatectomy and orthotopic detail sigmoid neobladder in selected patients with bladder cancer.

Materials and Methods: We retrospectively analyzed the clinical data of 26 patients who underwent transurethral anatomical enucleation and resection of the prostate and radical cystoprostatectomy in the single center from April 2015 to January 2018. Inclusion criteria were less than 60 years of age with pathological diagnosed as bladder invasive urothelial carcinoma, and pre-operative pathology confirmation that the urethral mucosa did not invade. All patients had received an elaborate evaluation to rule out prostate cancer pre-operatively, which included initial value of prostate-specific antigen, multiparametric pelvic MRI, prostate biopsies when necessary.

Results: All operations were successfully completed. The mean transurethral endoscopic surgery time was 27.8 ± 4.3 minutes, and the laparoscopic surgery time was 115.2 ± 26.5 minutes, detail sigmoid neobladder was reconstructed extracorporeally. Post-operative pathological staging T carcinoma in situ in 2 patients, T1 multiple grade 3 N0M0 in 6, T2 grade 3 N0M0 in 15, T2 grade 3 N1M0 in 1 and T3 grade 3 N1M0 in 2. No severe intraoperative complications occurred, and the mean PSA level was 0.45 ug/L three-month post-operative. During follow-up, complete daytime and nighttime continence is 88.5% and 61.5%, respectively. In 14 patients who had normal erectile function before surgery, 7 patients recovered erectile function in 1 year of follow-up. The IIEF-5 score increased from 7.7 three months postoperative to 16.7 in the first half of the year and 19.5 in 1 year after surgery. During the follow-up period, one patient developed local tumor recurrence and was receiving further chemotherapy and radiotherapy.

Conclusion: Transurethral enucleation of the prostate preserves the surgical capsule is technically feasible and does not increase the risk of post-operative tumor recurrence. For young patients, it can significantly improve post-operative erectile function recovery and accelerate early recovery of urinary continence. It is worth noting that this group of cases needs to be strictly screened, and preoperative routine prostate biopsy and intraoperative frozen examination are recommended. Long-term functional and oncologic outcomes of this procedure still require a large randomized control trial to verify.

MVP-05.07

Robot Assisted Laparoscopic Approach for Para-Aortic and Infra-Renal Lymph Node Metastasis After Chemotherapy in Testicular Cancer

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University Hospital of Araba, Vitoria-Gasteiz, Spain

Introduction and Objective: The main aim of this communication is to show that robotic surgery facilitates the approach of complex lymphadenectomies, even in large metastatic nodes after chemotherapy.

Materials and Methods: We present the clinical case of an 18-year-old patient who was initially diagnosed with left testicular cancer and treated by orchiectomy. The pathological examination showed an embryonal carcinoma, pT1aN0M0. In the second control, 6 months later, a CT scan showed the appearance of lymph node metastasis, located in left para-aortic position. In consequence, a treatment by 3 cycles of BEP based chemotherapy was administered. Despite chemotherapy treatment, the lymph nodes continued growing. Three months later, these lymph nodes have increased to twice their size but fortunately, they did not show pathological activity in the PET scan. The uro-oncological committee decided to perform a surgical rescue and we carried it out by a robotic approach for a safer surgery.

Results: The robotic approach, thanks to its precision and maneuverability, allowed us to perform a complex surgery with the highest degree of safety and accuracy, removing all the affected lymph nodes and preserving the adjacent structures.

Conclusion: In complex lymphadenectomies, especially after chemotherapy treatments, we must select the safest and most precise techniques. The robotic approach allows us to perform this kind of complex surgery, in order to remove all the affected nodes, without damaging the surrounding structures.

MVP-05.08

Indocyanine Green (ICG) Assisted Video Endoscopic Inguinal Lymphadenectomy (VEIL) for Penile Carcinoma

Gurbani C, Chen K, Sim A

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Introduction and Objective: Inguinal lymph node dissection has shown significant survival benefit in penile carcinoma and remains the gold standard for nodal staging and disease control in intermediate to high risk disease. Recent years have seen the emergence of the minimally invasive video-endoscopic inguinal lymphadenectomy (VEIL), thereby encouraging a shift away from traditional open nodal dissection and its associated high morbidity. We report the first case of bilateral VEIL in Singapore, aided also by indocyanine green (ICG) for deeper tissue penetration and visualization of nodal and vascular structures in a foreign operative field.

Materials and Methods: A 63-year-old with pT1aN3M0 squamous cell carcinoma of the penis, underwent bilateral VEIL following partial glansectomy and 4 cycles of neoadjuvant chemotherapy. Port placement comprised the camera port 4 centimetres distal to the apex of the femoral triangle, with 2 working ports sited 6 centimetres laterally on either side. A plane was developed deep to Scarpa's fascia via a combination of digital dissection and introduction of the endoscope, and operative pneumoperitoneum was established at 8 mmHg. ICG-assisted nodal dissection was then performed abiding by the boundaries of the femoral triangle as the operative limits of dissection.

Results: Staged VEIL was performed. Operative time for right VEIL was 255 minutes, with the patient discharged on post-operative day 3, and a brief readmission on day 25 for a right thigh seroma, treated initially with oral antibiotics. Left VEIL and concurrent ultrasound guided aspiration of the right thigh collection were then performed on day 35, with a total operative time of 170 minutes. The patient was discharged 5 days thereafter, with bilateral drain removal on day 17 in clinic and no significant complications following. Nodal yield was 11 and 8 nodes respectively, for right and left VEIL, with a total of 5 metastatic nodes overall.

Conclusion: ICG proved an invaluable aide in the identification of vital structures such as the femoral vessels, thereby facilitating more precise dissection. Whilst increased exposure is required to mitigate the learning curve for this operation, ICG-assisted VEIL is a promising safe alternative to open nodal dissection in this novel local experience.

Moderated Video Sessions
MVP06: Adrenals/Pediatrics

Sunday, October 20, 2019
1400–1530

MVP-06.01
Laparoscopic Adrenal Sparing Surgery in Management of Adrenal Tumors

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Introduction and Objective: Laparoscopic adrenalectomy is the standard of care for adrenal tumors from incidentaloma to cancer. Recently, partial adrenalectomy is considered more to preserve adrenal function. We evaluated the feasibility and outcomes of adrenal sparing technique in managing adrenal tumors in a single surgeon series. In this video, we demonstrate 3 cases of conn's adenoma, cushing adenoma and bilateral pheochromocytoma.

Materials and Methods: Between 1997 to 2018, a total of 284 patients underwent clipless laparoscopic adrenalectomy. Adrenal sparing technique was done in 48 of them (partial adrenalectomy or adenomectomy). After mobilization of colon, adrenal gland was dissected free from neighboring organs. Adrenal tumor was exposed and enucleated in conn's adenoma, and tumorectomy was done in the other cases (partial adrenalectomy). All patients were followed by lab data, imaging and clinical outcome.

Results: The mean age was 39.6 years (6 months to 83 years). Mean tumor size was 5.1 cm (range 1 to 18 cm). Tumor pathologies were 11 cases of pheochromocytoma, 6 cases of conn's adenoma, 2 cases of cushing adenoma, 2 cases of myelolipoma, 1 case of hydatid cyst, 16 cases of simple cyst and 4 cases of incidental adenoma. 14 patients from the total adrenalectomy group and 3 patients from the adrenal sparing group underwent bilateral surgery. No Clavien grade 3, 4 or 5 or any major complication due to surgery occurred. Hematocrit change and hospital stay were similar in these 48 cases and other patients. In the follow up period, imaging and hormonal tests were normal for all patients and signs and symptoms, such as blood pressure, became normal post-operatively.

Conclusion: Laparoscopic adrenal sparing technique for adrenal tumors is safe and feasible. This technique preserves adrenal function and the patients with bilateral tumors do not require receiving long term steroid supplement.

MVP-06.02
Laparoscopic Treatment of Giant Hydatid Renal Cyst

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Introduction and Objective: Hydatid cysts are caused by Echinococcus granulosus and are rarely present in the kidneys, whereas isolated kidney occurrence is estimated to be as low as 2–4% of all cases. We present a case of a large isolated renal hydatid cyst that was treated laparoscopically.

Materials and Methods: Laparoscopic excision of the renal hydatid cyst roof with removal of contents was done and depicted in the video. All the clips were edited by a video editing program and all images were obtained after obtaining written consent from the patient.

Results: A four-minute video was compiled and uploaded with commentary about the case.

Conclusion: The mainstay of treatment of large renal hydatid is surgery. Minimally invasive surgery is preferable to conventional surgery and kidney preserving surgery is optimal if applicable. In our case, we were successful in treating the large cyst with clearing of all the contents and unroofing of the external cyst wall laparoscopically.

MVP-06.03
Blue Spritz Technique – A Simple Way to Identify the Elusive Calyceal Diverticulum Ostium

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Introduction and Objective: Calyceal diverticuli are hypothesised to be congenital outpouchings of the renal parenchyma lined with non-secretory urothelium; acquired diverticuli have been proposed to be the sequelae of calyceal obstruction, secondary to calculi or a localised cortical abscess draining into a calyx. Urinary stasis within the diverticuli promotes stone formation resulting in renal colic or recurrent infections. When indicated, the treatment of calyceal calculi can be challenging when getting endoscopic access to the stone-bearing calyceal diverticuli, especially if the ostium/neck of the diverticuli is narrowed.

Materials and Methods: In this video, we showcase the endoscopic treatment of a 53-year-old male patient who presented with recurring left flank ache. The KUB X-ray showed a cluster of calculi in the upper pole of the left kidney. An intravenous program was subsequently performed which demonstrated a dilated left upper pole calyx with multiple small clustered calculi. After thorough discussion regarding ureteroscopic and percutaneous approaches, he elected to proceed with the ureteroscopic approach. In the first procedure, it was noted that the distal ureter was tight, hence decision was made to proceed with staged pre-stenting. Subsequently, in the second procedure, there was difficulty identifying the ostium of the stone-bearing calyx. The ostium became apparent only after utilising the "blue spritz" technique - methylene blue was instilled into the collecting system via the flexible ureteroscope and then suctioned out; normal saline irrigation fluid was then introduced into the collecting system, with the residual blue dye seen escaping from the ostium of the stone-bearing calyx. A guidewire was then inserted into the calyx with subsequent laser infundibulotomy. The cluster of multiple calyceal calculi was visualised and extracted with a zero-tip basket.

Results: A total of 105 small calculi were extracted from the calyceal diverticulum, each measuring about 1-3mm in size. The patient was rendered stone-free at the end of the procedure with the placement of a ureteral stent. At 1-week post-procedure, he was reviewed in the clinic; KUB X-ray showed no residual calculi and the ureteral stent was removed successfully.

Conclusion: The "blue spritz" technique is an effective way to identify the elusive ostium of the renal calyceal diverticulum, saving the patient the need for percutaneous nephrostomy access.

MVP-06.04
Laparoscopic Pyeloplasty – Technique and Our Experience Using the Bi-Directional Spiral Anchor Suture

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Introduction and Objective: Since the initial description of open pyeloplasty by Anderson-Hynes, laparoscopic pyeloplasty (LP) has been considered to be the gold standard technique. However, this is increasingly being challenged by the robotic approach. Laparoscopic intracorporeal suturing is technically challenging and thus, to facilitate adherence to the principles of good anastomoses, barbed sutures have been employed in LP. However, results have been conflicting, there are reports of high failure rates that may be due to ischaemia and fibrosis. Conversely, others have reported favourable results. The suture used in their LP is the V-Loc (4/0); this has more barbs/cm compared with the bi-directional spiral anchor suture, Stratafix (4/0). We describe our technique and present our results using the less abrasive Stratafix.

Materials and Methods: We prospectively reviewed 41 LP performed at our institution between 2015 and 2018. All patients underwent a CT Urogram and MAG III renograms. All patients underwent a transperitoneal LP with antegrade JJ stent insertion. Post-operatively, urethral catheters were removed between 3-5 days, JJ stent removed at 4-6 weeks and MAG III renograms performed at 3 and 12 months post-operatively. Patient demographics and perioperative complications were recorded.

Results: Median age of patients was 32 years (range 17-76). Median operation time was 100 min (range 55-150). Of the 41 patients, 22 were considered suitable for day case, of which 20 patients were discharged home within 12 hours of surgery. The mean hospital stay for the remaining patients was 3 days (range 2-5). Symptomatic and radiological success was recorded in 40 patients (98%). Complications - 1 urinary tract infection and 2 mal-positioned stents.

Conclusion: In the largest series reporting the use of the bi-directional spiral anchor suture for LP, the excellent results show that this is a safe and effective suture. Furthermore, this suture facilitates reduced operative time, avoidance of intra-abdominal drain and hospital stay.

MVP-06.05

Efficacy of One-Sided Periureteral Injection Technique for Treatment of High-Grade Vesicoureteral Reflux: Primary Results in Selected Cases

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Introduction and Objective: In the double-sided periureteral injection technique (PIT), subureteral injection was done in two sides (five and seven o'clock positions). In our selected cases of one-sided technique, the injection is done only in one side (five or seven o'clock positions). This report describes the primary results of one-sided PIT and more cases of double-sided PIT in high-grade vesicoureteral reflux (VUR).

Materials and Methods: In a prospective study, 92 ureters (45 boys and 40 girls) were treated from February 2010 to May 2018. Double-sided and one-sided PITs were done in 67 and 25 refluxing units, respectively. Of 25 one-sided PIT cases, 21 had grade IV and four had grade V of VUR. Of 67 double-sided PIT cases, 54 had grade IV and 13 had grade V of VUR. Pre- and post-operative reflux grades were evaluated by voiding cystourethrography at six months after surgery.

Results: There were seven bilateral cases and 75 ureters (81.5%) had grade IV and 17 (18.5%) had grade V primary VUR. Mean age was 39 months (range: 8-126 months). In one-sided PIT, the VUR disappeared in 23 (92%) units. And also, VUR downgraded to grade III and II in one (4%) and one (4%) units, respectively. In double-sided PIT, the VUR disappeared in 60 (90%) cases. And also, VUR downgraded to grades II and III in 3 (4.5%) and 4 (6%) units, respectively.

Conclusion: The one-sided PIT can be highly effective in selected cases of high-grade VUR. However, further studies are needed in order to confirm our results.

MVP-06.06

Double-Sided Periureteral Injection Technique: A New Modified Endoscopic Treatment for High-Grade Vesicoureteral Reflux with High Success Rate

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Introduction and Objective: Despite the benefits of endoscopic treatment for vesicoureteral reflux (VUR), it has a major drawback of low success rate in high grade VUR. For solving this problem, we introduced a new modified endoscopic treatment called double-sided periureteral injection technique.

Materials and Methods: In a prospective study, a total of 67 ureters were treated in 33 boys and 28 girls, including 6 bilateral cases. Of 67 refluxing units, 54 (81%) had grade IV and 13 (19%) had grade V primary VUR. Subureteral injection of Vanteris® was done at the 5 o'clock and 7 o'clock positions, in which the direction of injecting needles was almost parallel. Pre- and post-operative reflux grades were evaluated by voiding cystourethrography at 6 months after surgery (VCUG).

Results: The median age was 39 months (range 8-126) at 6 months' follow-up period confirmed with VCUG, the VUR has been disappeared in 60 (90%) units. Also, VUR had downgraded to grades II and III in 3 (4%) and 4 (6%) units, respectively.

Conclusion: The success rate of double-sided PIT for treatment of high grade VUR is high. However, father studies with more patients and prolonged follow-up periods are needed in order to confirm our results.

MVP-06.07

Various Plaque Incision and Sealing with Collagen Fleece for Treatment of Peyronie's Disease: Its Feasibility and Safety

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Introduction and Objective: Surgery is the gold-standard for correction of Peyronie's curvature. Recently, there have been reports on partial plaque excision and grafting with collagen fleece technique regarding long term efficacy. However, there is still concern regarding post-operative bleeding complications and worsening of erectile function. Here, we introduce a less invasive technique by various plaque incisions instead of plaque excisions to minimize complications.

Materials and Methods: From May 2018 and Jan 2019, 7 patients with stable Peyronie's disease (PD) were included. Surgical technique was composed of 3 major steps; 1) plaque thinning, 2) various plaque incisions and 3) sealing with collagen fleece (TachoSil®). We assessed the stretched penile length (SPL), total straightness and International Index of Erectile Function (IIEF-5) pre-operatively and 12 weeks post-operatively.

Results: Mean patient age was 62.1 years (range: 52–72); 57.1% of patients had dorsal deviation, 42.1% lateral or ventral deviation. Mean operative time was 80.7 min (range: 60–120). All patients achieved total straightness. Mean penile length of preoperative and postoperative 12 weeks were 10.3 cm (range: 9-12) and 11.3 cm (range: 10-12), respectively. None of patients had hematoma post-operatively and erectile function was preserved 12 weeks post-operatively.

Conclusion: Our initial experience with this technical modification of various plaque incisions shows that one can achieve a sufficient surgical effect without making defect of carvernosum. However, long-term clinical outcomes are necessary to confirm these encouraging findings.

MVP-06.08

Oral Grafts for Urethral Augmentation or Substitution. Harvesting Technique from Inner Cheek and Sublingual Area

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Introduction and Objective: Oral mucosa is the tissue of choice nowadays for urethral augmentation or substitution due to its adequate features and availability. It could be harvested from several locations within the oral cavity. The aim of this video is to demonstrate the detailed technique of harvesting and preparation of oral mucosa grafts for their use in urethral surgery, from two of the most common locations - inner cheek and sublingual area.

Materials and Methods: In our video, we show the standardized harvesting technique of oral mucosa to be used in urethroplasty surgeries, through several clips from patients from our series. We expose some urethral repairs with indication for multiple oral mucosa grafts in order to enlarge or substitute damaged segments. We explain in detail the main steps for harvesting and preparing oral grafts from inner part of the cheek and sublingual area. Anatomical landmarks and surgical keypoints are highlighted.

Results: After cleansing the oral cavity and placing adequate retractors, we show how to identify and mark the limits for safe mucosal harvesting in each location. The grafts are designed, measuring and tailoring them according to the damaged urethral segment. Submucosal injection of local anesthetic and adrenaline prior to incising the mucosa helps with dissection and haemostasis. We incise the graft limits, and rise the mucosal segment, coagulating the bleeding spots with bipolar forceps. Donor sites are closed using absorbable sutures and grafts are prepared, removing muscle fibres, in order to get ready for their placement in the perineal or penile urethral segment.

Conclusion: Oral mucosa is a suitable material for urethral augmentation or substitution. Graft harvesting from inner part of cheek or sublingual area is a safe procedure. A detailed knowledge of oral cavity anatomy and a standardized technique of harvesting and preparation of grafts are paramount to achieve good outcomes and prevent complications.

MVP-06.09

Robotic Posterior Urethroplasty After Complete Urethral Transection During Abdominal Perineal Resection

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Introduction and Objective: Urethral trauma after colorectal surgery is rare, and therefore, there is paucity of literature on their management in the current era. Additionally, there is a lack cases describing robotic posterior urethral repair without a simultane-

ous perineal dissection or history of prostate cancer treatment.

Materials and Methods: Description of a robotic transabdominal posterior urethroplasty in a 39-year-old male with complete urethral transection after laparoscopic abdominal perineal resection (APR).

Results: The patient sustained complete urethral disruption while undergoing an APR. Imaging was consistent with urologic trauma limited to a urethral transection proximal to the membranous urethra. Three days after the APR, the patient was taken to the OR for repair. Prior port sites were utilized for our robotic port placement, the retropubic space was developed and dorsal venous complex divided similar to a prostatectomy. After identifying the urethra with the aid of a cystoscope, the prostatic urethra was anastomosed to the membranous using a 3-0 barbed monofilament. At post-operative week four, a voiding cystourethrogram showed a small leak, therefore the urethral catheter was left for a total of six weeks. At last follow-up, the patient was voiding per urethra without fistula, incontinence, or stricture.

Conclusion: Immediate robotic repair of an iatrogenic posterior urethral disruption is feasible with successful short-term outcomes. This is a select and rare complication of colorectal surgery and therefore, long-term stricture free rates are yet to be determined.

Residents' Forum
SESSION 01

Sunday, October 20, 2019
1100–1230

RF-01.01

The Diagnostic Value of Narrow-Band Imaging for Flat Bladder Lesions

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Introduction and Objective: To investigate the diagnostic value of narrow-band imaging for flat bladder lesions.

Materials and Methods: Forty-nine patients with flat bladder lesions diagnosed by white light cystoscopy + narrow-band imaging followed by transurethral resection were included. The diagnostic value of narrow-band imaging was compared with post-operative pathological results.

Results: A total of 59 flat lesions were identified, in which 8 were normal urothelium, 3 were chronic inflammation, 1 was papillary urothelial neoplasm of low malignant potential, 2 were mild dysplasia, 1 was moderate dysplasia, 1 was severe dysplasia, 3 were carcinoma in situ, 16 were low-grade papillary urothelial carcinoma, 16 were high-grade papillary urothelial carcinoma, and 8 were invasive papillary urothelial carcinoma. For narrow-band imaging, the sensitivity was 86.7% (39/45), specificity was 57.1% (8/14), diagnostic accuracy was 79.7% (47/59), false-positive rate was 42.9% (6/14), positive predictive value was 86.7% (39/45), negative predictive value was 57.1% (8/14), and area under ROC curve was 0.719. Among these lesions, the sensitivity and specificity for post-operative recurrent lesions were 100% (3/3) and 40% (2/5), respectively, and those for erythematous patch-like lesions were 90% (9/10) and 100% (4/4), respectively.

Conclusion: Narrow-band imaging can improve the detection rate for flat bladder tumor lesions and reduce the risk for missed diagnosis under white light cystoscopy, especially for otherwise indistinguishable erythematous patch-like lesions.

RF-01.02

Cystectomy in Metastatic Bladder Cancer: Feasibility, Safety, and Outcomes

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Introduction and Objective: Was to evaluate oncological and clinical benefits of cystectomy in patients with metastatic bladder cancer.

Materials and Methods: Retrospective cross-sectional analysis of 524 patients treated with cystectomy due to bladder cancer in National Cancer Institute of Ukraine from 2008 to 2019. During analysis we have selected a group of 20 (3.6%) patients with surgically respectable primary tumor and advanced metastatic disease prior to surgery and proceeded for further investigation. Patients were analyzed in terms of pre- and post-operative performance status, metastatic burden, surgical complexity and complications (Clavien-Dindo grade), clinical benefits of systemic therapy and cancer specific survival. Statistical data included precise Fischer's test.

Results: Median age - 60 years ([IQR] 33-78 years). ECOG-status ranged from 0 to 1. Median number of metastatic lesions was 4 ([IQR] 1 - 14). Six patients (31%) received platinum-based chemotherapy prior to cystectomy according to standard protocols, among which four (66%) obtained partial response and two (34%) - stable disease (RECIST 1.1). Surgical strategy was discussed on multidisciplinary board. Median operative time - 230 minutes (IQR 150 - 315). Median blood loss - 460 cc (IQR 200 - 980). Fourteen of 20 patients underwent unilateral ureterocutaneostomy, 4 - Bricker diversion, 1 - ileal neobladder. Positive surgical margin rate was 26 %. Sixteen of 20 patients underwent extended lymphadenectomy with median of three (IQR 0 - 5) positive lymph nodes out of 28 (IQR 11 - 32) removed. There were two post-operative Clavien-Dindo Grade III complications (surgical removal), while four patients experienced Grade I or II complications (conservative management). There were no 30-d mortality events and 14 of 20 patients were alive at 1 year after surgery. All patients were eligible and underwent systemic therapy after cystectomy. Achieved 2-year survival rate equaled 25%. Exact Fischer's test has shown better survival probability in patients that underwent pre-operative chemotherapy (P= 0,0498) and had less than 4 metastatic lesions (P= 0,0412).

Conclusion: We demonstrate that in a select group of patients with metastatic bladder cancer, performing cystectomy was feasible with a reasonable safety profile. Although selection bias is present, achieved results suggest perspectives of combined therapy in advanced bladder cancer.

RF-01.03

Health-Related Quality of Life of Patients Following Radical Cystectomy with Ileal Orthotopic Neobladder and Cutaneous Ureterostomy

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Introduction and Objective: Radical cystectomy with subsequent urinary diversion is a debilitating surgery associated with the high rate of both early and late complications, most of which are diversion-related. Another important issue among these patients remains decreased health-related quality of life (HR-QoL). The aim of the current study is to compare HR-QoL outcomes between ileal orthotopic neobladder (IONB) and standard bilateral cutaneous ureterostomy (CU), using validated diversion-specific QoL questionnaire.

Materials and Methods: The study utilized retrospective cohort design, including all patients who underwent radical cystectomy with either orthotopic neobladder or bilateral cutaneous ureterostomy from January 2010 till December 2017. In total, 69 and 57 patients were included in each group respectively, after applying the following exclusion criteria: female, pre- and post-operative radio and chemotherapy, palliative surgery. HR-QoL was calculated for patients with a minimum of 12 months of follow-up. HR-QoL was evaluated using Functional Assessment of Cancer Therapy (FACT) questionnaire for patients undergoing cystectomy (Bl-cys).

Results: Mean age of patients with IONB (56.6) was less than that of patients with CU (64.3) (p <0.001). Median follow-up was 46.9 months ranging from 13 to 107 months. Early post-operative complications were observed in 26 patients (20.6%), 19 (27.5%) in IONB and 7 (12.3%) in CU groups. Development of early post-operative complications was negatively associated with HRQoL in patients with IONB. Particularly, mean score of physical health (20.0 vs 16.4, p-0.023), functional health (16.1 vs 12.8, p-0.02) and total QoL (114.0 vs 99.9, p-0.043) were statistically significantly worse in IONB patients with at least one post-operative early complication. When comparing 2 surgical methods (IONB vs CU), after adjusting for confounders, functional health (15.3 vs 11.9, p <0.001) and total QoL score (110.1 vs 101.7, p-0.026) were statistically significantly superior in IONB group.

Conclusion: IONB was associated with the higher rate of early post-operative complications. Nevertheless, the total HR-QoL score, as well as physical and functional domains, were significantly better in IONB compared to CU. Additionally, decreased HR-QoL was observed in patients experiencing early post-operative complications in IONB arm as compared to those without any complications.

RF-01.04

Clinical Outcomes and Quality of Life of Patients Following Radical Cystectomy with Ileal Conduit, Standard Cutaneous Ureterostomy and Modified Cutaneous Ureterostomy

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Introduction and Objective: Cutaneous ureterostomy (CU) represents the simplest and safest urinary diversion. However, its use is limited due to high rate of late stomal stenosis making ileal conduit (IC), a method of choice for candidates for incontinent urinary diversion. The aim of the current study is to compare clinical outcomes and patients' health related quality of life (HR-QoL) with IC, standard bilateral CU and modified single site CU using validated diversion-specific QoL instrument.

Materials and Methods: The study utilized retrospective cohort design, including 70 patients who underwent radical cystectomy with either IC or bilateral standard CU or modified CU from January 2016 till December 2017. In total 20, 29 and 21 patients were included in each group respectively, after applying the following exclusion criteria: female, pre- and post-operative radio and chemotherapy, palliative surgery. HR-QoL was calculated for patients with a minimum of 12 months of follow-up. HR-QoL was evaluated using Functional Assessment of Cancer Therapy (FACT) questionnaire for patients undergoing cystectomy (Bl-cys).

Results: Mean age was 60.8 years for all patients ranging from 40 to 84. The mean age was significantly lower in IC (57.6) compared to standard (62.0) and modified CU (62.2) (p-0.043) arms. A total of 13 patients (18.6%) out of 70 developed any post-operative complication. The early post-operative complication rates were 25.0% (5/20) in IC, 17.2% (5/29) in standard UC and 14.2% (3/21) in modified CU arms. No statistically significant differences were observed in any of the scores when comparing modified CU arm to standard CU and IC arms. In contrast, in multivariable regression mean scores of functional health (11.5 vs 14.5, p-0.003) and additional concern (35.5 vs 39.7, p-0.039) domains, current erection status (0.2 vs 0.9, p-0.004) and satisfaction from urinary diversion (1.5 vs 2.1, p-0.009) scores were statistically significantly inferior in standard CU arm compared to IC arm.

Conclusion: Modified CU is associated with lower early post-operative complication rate while HR-QoL is not statistically significantly different between CU and IC arms. Therefore, modified CU could be offered to selected patients requiring IC.

RF-01.05

Clinical Practice Patterns of Immediate Intravesical Chemotherapy Following Transurethral Resection of Bladder Tumor

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Introduction and Objective: Current evidence supports the use of a single post-operative dose of intravesical chemotherapy following bladder tumor resection for non-muscle invasive bladder cancer (NMIBC). However, several studies have demonstrated a wide variation in the utilization of post-operative intravesical chemotherapy in various health jurisdictions around the globe. Our goal was to assess current practice patterns among urologists in the Canadian healthcare system with regard to post-operative chemotherapy instillation.

Materials and Methods: Institutional review board approved our study. An electronic questionnaire was distributed to Canadian urologists via email in June 2018. An initial invitation to participate was followed by two reminder emails. Statistical analyses were performed on the collected data.

Results: In total, 130 urologists completed our survey. The overall response rate was 17.6% and included urologists from all ten Canadian provinces. 43.1% of respondents work in academic setting and 22.3% have received urologic oncology fellowship training. 76.9% of respondents perform between 2 and 10 TURBT/month. The median years in practice was 10 years (IQR: 7.5-16.25 years). Eighty-one urologists (62.3%) send urine culture before TURBT. Forty-nine (37.9%) do not use intravesical chemotherapy post TURBT or have rarely used it, and only 4 (3.1%) use it in for all resections. Interestingly, respondents with greater than 10 years in clinical practice were less likely to report use of intravesical chemotherapy (OR: 0.45, p=0.028). Mitomycin C is the primary agent for 60.0% of urologists followed by Epirubicin (19.2%). Common reasons to not administer intravesical chemotherapy included logistical barriers (65.3%), side effects (48.9%), lack of access to agent (22.4%), and a perceived limitation of clinical evidence (22.4%). Sixty-nine (53%) of responders believe that less than 10% of their patients receive intravesical chemotherapy post TURBT. Moreover, if alternatives to mitomycin C were available with decreased toxicity, comparable efficacy, increased availability, and decreased cost; 102 (78.5%) of urologists would consider such agents in their practice.

Conclusion: Immediate intravesical chemotherapy instillation following TURBT has been reasonably well adopted across Canada. However, guideline adherence is a measure of healthcare quality. For this reason, it is paramount to overcome the logistical barriers to treatment and address the safety concerns regarding intravesical therapy.

RF-01.06

Outcome of Dorsal Buccal Mucosal Graft Urethroplasty in Female Urethral Stricture Disease: An Institutional Review

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Introduction and Objective: Female urethral stricture is an uncommon yet difficult scenario for which various procedures have been described and yet, there is no clear consensus on the optimal procedure. We report our experience with dorsal buccal mucosal graft urethroplasty in these patients.

Materials and Methods: After ethics board approval, we performed urethroplasty in 15 patients from August 2016 to 2018 for urethra with a caliber <12F and severe voiding LUTS, significant PVR on ultrasonography and high detrusor pressures on urodynamic study (>40 cm H20 in voiding phase). Patients underwent a uroflowmetry, urodynamic study, cystoscopy pre-operatively and were assessed using AUA symptom score, uroflowmetry post-operatively.

Results: The mean age of the patients was 38.4 years and the median AUASS was 22. In 12 out of 15 patients, stricture was idiopathic, two patients had history of urethral caruncle surgery and one patient had history of prolonged catheterization at the time of obstetric trauma. Nine out of 15 had multiple urethral dilatations/urethrotomy previously. The mean urethral caliber was 9.6F, and all patients had a flat graph with a mean Q_{max} of 9.1 ml/sec on uroflowmetry. In voiding phase, the mean detrusor pressure at maximum flow was 71.06 cmH_20. The mean length of the stricture segment was 2.9cm. The mean operative time was 38.2 minutes. Post-operative urethral calibration >18F in all patients. The median AUASS at 1 month, 3 months and 6 months of follow-up after trial without catheter was 5, 6 and 5 respectively. The pre-operative mean Q_{max} of 9.1 mL/s increased to 22.8 mL/s, 24.6 mL/s and 24.2 mL/s with normal flow rate curves at the 1-, 3-and 6-month follow-up, respectively. Two of the patients complained of persistent symptoms, one of whom required regular self-calibration and the other followed up for monthly office dilatation. None of the patients complained of neurosensory complications or urinary incontinence.

Conclusion: Instead of undergoing repeated, overzealous dilatations for urethral strictures, patients should be given an option of upfront urethroplasty. Dorsal buccal mucosal graft urethroplasty offers an easy, less morbid approach, with excellent results and minimal complications.

RF-01.07

Long-Term Functional Outcomes after Radical and Partial Nephrectomy

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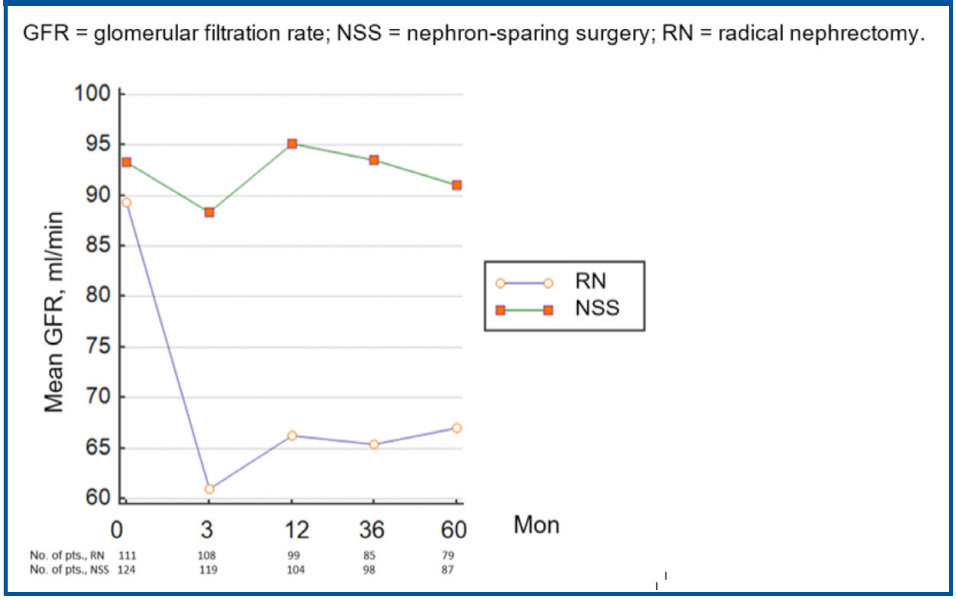
Introduction and Objective: Kidney resection equals radical nephrectomy in terms of oncological outcomes, although data about long-term functional results are controversial. The aim of our study was to evaluate kidney function in patients with localized renal tumors larger 4 cm that underwent partial and radical nephrectomy.

RF-01.07, Figure 1. Mean estimated glomerular filtration rate as a function of time by assigned treatment.



Materials and Methods: Retrospective cross-sectional statistical analysis of patients undergoing surgery with T1b - T2 tumors from 2008 to 2018 years. During analysis, we excluded patients with tumors smaller than 4 cm, locally advanced and metastatic kidney cancer, bilateral lesions, primary CKD, low-performance status (ECOG > 2), after which a group of 235 cases proceeded to further analysis. Groups of comparison were formed according to surgery type: radical (n= 111) and partial nephrectomy (n= 124). The groups were compared by sex, age, tumor size, body mass index and ECOG status. Indications to surgery based on NCIU nephrectomy scoring system (location and RFPV dependent). Kidney function was evaluated by scintigraphy data prior to surgery and 3,12, 36 and 60 months afterwards. For statistical comparison Student's, Mann-Whitney and chi-square tests were used; the curves were built according to long-term GFR levels in both groups.

Results: The groups were matched by sex (60/51 vs 71/53; p= 0.15, χ^2= 3.76), age (54.1 ± 10.9 vs 52.9 ± 11.8 years; p > 0.4), ECOG - status (0.53 ± 0.56 vs 0.72 ± 0.57; p = 0.8), body mass index (30.9 ± 6.1 vs 28.3 ± 4.5; p = 0.06) and average tumor size (73.2 ± 17.2 mm vs 69.9 ± 18.5; p = 0.17). Prior to surgery there was found no statistically significant difference between total GFR of both groups (89.3 ± 18.8 mL/min vs 93.3 ± 18.5 mL/min; t-test, p = 0.2), although significant kidney function decrease was observed among patients undergoing radical nephrectomy during 3 (t-test; p < 0.01), 12 (t-test; p < 0.01) and 60 months (t-test; p < 0.03) after surgery. The comparison of both groups total GFR is shown on figure 1.

Conclusion: Partial nephrectomy is feasible in patients with localized kidney tumors and size larger than 4 cm, providing better functional outcomes over radical nephrectomy. Taking to account equal oncological outcomes of both surgery types, organ-sparing management seems more favorable in terms of reducing comorbidity development risks.

RF-01.08

Retrospective Analysis of Incidentally Detected Squamous Cell Carcinoma of Renal Pelvis in Patients with Renal Calculi

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Introduction and Objective: Chronic nephrolithiasis predisposes to squamous metaplasia and squamous cell carcinoma (SCC), which is a rare malignancy of the upper urinary tract. It is often unsuspected clinically due to its rarity and ambiguous clinical and radiological features, and hence patients present at advanced stages, resulting in poor prognosis. The clinic-pathological characteristics, surgical outcomes and survival of renal pelvic SCC associated with renal stones were retrospectively analyzed.

Materials and Methods: A retrospective analysis of data from Jan 1995 till Feb 2017, who had undergone nephrectomy for non-functioning kidney due to renal calculi and incidentally detected to have SCC of the pelvis at MPUH, Nadiad was done. 18(n) cases of malignancies associated with stone disease were analysed.

Results: M: F = 11:7; Age: 50.80 ± 9.6 years. Right: Left side tumors = 10:8. The mean operative time: 100.5 ± 40.5 min, mean blood loss: 120 ± 20ml, mean hospital stay: 6 ± 2.5 days. 1 patient had duodenal injury. Final histopathology revealed T4 in 6, T3 in 10 and T2 in 2 patients. 3 received post-op radiotherapy and 5 received platinum-based chemotherapy. One patient had evidence of lung metastasis in post-op chest CT. Infectious and systemic symptoms were noted in the majority of patients. Pre-operative imaging: suspicious tumor in 2 cases. Both underwent radical nephrectomy and median follow-up was: 15 months, later lost to follow-up. In the other 16 patients, mean follow-up was 4.5 months.

Conclusion: Malignancies associated with stone disease have insidious onset of clinical symptoms in patients with prolonged history of stone disease. The grave prognosis associated with it, mandates one to have a high index of suspicion. This emphasises the necessity of prompt treatment of renal stones and assessment for renal tumors in patients with long-standing staghorn calculi. The incidence of SCC in hydronephrotic kidneys in our series also highlights the need for ureteroscopy biopsy of the pelvis and meticulous sampling of the renal pelvis by the pathologist in such specimens.

RF-01.09

Outcome of Ultrasound-Guided Percutaneous Nephrolithotomy in the Treatment of Medullary Sponge Kidney with Symptomatic Stones: Ten Years' Experience

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Introduction and Objective: To assess the safety and efficacy of percutaneous the treatment of Medullary Sponge Kidney with symptomatic stones.

Materials and Methods: From March 2006 to February 2016, the clinical data of 77 patients of Medullary Sponge Kidney with symptomatic stones who underwent percutaneous nephrolithotomy in our institute were retrospectively reviewed. The group included 33 men and 44 women with mean age of 42.1 ± 13.2 years. The type of stone included multiple stones in 74 cases and staghorn stones in 3 cases. The mean stone burden was 14.80 ± 21.18 cm^3 (range, 2.16 - 126.75 cm^3) which was measured by 3 dimension reconstructed computerized tomography. Pre-operative urinary tract infectious was recorded in 15 patients.

Results: 159 percutaneous renal tracts were established in the 91 kidney units of medullary sponge and kidney patients included 42 tracts through upper pole, 71 tracts through middle pole and 46 tracts through lower pole. The mean operative time was 88.1 ± 37.5 min. The mean hemoglobin drop was 15.2 ± 12.5 g/L. The mean post-operative hospital stay was 9.5 ± 6.1 d. The hospital discharge stone-free rate was 67.0% and the final stone-free rate was 78.0% at 3 months after procedure. The complications of Clavien Grade I and II occurred in 22 (28.6%) cases and included fever in 16 cases and blood transfusion in 8 cases. No sepsis, kidney loss, and adjacent organ injury were observed.

Conclusion: Percutaneous nephrolithotomy is an effective procedure for medullary sponge kidney with symptomatic stones with a lower incidence of high-grade complications.

RF-01.10

Failure of Ureteral Access Sheath Insertion in Virgin Ureters Prospective Cohort Study

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Introduction and Objective: Flexible ureteroscopy (FURS) underwent huge advances in recent era. It became the most common used technique to treat upper urinary tract stones due to high success rate. Ureteral access sheath (UAS) is one of the main accessories which has an advantage for more successful results. Our aim was to identify the failure rate of insertion of UAS during primary FURS.

Materials and Methods: This a single surgeon single tertiary care center prospective cohort study. All patients who underwent primary FURS for proximal ureteric or renal stones from November 2014 to May 2018 were included in the study. Patients with a stone burden more than 20 mm were excluded from the study. We used one type of UAS 10/12Fr coaxial UAS from Rocamed. Data collected included: Age, gender, BMI, stone burden & location, previous spontaneous passage of stones as well as Congenital anomalies.

Results: Number of patients included in the study was 112. All patients underwent primary FURS. Failure rate of primary UAS insertion was 10.7% (n=12). No statistically significant difference (p > 0.05) between the success and failure group was found in regards of age, BMI, type of anesthesia, previous history of stone passage, and stone burden.

Conclusion: In conclusion, we believe that our study opens the door for multi-centric prospective trial. Identifying factors leading to a failed primary FURS and UAS insertion is crucial in order to properly counsel patient's pre-op about the number procedures that they might need and prevent the financial loss that failed UAS insertion has.

RF-01.10, Table 1: Comparing the effect of gender, type of anesthesia, and stone laterality on UAS insertion failure for primary FURS.

	Failed FURS n (%)	Success FURS n (%)	p-value
Male	11 (13.4)	71 (86.6)	.127
Female	1 (3.3)	29 (96.7)	
GA	10 (10.4)	86 (89.6)	.803
Spinal	2 (12.5)	14 (87.5)	
Left	6 (10.2)	53 (89.8)	.734
Right	6 (12.2)	43 (87.8)	

RF-01.10, Table 2: Comparing means of height, weight, BMI, age, and stone burden and their effect on UAS insertion failure for primary FURS.

	Failed FURS	Success FURS	p-value
Height	1.70 ± 0.067	1.63 ± 0.134	.140
Weight	91.82 ± 25.31	79.69 ± 19.42	.062
BMI	31.63 ± 8.43	29.64 ± 7.39	.409
Age	41.33 ± 6.99	47.01 ± 14.246	.178
Stone burden	11.80 ± 3.73	11.372 ± 5.14	.799

RF-01.11

The Prevalence of Penile Cancer in Patients with Adult Acquired Buried Penis

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University of Pittsburgh Medical Center, Pittsburgh, United States

Introduction and Objective: Penile cancer is a rare but aggressive cancer. Several case reports have recently been published that indicate that adult acquired buried penis (AABP) may increase the risk of penile cancer. Our objective was to define the prevalence of penile cancer in patients with adult acquired buried penis.

Materials and Methods: A retrospective review was conducted of adults diagnosed with AABP and penile cancer between 1/2008 and 12/2018, seen at a tertiary referral center. Demographics including age, BMI, comorbidities, etiology of AABP, smoking history, circumcision status, and premalignant lesions (condyloma, lichen sclerosus (LS) carcinoma in situ (CIS)) were recorded. For patients with penile cancer, AJCC staging, grade, TNM Staging and treatments were recorded. Basic descriptive statistics were performed for the overall cohort. We used Chi-square tests and Fisher exact tests to compare differences between groups.

Results: We identified 150 patients with the diagnosis of adult acquired buried penis. The median age of the AABP cohort was 54 years and the median BMI was 42.9 kg/m^2. Of the 150 patients in our cohort, 51 (35%) had at least one premalignant lesion on physical exam. Forty-four patients (30%) had lichen sclerosis, ten patients (7%) had condyloma, and two patients (1%) had CIS. The prevalence of penile squamous cell carcinoma was seven percent. Patients with penile cancer were older with a mean age of 59 years and more likely to have a smoking history (73%). Patients with premalignant or malignant lesions were more likely to have a lower BMI (p=0.01) and were more likely to have lymphedema listed as the etiology of AABP.

Conclusion: Patients with AABP may inherently possess multiple risk factors for penile cancer including functional phimosis, poor genital hygiene, morbid obesity and chronic inflammation of the penile skin and glans. Penile cancer affects patients with AABP at much higher rates than the general population (7% vs <1%) regardless of circumcision status. In addition, premalignant lesions are common in this population. Patients with AABP should be counseled on these risks and should be considered for buried penis repair if a physical exam cannot be performed.

RF-01.11, Table 1. Demographic characteristics of entire cohort (n=150).

Characteristics	AABP (N = 150)
Median Age (IQR)	55 (42-67)
Median BMI (IQR)	43 (36-49)
Median ASA Classification (IQR)	3 (2-3)
Comorbidities (%)	**N (Percent of cohort)**
Respiratory (OSA, COPD, Asthma)	57 (38%)
Diabetes	77 (51%)
Hypertension	98 (65%)
Fournier's gangrene	9 (6%)
Etiology of AABP (%)	
Lymphedema	20 (13%)
Cicatrix	48 (32%)
Obesity	143 (95%)

RF-01.11, Table 2. Benign Pathology, Premalignant and Malignant Lesions.

Benign Pathology Report Findings	Percent of Cohort (N=64)
Chronic Inflammation	61% (N=39)
Hyperkeratosis	25% (N=16)
Lichen Sclerosis	9.4% (N=6)
Condyloma	1.5% (N=1)
Balanitis	3.1% (N=2)
No pathologic findings	19% (N=12)
Squamous hyperplasia	3.1% (N=2)
Premalignant Lesions based on physical exam	**Percent of Cohort (N=142)**
Presence of Premalignant Lesion (any type)	35% (N=51)
Condyloma	7% (N=10)
CIS	1.4% (N=2)
Lichen Sclerosis	31% (N=44)
Penile Cancer	7% (N=11)

Note: Some patients had more than one premalignant lesion so numbers will not add up to 53. Presence of Premalignant lesions was based on physical exam. Not all patients could be examined due to inability to exhume penis. Some patients had more than one benign pathology on their final pathology. Percentages will not add up to 100.

RF-01.12

Retrospective Comparison Between Micro-Ultrasound and Multiparametric MRI Regarding the Correct Identification of Prostate Cancer Lesions

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Introduction and Objective: Multiparametric MRI (mpMRI) has become the standard imaging technique for the diagnosis of prostate cancer. However, mpMRI pathways are dependent on experience, expertise and information transfer from radiology to urology. Since conventional grey scale ultrasound has limited sensitivity and specificity in the detection on prostate cancer, Micro-Ultrasound was developed using high frequency (up tp 29MHz) and high-resolution ultrasound images. We evaluated the diagnosis performance of Micro-Ultrasound in the detection of prostate cancer index lesion and compared its performance relative to mpMRI, using pathological whole mount sections as the reference.

Materials and Methods: 32 prostate cancer patients scheduled for radical prostatectomy underwent Micro-Ultrasound before surgery, where still images and cineloops were recorded. 16 patients had mpMRI images with acceptable quality and complete sequences available. Each prostate was partitioned into 12 sectors for a total of 192 sectors evaluated. Micro-Ultrasound images were scored according to the Prostate Risk Identification using Micro-Ultrasound (PR-IMUS) and mpMRI images were scored according to PI-RADS v2. A score of up to or equal to 3 was considered to be suspicious for both scores. The index lesion, which was the biggest lesion visible, was identified and filed depending on the localization. Prostatectomy specimens were processed according to the Stanford protocol. Pre-operative and post-operative results regarding the identification of the index lesion were compared and sensitivity, specificity, negative predictive value, positive predictive value, and accuracy were calculated.

Results: The median age was 67 years. Median PSA was 6.2 ng/mL. Pathological stage was pT2c in 56% and pT3 in 44%. ISUP grade group was 1, 2 and 3 in 25%, 56% and 19% of cases respectively. The median cancer volume lesion was 3.1cc. The performance of Micro-ultrasound in the detection of the index lesion was: sensitivity 76.5%, specificity 76.6%, negative predictive value 85.6%, positive predictive value 64.1% and 76.6% of accuracy. The performance of mpMRI was: sensitivity 65.1%, specificity 93.4%, negative predictive value 83.2%, positive predictive value 84.3% and 81.8% of accuracy.

Conclusion: Micro-Ultrasound showed good reliability to identify prostate cancer index lesions. Its performance is comparable to that of mpMRI. Prospective comparative studies are necessary to confirm these results.

RF-01.13

Age-Stratified Reference Values for Prostate Specific Antigen in a Population Based Multi-Ethnic Cohort

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Introduction and Objective: Age-adjusted reference values for Prostate Specific Antigen (PSA) have been reported in international studies and were previously utilised in New Zealand (NZ) clinical practices. However, an emerging body of research has been suggesting the presence of an ethnic variations in PSA values. This study aims to determine age-adjusted reference values for PSA in a multi-ethnic cohort.

Materials and Methods: From Jan 2008 to Dec 2017, all men in a large regional cancer network, aged 40 to 79, who had a PSA test in the community were included. Men with a history of Pca, those who developed Pca in the study period, or men with PSA levels above 20 ng/mL were excluded. When a man had more than one PSA test, the lowest value was considered in the analysis. The information obtained were demographics, PSA testing data and cancer history. Total PSA was measured in a single laboratory using the ADIVA Centaur assay by Siemens.

Results: Complete data were available for 213,551 men (approximately 70% of the region population). PSA values increased with age (Pearson correlation= 0.32, $p < 0.001$). The total cohort average for PSA and age were 0.78 ng/mL and 56.4 years respectively. Significant differences in age-adjusted mean PSA by ethnic groups were found (more prominent in men above 60 years of age). The upper confidence limits of 95th percentiles (reference values) for the entire cohort were: 1.6, 2.4, 3.8, and 5.5 ng/mL for age groups 40 - 49, 50 - 59, 60 - 69 and 70 - 79 respectively.

Conclusion: This is the largest population-based study to establish an age-specific PSA reference values for healthy men. Ethnic variations were present and found to be more prominent with advancing age.

RF-01.14

Extent of Spongiofibrosis: Correlation of Findings at Sonourethrography and Urethroplasty

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Introduction and Objective: The purpose of this study was to diagnose and determine the extent of spongiofibrosis using sonourethrography and compare it with retrograde urethrogram and intraoperative findings.

Materials and Methods: It was a cross sectional observational study from September 2017-August 2018. All patients who presented with urethral stricture, scheduled for urethroplasty and consented to the study were enrolled. Ethics committee approval of the hospital was obtained. The patients were evaluated with retrograde urethrography and sonourethrography. Extent of spongiofibrosis was determined at sonourethrography and subsequently at urethroplasty. Sensitivity, specificity, positive predictive value and negative predictive values of both diagnostic tests were determined. Spearman correlation coefficient (r) was used to describe the association between the extent of spongiofibrosis found at sonourethrography and at urethroplasty.

Results: A total of 84 patients were evaluated during the study period. The mean age at presentation was 44.1 years with acute urinary retention seen in 83.3%. On sonourethrography, midbulbar strictures was the most common presentation seen in 36 (43%) patients and moderate spongiofibrosis was seen in 80% of the patients. The test had a sensitivity of 88.9%, specificity of 83.3%, positive predictive value (PPV) of 80.0% and negative predictive value (NPV) of 90.9% in determination of extent of spongiofibrosis. There was also a significant correlation of 71.4% between the extent of spongiofibrosis on sonourethrography and at urethroplasty. In evaluation for the length of strictures, retrograde urethrogram had sensitivity of 76.9%, sensitivity of 72.4%, PPV of 55.5% and NPV of 87.5% while sonourethrography had a sensitivity of 84.6% specificity of 82.7%, PPV of 68.7% and NPV 92.3%

Conclusion: Sonourethrography has a high accuracy in the determination of extent of spongiofibrosis which correlates excellently with intraoperative findings. It also has a higher sensitivity specificity, PPV and NPV in the determination of length of stricture than retrograde urethrography. Both tools are valuable in management of urethral stricture.

RF-01.15

Reintroducing Augmented Urethroplasty as Anterior Urethral Stricture Management in Tertiary Referral Hospital in East Java

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Introduction and Objective: Urethral stricture disease is challenging condition to treat. Augmented urethroplasty represents a reliable therapeutic option for anterior urethral stricture patient with high success rate. We report our experience in reintroducing augmented urethroplasty as anterior urethral stricture management in a tertiary referral hospital in East Java.

Materials and Methods: Between January 2012 - December 2017, we found 306 urethral stricture patients. There were 136 patients that underwent urethroplasty and 58 of them underwent augmented urethroplasty. The data of urethral stricture patients were collected from medical record in Saiful Anwar General Hospital. Treatment outcome was evaluated based on post-operative clinical symptoms, uroflowmetry, the additional procedure needed, and the correlation was analyzed by T-Test and Chi-Square.

Results: There were 58 patients with urethral stricture had augmented urethroplasty in our institution from January 2012 until December 2017, with an average age of 50.8 $\pm$ 15.3 years old. The most common site of stricture was panurethral (29/50%). The minimal, maximal and average length of anterior urethral stricture was 2 cm, 18 cm and 7.72 cm. Infection was the main cause of urethral stricture (29/50%). One side dissection dorsal onlay was the most common procedure with 47 patients (81%). Buccal mucosal graft were used in most patient with only two patients (3.4%) use lingual graft. The overall success rate of the procedure was 86.2% with the average length of follow-up was 108 weeks. The most common complication was recurrent stricture (6/75%).

Conclusion: Augmented urethroplasty is the most promising technique for urethral stricture management with high success rate. There was no correlation between age, etiology, stricture location, type of stricture, length of stricture, length of the graft with treatment outcome.

RF-01.15, Table 1. Augmented Urethroplasty in our institution on 2012 - 2017

Total patient	**58 patients**	
Mean Age	**50.8 + 13.53 years**	
Symptoms	LUTS	14 (24.1%)
	Urinary Retention	44 (75.9%)
Etiology	Infection	29 (50%)
	Lichen Sclerosus	14 (24.1%)
	Iatrogenic	9 (15.5%)
	Idiopatic	4 (6.9%)
	Hypospadia Related	2 (3.4%)
Stricture Location	Naviculare	1 (1.7%)
	Pendulare	5 (8.6%)
	Bulbar	23 (39.1%)
	Panurethral	29 (50%)
Stricture Length	Minimal length	2 cm
	Maximal length	18 cm
	Average Length	7.7 cm
Graft Type	Buccal	56 (96.6%)
	Lingual	2 (3.4%)
Graft Length	Minimal Graft	2 cm
	maximal Graft	18 cm
	Average Graft	8.86 cm
Procedure	OSD Dorsal Onlay	47 (81%)
	Ventral Onlay	3 (5.2%)
	Double Face	3 (5.2%)
	Staged Urethroplasty	4 (6.9%)
	Ventral Inlay	1 (1.7%)
Time Period of Catheterisation post-operative	2 weeks	2 (3.4%)
	4 weeks	35 (60.3%)
	6 weeks	21 (36.2%)
Succes rate		86.2%
Complication	Recurrent Stricture	6 (75 %)
	Fistule	2 (25 %)

RF-01.16

Donor Site Complications in Oral Mucosa Graft Urethroplasty

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Introduction and Objective: The use of oral mucosa grafts in urethral reconstruction involves transplantation of non-keratinized oral mucosa for the repair of a variety of urethral defects and in the last two decades, this has emerged as the most widely used substitute tissue in urethral reconstruction. The common sites of oral mucosa grafts for urethroplasty include the inner cheek (buccal), the lips (labial) and the anterolateral aspect of the tongue (lingual). However, harvesting of oral mucosal grafts has certain complications. This study evaluated the donor site complications that may result from oral mucosa graft harvest for anterior urethral reconstruction for stricture.

Materials and Methods: This was a prospective study of 28 consecutive patients who presented at the Urology Unit of a University Teaching Hospital with long segment urethral stricture, who had oral mucosa graft harvest and substitution urethroplasty. The donor sites were evaluated at 48 hours, at discharge, 1 month and at 3 months post-operatively. Variables evaluated included pain using the Verbal Descriptive Scale (VDS); haematoma due to bleeding; difficulty in opening the mouth; ability to drink and eat food, and numbness in the mouth.

Results: The mean age of the patients in this study was 45.4 (+ 13.2) years with a range of 14-69 years. The mean length of graft was 5.25 cm (+ 2.00), range of 1.5 cm -11.0 cm. Location of strictures was bulbar urethra in fourteen patients (50%), in twelve patients (43%) it was present in the peno-bulbar urethra. Graft donor sites were buccal in 25 patients (89.3%); in 2 patients (7.0%), they were obtained from both the cheek and lip; and in 1 patient (3.5%), the graft was harvested from the tongue. Oral mucosa donor site complications included pain (32%), bleeding (14%) and peri-oral numbness (3.5%). No patient had difficulty in opening the mouth and all were able to eat and drink within 48 h post-operatively. All donor site complications resolved at discharge and there were no events at follow-up.

Conclusion: Harvesting of oral mucosa graft for substitution urethroplasty is safe but may be associated with minimal short-term donor site complications.

Residents' Forum
SESSION 02

Sunday, October 20, 2019
1400–1530

RF-02.01

Experience Using Urolift to Treat Lower Urinary Tract Symptoms (LUTS) Secondary to Benign Prostatic Hyperplasia (BPH) in a District General Hospital

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Introduction and Objective: The Urolift system is used in the treatment of BPH, approved by NICE for use in prostates under 100ml and without a median lobe. In our unit we have used Urolift for LUTS and in select cases of retention in patients who are not fit enough for transurethral resection of prostate. This project is an assessment of outcomes to date.

Materials and Methods: We performed an audit of all patients who underwent Urolift operation between May 2018 and May 2019 and recorded pre- and post-operative post void residual (PVR), IPSS score and Q_{max}. Additionally, we looked at implants used and assessed cost implications compared to other common LUTS procedures.

Results: 44 patients (mean age 73) had Urolift in this time period. 36 cases were performed for LUTS whereas 8 cases were performed for retention. Those having the operation for LUTS had flexible cystoscopy pre-op. Average pre-operative IPSS was 20.5, PVR 118ml, Q_{max} 10.2. 32 cases were performed under LA, 8 with sedation and 4 under GA. Average number implants used was 3 (standard deviation 1.4) and average length of stay was 0.267 days (vs 2-day minimum LOS for TURP). 3-month post-op average IPSS was 12.8, PVR 61.8ml and Q_{max} 13.8. Of the 8 that had catheters pre-op, 2 were catheter free at 3 months. On cost benefit analysis, we calculated that TURP costs minimum of £3553 including 2-day inpatient stay, whilst Urolift costs £2758 including the flexible cystoscopy required for work-up.

Conclusion: Urolift is a good alternative to TURP and other LUTS procedures, is acceptable to patients and is effective under LA as well as GA. By reducing LOS and need for GA procedure and despite flexible cystoscopy pre-intervention, this operation is a cost-effective means of managing LUTS. Further plans in this audit include assessing methods of pre-operative planning and streamlining care on the day of operation to ensure effective local anaesthetic administration, as well as assessment of patient experience.

RF-02.02

18F-Fluciclovine Positron Emission Tomography in Patients with Biochemical Recurrence of Prostate Cancer: Impact on Clinical Management and Associations with Primary Modalities of Treatment

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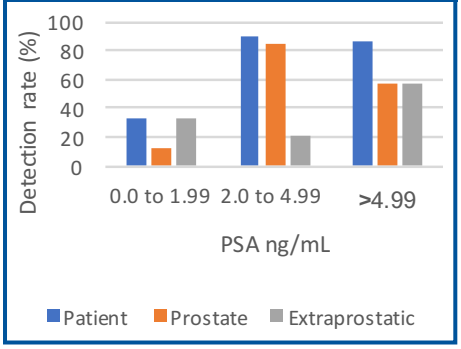
Introduction and Objective: We evaluate the impact of ^{18}F-fluciclovine Positron Emission Tomography/Computed Tomography (PET/CT) on management of patients with biochemically recurrent (BCR) prostate cancer (PCa) after curative intent primary therapy and negative or equivocal standard of care imaging.

Materials and Methods: A retrospective chart review was conducted on patients who developed BCR after primary therapy for PCa with negative standard of care imaging who then received a ^{18}F-fluciclovine PET/CT scan. Patient records were analyzed to determine management changes resulting from ^{18}F-fluciclovine PET/CT imaging.

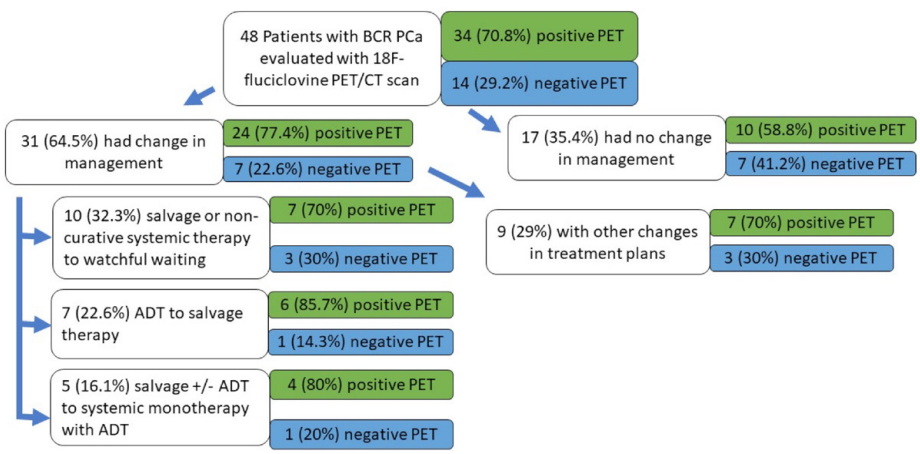
Results: Between December 2017 and February 2019, 48 patients with a median age of 72 years and a median prostate specific antigen (PSA) of 3.95 ng/ml were evaluated. ^{18}F-fluciclovine PET/CT avid lesions were detected in 34 of 48 patients (70.8%). Positive ^{18}F-fluciclovine PET/CT scans increased with higher pre-PET PSA levels (Figure 1). Significant differences in positivity after BCR in the prostate bed were noted between radical prostatectomy (14.2%), radiotherapy (65.3%) and cryotherapy (87.5%) patients (p <0.001). Following ^{18}F-fluciclovine PET/CT, planned management was revised in 31 of 48 patients (64.5%) and were associated with a positive PET/CT in 24 of 31 cases (77.4%). The most frequent change was from salvage or noncurative systemic therapy in favor of watchful waiting (10 of 31 patients; 32.2%), from noncurative systemic therapy to salvage therapy (7 of 31 patients; 22.6%), and from salvage therapy to noncurative systemic therapy (5 of 31 patients; 16.1%) (Figure 2).

Conclusion: ^{18}F-fluciclovine PET/CT detected recurrent sites in most men with BCR PCa, often resulting in management changes.

RF-02.02, Figure 1: 18F-fluciclovine PET/CT detection rate by PSA.



RF-02.02, Figure 2: Change in management plans as a result of 18F-fluciclovine PET/CT.



RF-02.03

Study of Risk Factors of Urinary Colonization in Patients with JJ Catheters

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Introduction and Objective: The aim of this study is to evaluate the prevalence of urinary colonization in patients with the JJ stent, to define the predictive factors associated with this colonization.

Materials and Methods: This is a monocentric prospective study (Between January 2013 and April 2017), conducted in the Urology B department of Ibn Sina Hospital in Rabat. 145 double ureteral catheters carried by 120 patients were examined. The bacteriological profile of the urine of our patients was followed by the completion of an initial urine exam and another at the time of the removal of the JJ.

Results: The rate of colonization in patient's holder JJ was 35.8% (43 out of 120). The urinary colonization rate was 31.7% (38 out of 120). The rate of urinary colonization in patients with colonized JJ was 81.6%, where as it was only 18.4% for non-colonized probes. On double ureteral stent culture, we identified *Escherichia Coli* as the most predominant colonizing pathogen (47.3% of probes) followed by *Enterococcus feacalis* and *Klebsiella pneumoniae* (18.4%, 15.8% respectively). 11.5% of colonized patients developed infectious complications (5 out of 43) and have been treated successfully except a patient who died from septic shock. In multivariate analysis, three factors were statistically associated with this risk; diabetes mellitus (p = 0.005, OR = 0.23, CI = 0.08-0.64), the urgent establishment of JJ (p = 0.05, OR = 0.26, CI = 0,

06-1.04) and duration of implantation of the JJ more than 30 days (p = 0.007, OR = 4.29, CI = 1.49-12.37).

Conclusion: The prevalence of urinary colonization in patients with the double J stent was 31.7%. Diabetes mellitus, duration of implantation of the JJ more than 30 days, and urgent JJ establishment are associated with a higher risk of these urinary colonization.

RF-02.04

Bacteriology and Antibiotic Sensitivity Pattern of Isolates in Patients Who Underwent Percutaneous Nephrolithotripsy (PCNL) at the Philippine General Hospital (PGH)

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Introduction and Objective: Despite being a clean contaminated procedure, PCNL is associated with significant infectious complications, such as pyrexia and post-operative bacteremia. We determined the prevalence of post-PCNL infectious complications and distribution, and antibiotic sensitivity of microorganisms isolated from patients admitted for PCNL. Risk factors associated with the occurrence of positive culture results and development of post-operative fever and bacteremia were also analyzed.

Materials and Methods: A cohort of 102 adult patients who underwent PCNL from January to December 2018 under the PCNL Urinary Tract Infection Surveillance Protocol at a tertiary government hospital was studied retrospectively. The susceptibility patterns of isolated bacteria from urine, stone and blood cultures were evaluated against the most common antibiotics in the hospital. Chi-square and Student's T-test were used to determine differences in the frequencies and means for different risk factors for those who developed fever and urosepsis and those who did not.

Results: Ten isolates were recovered from the preadmission urine culture study (CS), seven from intraoperative urine CS, forty-seven from stone CS, none from febrile urine CS and 4 from febrile blood CS. The most common organism isolated on the urine specimens was *Escherichia coli*, which showed high sensitivity to aminoglycosides. This organism is also among the most common isolate found in stone CS but a significant number of *Pseudomonas aeruginosa* and *Stenotrophomonas maltophilia* were also cultured, which showed higher sensitivities to fluoroquinolones. Twenty-five percent (26/102) and 3.9% (4/102) of PCNL-treated patients developed post-operative fever and urosepsis, respectively, despite receiving antibiotic prophylaxis. No significant associations were found between the different clinical variables studied and the occurrence of post-operative fever and urosepsis.

Conclusion: The current antibiogram formulated showed higher sensitivity to aminoglycoside and fluoroquinolones. Despite nearly consistent resistance to ceftriaxone of the isolates in our cases, it does not warrant a change in the antibiotic prophylaxis utilized in the surveillance protocol, given the lower rates of the post-PCNL infectious complications compared to published literature. Further surveillance is required to justify a shift in prophylactic antibiotics and identify significant risk factors for the development of fever and urosepsis post-PCNL.

RF-02.05

Antibiotic Susceptibility Trends of UTI Causative Bacteria in Indonesia: A Four-Years Surveillance Study

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Introduction and Objective: The emergence and spread of antibiotic resistance has become a global challenge. Urinary tract infection (UTI), one of the most common infections, has also become more challenging to treat. Increases in uropathogen resistance to antibiotics has caused higher morbidity, mortality, and cost in UTI cases. This study addressed trends in antibiotic resistance and uropathogen demographics in Indonesia over four-years period.

Materials and Methods: A retrospective cross-sectional study was conducted from January 2015 through January 2019. Urine samples were collected and cultured from patients with UTI hospitalized in the Dr. Sardjito Hospital.

Results: The isolates from 2171 urine samples were cultured. *Escherichia coli (E. coli)* (20.6%), *Enterococcus faecalis* (20.5%), and *Klebsiella pneumoniae* (*K. pneumoniae*) (10.4%) were identified as the most common bacteria found on culture. *E. coli* (23.0%) was the most common uropathogen in pediatric patients, with *E. faecalis* (14.9%) and *K. pneumoniae* (9.96%) following as the second and third most dominant uropathogen. Antimicrobial susceptibility tests showed that *E. coli* is sensitive to amikacin (AMI) (95.35%), ertapenem (ERT) (88.3%), meropenem (MER) (86.1%), and nitrofurantoin (NIT) (75.7%). Extended-spectrum beta-lactamase (ESBL)-producing *E. coli* showed a similar pattern. *E. coli* and *K. pneumoniae* infections were more common from 2015-2016 and significantly declined in both adult and pediatric patients thereafter ($p < 0.05$). However, the percentage of ESBL-*E. coli* significantly increased in adult patients ($p < 0.05$), as did ESBL-*K. pneumoniae* in pediatric patients. Antibiotic susceptibility tests showed that AMI and carbapenems (MER and ERT) had no change in susceptibility over time. Ciprofloxacin showed lower susceptibility for all bacteria, but susceptibility did not significantly change over the study period ($p > 0.05$). *Pseudomonas aeruginosa* was sensitive to MER, but not to other antibiotics.

Conclusion: The susceptibility tests on this study showed the proportion of ESBL-producing bacteria increases significantly, trend of resistance changed over time and results were different with current national guideline. Our study confirms that antibiotic cycling reasonable as current strategy on management UTI. We propose AMI as the first line antibiotic for UTI in Yogyakarta, with carbapenems considered for severe UTI, and MER are recommended for suspected *Pseudomonas eruginosa* infection.

RF-02.06

The Fate and the Natural History of Small Angiomyolipomas in a Contemporary Series

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Introduction and Objective: Angiomyolipomas are common benign tumor of the kidney and the most common fat containing tumor in the kidney. Retroperitoneal hemorrhage is its most serious complication. The long-term outcome of renal angiomyolipoma has rarely been reported. The aim of this study is to review the fate and the natural history of ultrasound diagnosed small renal angiomyliopmas.

Materials and Methods: Retrospective review of our radiological data base was performed searching for all cases who underwent ultrasound study and were radiologically diagnosed (first time diagnosis) to have angiomyolipoma of a size less than 4 cm. Age at diagnosis, presentation, duration of follow-up, confirmation by computed tomography, progression and time and reason for intervention were stated. Analysis of data and the growth rate over a year were reported.

Results: A total of 232 patients were included in our study with a mean age of 52 years. The mean size of the tumor at diagnosis was 1.9 cm. The diagnosis needed was confirmed by CT scan in 97 (41.8%) of cases. During follow-up (mean 54; range 12-108 months), 90 patients (38.8%) showed no change in size at all, while in the remaining patients the rate of increase in size was less than 1 mm per year. In only 8 patients (3.4%) the tumor became more than 4 cm. Three of these 8 patients were symptomatic needed and accepted interventions by angioembolization. Patients whose tumors became more than 4 cm in size had tumors more than 3 cm from the start.

Conclusion: Small angiomyolipomas, at initial diagnosis, are slowly growing or static tumors. However, meticulous follow-up is mandated to discover any increase in size and/or possible complications.

RF-02.07

Abdominal Phalloplasty in Three Patients with Penile Agenesis

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Introduction and Objective: Aphallia is an extremely rare congenital anomaly and its' treatment is still controversial, even regarding gender assignment. Type of surgery and age for surgery are debated, due to quite insufficient literature data. We present our results in the treatment of three patients with penile agenesis.

Materials and Methods: From June 2016 until February 2018, 3 patients, aged 2, 3.5 and 5 years, underwent phalloplasty due to penile agenesis. They were all evaluated and diagnosed soon after birth. All three boys presented with descended testicles and perineal urethral opening. Phalloplasty was performed using

lower abdominal wall skin flap, in all three cases. Skin flaps were designed and harvested to create an appropriately shaped and sized neophallus, in a good position. The tip of the neophallus was fixed to the abdominal wall skin to keep it elevated for the first three days after surgery. In that way, the tension was reduced, as well as the risk of flap necrosis. Donor site was closed by direct approximation in all cases.

Results: Follow-up ranged from 14 to 32 months (mean 21 months). There were no complications related to the flap or the donor site. Satisfying aesthetic outcome was achieved in all cases, defined as a well-shaped and sized neophallus, and properly positioned as well. All parents reported happiness with the final outcome.

Conclusion: Creation of the neophallus in boys with aphallia is very important for their psychological and psychosexual development. An adequate age for surgery should be discussed with psychologists and parents. A lower abdominal wall skin flap presents a good and safe option for these patients in childhood, as a temporary phallus. However, creation of an adult-sized neophallus in adolescence is the next step. That is why a lifetime follow-up of these patients is necessary.

RF-02.08

Comparison of the Results of Inner Preputial Skin Flap and Buccal Mucosa Graft Substitution Urethroplasty

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Introduction and Objective: Worldwide and over the years, reconstruction of the urethra has continued to present formidable and enormous challenges for urologists as diverse opinions have been expressed on the quality and type of ideal substitution material. The most common graft material used for substitution urethroplasty are buccal mucosa and a preputial skin graft. The aim of this study was to evaluate the outcome of dorsal onlay substitution urethroplasty in bulbar urethra and pan-urethral, performed either with preputial skin flap or buccal mucosa, in terms of functional results and the post-operative complications in a prospective study.

Materials and Methods: From January 2015 to August 2016, 53 patients with bulbar urethral strictures underwent urethroplasty using inner preputial skin flap (27 patients) and buccal mucosa graft (26 patients) with follow-up at 3, 6 and 12 months with IPSS and uroflowmetry. Success was defined as improvement of IPSS and Q_{max} >20 mL/s. Further instrumentation was considered a failure.

Results: With the mean age of 41.24 years and mean stricture length of 5.9 cm, 50 and 3 patients belonged to inflammatory and post-traumatic etiology respectively. Mean graft size was 5.6 cm and 5.4 cm in preputial skin and buccal mucosa respectively, with overall success rate of 87% (preputial skin flap 85.2% and buccal mucosa graft 88.5%). At 1 year, all patients had Q_{max} >20 mL/sec in both the groups, except 7 failure cases (13%) out of which 4 patients (57%) were in inner preputial skin group and 3 patients in buccal mucosa group. Complications included postvoid dribbling (3 patients), penile skin necrosis and fistula formation (1 patient each) in inner preputial skin group and altered sensation in cheek (5 patients), post void dribbling (2 patients) and infection (2 patients) in buccal mucosa group.

Conclusion: Inner preputial skin flap and buccal mucosal free graft can be used as a reasonable material in substitution urethroplasty. On comparing the rate of success and complications, the difference was insignificant with an added advantage of buccal mucosa graft where preputial skin was unavailable. However, longer follow-up with a greater number of patients is needed to judge the long-term efficacy.

RF-02.09

To Bleed or Not to Bleed? Day-of-Procedure Blood Tests for Transurethral Prostatectomy Patients

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Introduction and Objective: Transurethral prostatectomy (TURP) is a common urological procedure used to improve urinary symptoms in men with prostatic hypertrophy. Despite being routine, it is not without risk, including haemorrhage and development of TUR syndrome. As a result, it has been customary in our trust to test haemoglobin, sodium and also group and save (G&S) at both pre-assessment clinic and on the day-of-procedure. Few patients appeared to develop these post-operative complications and so we wanted to assess the clinical need compared with the actual incidence and cost-analysis.

Materials and Methods: Having been identified on a surgical database, the clinical records of all patients who were listed for TURP at Kingston Hospital over an eight-month period were retrospectively reviewed. Data including demographics, pre-operative blood results, blood transfusions required, and development of TUR syndrome were recorded. Cost-analysis was performed using local values from the processing of FBC, U&E and G&S.

Results: In total, 94 patients were eligible for inclusion during the period August 2018 to March 2019. The mean age was 72. No patients required intraoperative transfusion and only 2% required post-operative transfusion at 12 and 26 hours from procedure. In the patients requiring transfusion, one had clear operation notes detailing the likely risk of bleeding. 1/94 developed post-operative confusion and was found to have hyponatraemia which quickly resolved on the ward without ITU admission. Cost-analysis revealed that £2014.89 would be spent per year for the processing of the day-of-procedure bloods along with 36 hours of operator time.

Conclusion: In this study, pre-assessment and day-of-procedure haemoglobin and sodium results rarely gave an indication of who may be at risk of developing post-operative complications and there were significant associated costs. In light of these results, patients attending Kingston Hospital NHS Foundation Trust for TURP will no longer have day-of-procedure bloods unless there are specific indications. This will lead to savings in operator time, equipment and lab processing fees and reduces the number of venepunctures that the patient has to endure.

RF-02.10

A Comparative Analysis of Donor and Allograft Outcomes Based on Laterality of Kidney Donation: Proof of Equivalence of The Safety and Efficacy of Laparoscopic Left vs. Right Donor Nephrectomy

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Introduction and Objective: Laparoscopic right donor nephrectomy is avoided by most urologists because of the shorter vein and its proximity to the inferior vena cava. We compared donor and recipient outcomes between laparoscopic left (LLDN) vs. right (LRDN) donor nephrectomy in a large volume transplant center in the Philippines.

Materials and Methods: A chart review was done on all laparoscopic donor nephrectomies performed from January 2011 to December 2015. Donor demographics (age, gender, BMI) intraoperative [operative time (OT), length of hospital stay (LOS), estimated blood loss (EBL) and warm ischemia time (WIT)] and post-operative outcomes [mean creatinine rise, delayed graft function (DGF)], complications and one-year allograft survival were compared between the two groups.

Results: A total of 441 donors, 397 (89%) LLDN and 44 (9%) LRDN were performed during the study period. The donor characteristics were similar for both groups. There was no significant difference in OT in LLDN (178 min [85-360]) vs. LRDN (176 min [119-257]); EBL in LLDN (100 mL [10-1600]) vs. LRDN (100 mL [20-250]); LOS in LLDN (3 days [2-8]) vs LRDN (3 days [2-4]); WIT in LLDN (4 min [1-32]) vs. LRDN (3 min [1-12]) and DGF in LLDN 9/397 (2.27%) and LRDN 2/44 (4.55%). There was no significant change in the mean donor and recipient creatinine up to one year. There was neither conversion to open nor mortality for both. The one-year allograft survival was also similar in LLDN 392/397 (98.7%) vs. LRDN 42/44 (95.4%).

Conclusion: Regardless of laterality, when performed by experienced hands, laparoscopic donor nephrectomy leads to equivalent outcomes for both donor and recipients in terms of safety profile and excellent allograft function.

RF-02.11

Study of PLGA Membrane System Combined with Olfactory Ensheathing Cells on Improving Erectile Function of Cavernous Nerve Injury Rats

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Introduction and Objective: To investigate the effects of PLGA membrane system combined with olfactory ensheathing cells in improving erectile function of

cavernous nerve injury rats and explore its possible mechanism.

Materials and Methods: A total of 75 male SD rats were randomly divided into five groups: group A received sham operation, group B received bilateral cavernous nerve injury, group C received PLGA membrane system only, group D received OECs only, group E received PLGA membrane system combined with olfactory ensheathing cells. Then, the maximum intracavernous pressure (mICP) of the rats were calculated by electrical stimulation of the major pelvic ganglions, the proportion of nNOS-positive nerve fibers in the total area of penile dorsal nerves, and α-SMA-positive corporal smooth muscle and nissl staining determined by immunohistochemical staining, the levels of endothelial cell marker nNOS, PKG, sGC, VASP, p-VASP and β-Actin detected by Western blot.

Results: After 28 days of treatment, the rats in the group E, as compared with those in the group B, group C and group D, showed significant increases in the mICP (P<0.001), the proportions of nNOS-positive nerve fibers in the total area of penile dorsal nerves (P<0.001), the α-SMA-positive corporal smooth muscle (P<0.001), the number of nissl bodies in cavernous nerves (P<0.001), but no remarkable decrease with group A (P>0.05).

Conclusion: PLGA membrane system combined with olfactory ensheathing cells can protect the erectile function of the rat with cavernous nerve injury by protecting the nerves, improving the alleviating fibrosis and inhibiting cell apoptosis in the cavernous tissue.

RF-02.12

Impact of Modern Media on Analgesic Requirements During Extracorporeal Shock Wave Lithotripsy (SWL)

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Introduction and Objective: Modern handheld media players (iPads, Mobile phones, etc.) are being increasingly adopted to help manage patient comfort across a range of medical procedures. This study sought to assess whether the use of visual media or music improves the patient experience and reduces analgesic requirements in patients undergoing ESWL.

Materials and Methods: A randomised double blinded control study was undertaken, at a single centre over 10 weeks. The only inclusion criteria were patients suitable for undergoing ESWL. 95 patients undergoing ESWL at our centre were randomised to either a control group (current standard of care) or modern media distraction, either visual or audio. Post-procedure patients completed a short questionnaire using the Visual Analogue Scale (VAS) to assess peri-procedural pain and patient satisfaction. Any additional analgesic requirements. ESWL settings and stone/patient factors were also recorded.

Results: Patients in the control group reported an average pain score of 6/10. The average score for patients in the music distraction group was 3.5/10, and for patients in the video distraction group 3.6/10. Both interventions improved patient satisfaction by 50% (3/10 in the control group, compared to 8/10 in both the music and video distraction groups).

Conclusion: Modern media devices allow ESWL to be better tolerated without general anaesthesia. Both video and music distraction improve patient experience of the procedure and markedly decrease reported levels of pain, while decreasing analgesia requirements.

RF-02.13

Single-Stage Bilateral Retrograde Intrarenal Surgery (RIRS): Safety and Outcomes

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Introduction and Objective: This study aimed to assess the effectiveness and safety of single-stage bilateral unilateral retrograde intrarenal surgery (RIRS) for treatment of patients with renal stones.

Materials and Methods: Patients undergoing single-stage bilateral RIRS for renal stones between January 2014 and January 2019, were retrospectively reviewed and matched to patients undergoing unilateral RIRS at a 1:1 ratio, by the propensity score based on age, sex, body mass index, American Society of Anesthesiologists classification, stone burden, and stone location (involvement of the lower calix or not). Main outcome measures were stone-free rate per patient and per renal unit and RIRS-associated morbidity.

Results: Of 123 patients treated by single-stage bilateral RIRS, 84 patients were matched with patients treated by unilateral RIRS. Stone-free rates per patient for bilateral RIRS and unilateral RIRS were 89% and 92%, respectively (P= 0.25). Median operative time (105 vs 68 min, P <0.001) and post-operative hospitalization (2 vs 1d, P= 0.01) was significantly longer for bilateral RIRS than unilateral RIRS. Median changes in hematocrit (1.3% vs 1.0%, P= 0.56) and serum creatinine level (3 vs 2 mol/L, P= 0.54) were similar between bilateral and unilateral RIRS. The overall complication rate was slightly higher with bilateral RIRS (9% vs 8.5%, P= 0.45). No serious RIRS-associated morbidities occurred in either group.

Conclusion: Bilateral ureteroscopy can be performed safely with short-term complications, consistent with published literature. We found no long-term complications and high stone-free rates. Bilateral ureteroscopy in a single procedure represents a viable standard of care for patients with bilateral stone disease.

RF-02.14

Urolithiasis and Water Intake in Saudi Arabia: Is it a Matter of Quality or Quantity?

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Introduction and Objective: Urolithiasis is a significant problem with increasing incidence and prevalence worldwide. Multiple factors such as water intake, climate change, dietary habit and genetic factors can affect stone formation. Our aim is to clarify the relationship between water intake and urolithiasis in Saudi Arabia as a hot climate area.

Materials and Methods: This cross-sectional internet-based survey was conducted in November 2017. Our study was performed using a standard web-based questionnaire using social media open to all internet users. We excluded the incomplete responses. Analysis of the data was then carried out using the chi-square test and SPSS package version 20.

Results: We found a great response to our survey, where 9100 participants responded. Among the participants, 76.6% were females and 23.4% were males. The largest age group was between 18-30 years (60.8%). Of the participants, 842 (9.3%) had a history of urinary tract stones. About 74.3% of the participants with a history of urinary tract stones were drinking less than 1 L per day of water in comparison with those who had no history of urinary tract stones who were drinking a minimum of 1.25 L per day in 55.1%. Regarding the type of water intake, there was no significant relationship between the type of water and the incidence of stones formation (p= 0.096). The amount of water was significantly correlated with urolithiasis (p= 0.000).

Conclusion: We concluded that the amount of water intake per day significantly correlated with urolithiasis and the minimally accepted intake was ≥ 1.25 liter/day. However, the type of water consumed has no statistically significant impact on stone formation.

RF-02.15

Passing Stones Down Under: A Multicentre Evaluation of Acute Ureteric Colic in Australia

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Introduction and Objective: Ureteric lithiasis is among the most common acute urological presentations in Australia. With the number of stone procedures increasing, the decision for intervention versus conservative management remains controversial. MIMIC is the largest international retrospective cohort study evaluating the management decisions and outcomes for patients presenting to hospital with confirmed stone disease. This study is an analysis of data contributed to the collaboration from health networks across Australia.

Materials and Methods: This study is a multicentre international cohort coordinated by the Australian Young Urology Researchers Organisation (YURO) and British Urology Researchers in Surgical Training (BURST). Retrospective analysis of electronic medical records was performed at participating Australian

sites from 1/5/17-1/1/18. Inclusion criteria were patients presenting with acute renal colic and computed tomography (CT) evidence of single obstructing ureteric calculus who were discharged with non-operative management. The primary outcome of stone passage was confirmed with repeat CT imaging after a minimum of 6 months. Patients with multiple stones or who had a subsequent presentation were excluded from the study. Data were entered into a centralised REDcap database and multivariate analysis was performed on patient age, sex, previous history, location of presentation, and stone size and position.

Results: Data was collected from 400 patients entered from 6 health networks across Australia. Most patients (72%) were discharged with conservative management and of those, over two thirds had a confirmed outcome of being stone-free or had another admission for intervention with the remainder being lost to follow-up. Three-quarters of Australian patients experienced spontaneous passage with the remainder requiring surgical intervention. Spontaneous resolution of ureteric lithiasis was dependant on calculus size, with 79% of stones under 6 mm and one-third of stones larger than 6 mm passing spontaneously. Clearance was affected by anatomical location with proximal, mid and lower/distal ureteric stones passing with increasing rates respectively.

Conclusion: This study represents the most comprehensive data set for the contemporary management of ureteric colic both within Australia and internationally. The dataset collected from the Australian hospitals largely reflected the international cohort. Associations between stone size, stone position and need for intervention were identified. The results of this study can be used to inform management practice both within Australia and internationally.

RF-02.16

Predicting the Natural History of Moderate to Severe Incontinence After Prostatectomy Based on Early Post-Operative Factors

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Introduction and Objective: The natural history of moderate to severe post-prostatectomy incontinence (PPI) has not been adequately studied. Our aim was to predict which patients may benefit from prompt surgical interventions for incontinence. We hypothesized that men using > 3 pads after surgery with high bother symptoms would be least likely to regain continence.

Materials and Methods: The study population included men with localized prostate cancer treated with radical prostatectomy at a single center from December 1999 to April 2018. EPIC-26 and UCLA quality of life surveys were completed at multiple time points post-op, up to 60-months follow-up. Associations between health outcomes and pad use were assessed using Pearson's chi square tests. Post-surgery improvement in urinary control and quality of life were modeled using multinomial logistic regression. The interaction of pad use post-surgery and bother score on achieving continence was considered in the forward selection multinomial logistic model.

Results: In total, 1,568 patients were assessed at 30 months and 689 at 60 months. At one month following surgery, 1,034 reported using < 3 pads and 534 reported > 3 pads. Patients using < 3 pads were 7.17 times more likely to become continent (defined as using 0-1 pads) by month 30 compared to patients using > 3 pads (95% CI 5.151-9.991). Patients using < 3 pads had a 0.87 probability of regaining continence by month 60, while patients using > 3 pads had a 0.13 probability. High bother score at any time post-surgery was significantly associated with using > 3 pads (3 pads at one month had a lower probability of recovering continence than patients without these characteristics ($p < 0.0001$).

Conclusion: Patients who require > 3 pads and are highly bothered are less likely to recover continence or improve in their subjective quality of life. This cohort should be appropriately counseled as these men may benefit from early surgical interventions for PPI at six months post-operatively.

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UVID-01

Early Single Centre Results of 4D Prostatic Urethral Lift in Cohort of Patients with Benign Prostatic Hyperplasia with Associated Obstructive Median Lobes

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Introduction and Objective: Prostatic urethral lift surgery (PUL) is an established minimally invasive technique proven to be effective in the treatment of lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia (BPH). However, BPH with obstructive median lobe (trilobar prostatomegaly) present a challenge in delivering PUL in the standard technique to provide an effective disobstruction. Therefore, we have embraced the 4D urolift technique placements (*P. Chin, Australia*) to achieve good urine outflow outcomes (similar to MEDLIFT study) with no serious adverse events or sexual dysfunction.

Materials and Methods: Seventeen patients with symptomatic LUTS were assessed with flexible cystoscopy where enlarged lateral and median lobes were noted. They were counselled about the 4D urolift procedure and informed consents gained. 4 urolift implants were placed adjacent to bladder neck region in 4 different directions to maximally widen the bladder neck. All patients were discharged on same day, 12 patients without catheter while 5 patients discharged with catheter with a trial without catheter (TWOC) on post-op day 3. Retrospective clinical data were collected from patients including International Prostate Symptoms Score (IPSS) and urine flow rates.

Results: Reduction of 9.7 in mean IPSS was noted (pre-op mean 24.3; post-op mean 14.6). QoL scores reduced from 4.7 (pre-op) to 2.4 (post-op). Urine flow rate improved with mean Q_{max} from 9.8 mL/sec (pre-op) to 13.5 mL/sec (post-op) and reduction of post void residual volume of 103.9 mL (mean). There were no reports of ejaculatory dysfunction in any of the men post-operatively. All patients had successful TWOC at the planned schedule post-op. One patient had haematuria which settled with bladder irrigation overnight. There were no significant adverse events noted.

Conclusion: BPH with obstructive median lobes can be effectively treated with this novel technique of 4D prostatic urethral lift surgery. Our early encouraging results of this 4D technique will pave the way for larger future studies to further evaluate the effectiveness of this new approach in treatment of BPH with median lobes.

UVID-02

Thulium Laser Enucleation of the Prostate: Top or Down Technique Adopting During the Early Learning Curve?

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Introduction and Objective: Since 2010, Herrmann and colleagues introduced Thulium laser enucleation of the prostate (ThuLEP) as a versatile minimally invasive enucleation procedure; followed by a number of studies that have confirmed its feasibility and efficacy, such as HoLEP. Our aim was to present the feasibility of adopting both top and down techniques during a self-taught, ThuLEP, learning curve for a single surgeon with no previous HoLEP experience.

Materials and Methods: Between February 2018 and March 2019, a well-trained endourologist; who did not perform laser enucleation of the prostate before, started reviewing the available literature, attended more than 15 procedures at another hospital and participated in 3 laser enucleations of prostate workshops. 29 patients with a prostate size between 80 and 120 grams underwent ThuLEP without tutoring or mentor supervision. We used Revolix DUO ™ machine with a 40-watt setting for both cutting and coagulation with a 550-mic fiber for all cases.

Results: In the first 4 cases, the surgeon was unable to completely enucleate the 1st lobe and ended with an open prostatectomy. In the following 4 cases, one lobe was completely enucleated and morcellated while the other lobe was finished by bipolar resection. The following 10 cases the down technique was the primary strategy for a successful enucleation. Then the last 11 cases were successfully completed by a combination of down and top techniques. All patients had a satisfactory voiding outcome with a mean Q_{max} of 24.5 after surgery.

Conclusion: ThuLEP extraordinary hemostatic effect and the limited penetration depth may allow it to be the standard step for beginner surgeon, while adopting both top and down techniques may be the easiest way for accelerating the learning curve for surgeons performing ThuLEP.

UVID-03

Laparoscopic Partial Nephrectomy with Superselective Clamping

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Introduction and Objective: Renal carcinoma represents 2-3% of all cancers. The main approach is the surgical one. In selected cases of accessible and well-defined tumors, partial nephrectomy is the technique of choice; however, this type of procedure can compromise the oncological safety and perioperative results of the patient. The main advantages of nephron-sparing surgery are the best conservation of renal function, being comparable in terms of overall survival to the radical approach. Our objective is to show the results of the complex renal surgery within the program of complex surgery training of the urology residents in our center.

Materials and Methods: We present the case of a 77-year-old man with benign prostate hyperplasia and diabetes mellitus type 2 with grade III renal failure. During the follow-up, there was an incidental finding of renal mass due to lower urinary tract symptoms.

Results: We performed a laparoscopic partial nephrectomy (LPN) without complications, with optimal post-operative recovery. The anatomopathological report confirms a Fuhrman II clear cell carcinoma, with negative margins. The patient presents a maintained renal function without needing hemodialysis, despite his renal failure of base.

Conclusion: The LPN is a safe and effective procedure for the treatment of small and well-defined renal tumors, with good oncological and functional results. This technique requires a high learning curve, which can be initiated during residency, within a program of progressive acquisition of competences.

UVID-04

Making Partial Nephrectomy a Simple Task Using Veriset™ - Outcomes and Lessons Learnt

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Introduction and Objective: In Nephron sparing surgery (NSS), two keys are prompt hemostasis and proper closure of pelvicalyceal system (PCS). We present our experience with Veriset™ hemostatic patch (Covidien, Mansfield, MA, USA). Primary aim: feasibility and safety of Veriset™ as a hemostatic agent during NSS. Secondary objective: to assess its efficacy and the need for additional measures to secure haemostasis, post-op complications/dogmas in follow up imaging, and lessons learnt.

Materials and Methods: Fifteen renal units between June 2016 - October 2018 had NSS. After tumour excision, closure of PCS and securing bleeding points in the resection bed, Veriset™ was directly applied as per instructions. Patient demographics, tumour characteristics and intra-operative events were recorded. Follow-up imaging at 3 months was discussed at a dedicated uro-radiology meeting.

Results: 73% male and 27% were female (range 35-78 years). The median tumour size was 3.5 cm (range 1.2–6.2). 14/15 cases were done with open approach. Application of Veriset™ was easy in all patients. In 1 patient, wrong side of patch was applied and required reapplication of a second patch. Hemostasis was achieved within 5 minutes and none of the cases required renorrhaphy/bolster/additional hemostatic manoeuvres. One patient required post-operative blood transfusion. The median length of stay was 6 days (range 4 – 9). Only the case of reapplication of patch required selective polar angio-embolization. Follow up imaging did not pose any disparities.

UVID-04, Table 1.

Tumor size (cm)	No.	Avg. ischemia (min)
1 to 3.9	10	22.3
≥4	5	25.5
RENAL score		
4 to 6	10	22.5
> 6	5	25

Conclusion: Our initial experience with Veriset™ is promising and its use in NSS is feasible and safe. Easy application, rapid onset of hemostasis and safe profile aids in reducing ischemia time, any need for additional hemostatic manoeuvres and reduces surgeon's anxiety. Nephrometry score had no impact on its application and no issues were noted on follow-up imaging. Crucial steps for best outcomes with Veriset™ were: water-tight PCS closure, adequate point suturing of bleeding vessels, trimming Veriset™ to appropriate shape of the renal cortical defect, avoiding removal and reapplication of the patch.

UVID-05

Is Cortical Renorrhaphy and Approximation of Parenchyma Essential in Partial Nephrectomy?

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Introduction and Objective: Cortical Renorrhaphy is a standard method to achieve hemostasis and closure of parenchyma in partial nephrectomy (PN). However, it has a potential to compress/damage vessels in cases of large renal tumors extending up to renal hilum. There is also potential of devascularization of the parenchyma compressed by cortical sutures, leading to loss of nephrons. Herein, we are presenting a case of robot assisted partial nephrectomy (RAPN) without cortical renorrhaphy, without compromising the trifecta outcome of partial nephrectomy.

Materials and Methods: A 48-year-old male presented with 7x6 cm mid-polar heterogeneously enhancing mass in left kidney, with R.E.N.A.L. nephrometry score of 10x. Renal vein and IVC were free. Metastatic workup was negative. He underwent RAPN on using da Vinci® surgical platform (Intuitive Surgical, USA). After reflecting the descending colon, hilar dissection was done, and renal vessels were looped with vascular loops. Tumor was visualized, its margins precisely scored with the help of intra-operative USG (Flex focus 800®, BK Medicals Inc., USA). Renal artery was clamped with bulldog clamp. Tumor dissected with scissor while prospectively identifying the vessels and applying Hem-o-lok® clips (Teleflex Inc., USA). Tumor bed was sutured using 4-0 Stratafix® (Ethicon Surgical, USA). Renal artery was de-clamped, and hemostasis achieved using sutures and Floseal® (Baxter Inc., USA) while cortical renorraphy was completely avoided.

Results: Total duration of surgery was 2 hours 34 minutes. Console time was 1 hour 48 minutes. Estimated blood loss was 185 mL. Warm ischemia time was 16 minutes. There was no pelvicalyceal system injury. Post-operative period was uneventful. Post-operative hemoglobin decreased by 0.8 gm/dL while there was no significant change in serum creatinine (0.08 mg/dL). Per-urethral catheter was removed on post-operative day (POD) 1, patient was orally allowed on POD 1. Abdominal drain was removed, and he was discharged on second POD. Histopathology examination confirmed clear cell RCC with all surgical margins free.

Conclusion: PN without cortical renorrhaphy for large tumors extending up to renal hilum can decrease the risk of parenchymal loss, vascular compression and warm ischemia time without compromising the trifecta outcomes.

UVID-06

Robot Assisted Nephron Sparing Surgery: Expanding Indications Beyond the Conventional

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Introduction and Objective: Robotic nephron sparing surgery (NSS) is now established approach for small renal masses (SRM) with low and intermediate renal nephrometry score (RNS < 7). The use of a robot has been expanded to renal tumors with high RNS (?10) and the data is emerging. We have further expanded its use in simultaneously managing multiple tumors, concomitant pathologies such as stone disease and adrenal tumor. We present our experience of managing such complex cases in this video.

Materials and Methods: Prospectively maintained data of all robot assisted NSS was reviewed and those with RNS of ≥ 10 were identified. 46 out of 280 cases met the above criteria. Two patients with stone and one patient with adrenal tumor tackled simultaneously were also noted. One patient had tumor in polycystic kidney.

Results: RANSS was performed in 280 patients. 46 patients had RNS > 9. Mean age - 50.78 ± 13.42 years. Median follow up was 23 months (4-48 months). Mean operative time was 156.41 ± 46.93 minutes. Mean warm ischemia time was 26.79 ± 5.85 minutes. Median estimated blood loss (EBL) was 175 (IQR-100-262.5) mL. Pelvicalyceal (PC) violation was seen in 32 (69.5%) of the tumors. Trifecta outcomes were achieved in 65% of the patients. When compared with low and intermediate RNS, only EBL and PC violation was significantly higher in high RNS group. Post-operative complications, renal function preservation and oncological outcomes at 3 months were comparable to low and intermediate RNS groups. Two cases had simultaneous stone retrieval, one case had multiple tumors and one case of RANSS in polycystic kidney disease has also been highlighted.

Conclusion: Our data shows the feasibility of RANSS in achieving reasonable perioperative outcomes in higher nephrometry score tumors via adequate functional preservation with minimal complications and negative margin. Concomitant pathologies are also tackled well with use of robotic assistance.

UVID-08

Robot Assisted Intra-Corporeal Ileocalicostomy Ureteral Substitution for Long Segment Ureteric Stricture

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Introduction and Objective: A 33-year-old female presented to the emergency department of our hospital with urosepsis and hematuria with clot retention secondary to a complicated pyelolithotomy for left-sided pelvic calculus.

Materials and Methods: A percutaneous nephrostomy was placed for drainage as a DJ stent could not be traversed into the left renal pelvis with retrograde pyelography demonstrating complete cut-off at L4–L5 level. After stabilization, she was found to have uretero-pelvic junction obstruction (UPJO) in left solitary functioning kidney with long-segment upper ureteric stricture and nadir serum creatinine 1.5 mg/dL. Nephrostogram and CT scan revealed an intra-renal pelvis with no passage of contrast into the ureter. Primary hyperparathyroidism secondary to parathyroid adenoma was also detected and she underwent excision of the same. The long-segment ureteric stricture and need for a wide drainage ruled out pyeloplasty and ureterocalicostomy as treatment options.

Results: A wide-bore communication between the lower calyx and bladder was necessary and robot assisted ileocalicostomy was performed in this case. A 20-cm-long segment of ileum was used to replace the ureter with a suprapubic 16 Fr Foley's catheter as splint. Post-operative course was uneventful with all tubes removed by third post-operative week. Nephrostogram demonstrated gravity-dependent drainage into the bladder with no leak or anastomotic narrowing. The patient is doing well at 6 months of follow-up with a stable renal function.

Conclusion: Robot assisted ileocalicostomy is a safe and effective technique, which provides wide gravity-dependent drainage in complex UPJO with long-segment ureteric stricture and intra-renal pelvis.

UVID-09

Retrograde Endopyelotomy Using Electrocautery

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Introduction and Objective: We present a video of our experience of retrograde endopyelotomy using electrocautery with an electrode through the ureteroscope.

Materials and Methods: Since 2004, 13 retrograde endopyelotomy were performed. After ureteral dilation and safety guidewire insertion, the rigid uretero-

scope is advanced until reaching the uretero-pelvic junction (UPJ). It is mandatory that the ureteroscope pass beyond the UPJ. The endopyelotomy incision has to be performed from above the UPJ down the ureter; not the other way around. A strict lateral endopyelotomy is performed with a 2.5 Fr electrode or a 4 Fr ureteral catheter with its metallic stylet. The whole pelvic, UPJ and ureteral wall is incised, until reaching the peri-ureteral fat. Then, an endopyelotomy double-J stent or 2 double-J stents are inserted.

Results: 13 patients, 5 males and 8 females, aged from 11 to 56 years old, underwent retrograde endopyelotomy using a rigid ureteroscope, save for one patient in which endopyelotomy was performed with a flexible ureteroscope. One patient had a pelvic kidney. The UPJ obstruction was primary in 2 cases and secondary in 11 cases. The mean operative time was 35 min. No complications were noted in the peri-operative period. The double-J stents were removed between 4 to 6 months. Ten patients had good symptomatic and radiologic results. One patient had non-satisfactory radiologic result and had a successful second retrograde endopyelotomy. Two patients had complete failure with aggravation of hydronephrosis and had successful open pyeloplasty, which found a crossing vessel in both cases. The mean follow-up was 35 months.

Conclusion: Retrograde endopyelotomy with electro-cautery with an electrode through the ureteroscope has provided acceptable results in this small series. Its main advantage is the short operating time.

UVID-10

How to Remove a Double J Stent Without Forceps: The Hook

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Introduction and Objective: When the proper forceps are not available, in order to remove the double J stent with a basket, the J end of the stent has to enter between the loops of the basket. So, it may need some time to find the J tip, and more time to catch it into the basket. It is impossible to remove the stent, attracting it by the body. For this purpose, we use a hook.

Material and Methods: The metallic stylet of a ureteral catheter is used. Its tip is curved like a hook. The hook is introduced or backloaded through the working channel of the endoscope. It is tried in our glove model. An amplatz sheath is inserted into a glove, and it is fixed with ligations. The glove is filled with water. The endoscope is introduced through the amplatz sheath. At exploration, the stent is found. The hook is advanced and ensnares the stent. The endoscope is retrieved extracting the stent.

Results: The hook is back loaded into the rigid ureteroscope or mini-nephroscope, since it cannot pass through the working channel. Conversely, the hook can pass through the working channel of the cystoscope and the medium or standard nephroscope. The hook easily and quickly catches the stent by the body and attracts it. During the procedure and especially when retrieving the endoscope, the tip of the hook has to be monitored closely, to avoid mucosal injury. Also, the tip of the scope has to be elevated toward the urethral roof far from mucosa. The hook allows to perform a rigid ureteroscopy, with insertion of the guidewire and removal of the stent in the same time. The hook is backloaded into the ureteroscope. The guide wire is passed through the ureteroscope beside the hook. Which is impossible beside the forceps.

Conclusion: The hook seems to be a quick way to extract a double J stent. However, its tip has to be monitored closely, to avoid mucosal injury. Moreover, the shape of the hook might be upgraded for more safety.

UVID-11

Homemade Plastic Tri-Prong Forceps For PCNL

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Introduction and Objective: We present a video of how to make plastic tri-prong forceps using available equipment in the operating room. Then, it is tried on our endoscopic glove model.

Materials and Methods: For the prongs, a 6 Fr double J stent pusher is used. Beginning from the tip, 3 parallel and equidistant longitudinal incision of 3 to 4 cm are performed, to have three equal prongs. The tips of the three prongs are incurved. For the forceps sheath, a 12 French guidewire dispenser coils is used. A segment longer than the pusher, by 15 cm, is selected and severed. Then, a point in the dispenser is selected 5 cm shorter from the tail of the pusher. A lateral incision is performed to accommodate the exit of the pusher. The pusher is backloaded through the dispenser, until exiting through this lateral hole. The remaining length of the dispenser is curved to make the handle. Both ends of the pusher and the dispenser are fixed with a plastic clamp. The three-prongs forceps is tried through the nephroscope in our endoscopic glove model.

Results: The three prongs forceps are easy and quick to make. The inner catheter is sliding easily within the outer one. Pushing it opens the three prongs and withdrawing it closes the three prongs. It is tried with a ball of paper. The three prongs easily catch and release the ball. When used in a glove model, it passes through the nephroscope operating channel. It was effective to catch and extract the stones. However, the stone grasping is not very strong. Because the pusher is little flexible; thus the 3 prongs are flexible. It is better to have a more rigid one, to have a good grip.

Conclusion: This plastic tri-prong forceps are feasible. It might solve a difficult situation if the metallic one broke during the procedure. However, it needs to be upgraded.

UVID-12

Extra Urological Application of Endourology

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Introduction and Objective: The endourological procedures have been an advancement in minimally invasive surgery, offering an optimal resolution of complex cases with minimally invasive approaches and short hospital stays. Its applications and uses can be extrapolated to other specialties with the support of highly experienced teams. In this video, we present some of the applications of endourological surgery by using the flexible ureteroscope in the laparoscopic approach of the bile duct as well as the nephroscope for retroperitoneal approach in cases of pancreatic necrosis.

Materials and Methods: We present the case of a patient with suspected obstruction of the bile duct, who required a choledochoscopy by introducing a flexible ureteroscope during a laparoscopic approach. The second case shows a patient with pancreatitis and the presence of an abscess and pancreatic necrosis. A percutaneous approach is performed through the use of minimally invasive renal surgery techniques.

Results and Conclusion: The endoscopic procedures of urological surgery are explorable and applicable to other disciplines, achieving the resolution of complex pathology with minimally invasive approaches through multidisciplinary collaboration.

UVID-13

Ureteroileal Anastomosis Stricture: Laparoscopic Management

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Introduction and Objective: Ureteroileal anastomosis stricture is the most frequent complication after radical cystectomy. It is diagnosed between 3-11% of cases according to the series, and most of them are diagnosed during the first year after surgery.

Materials and Methods: A 64-year-old man with a laparoscopic radical cystoprostatectomy due to muscle invasive bladder cancer and ileal conduit, presented bilateral obstructive pyelonephritis 2 months after surgery due to ureteroileal anastomosis stricture. The uretero-ileal anastomosis was type Wallece II. A bilateral nephrostomy tube was placed. Nephrostomy pyelography revealed bilateral stenosis in the distal ureteral section with filiform contrast to ileal conduit. Dilatation with balloon catheter was performed, persisting left ureteral stenosis. The patient underwent a laparoscopic left uretero-ileal reimplantation according to the technique described by Dr. Rosales (Laparoscopic management of ureteroileal anastomosis

strictures: Initial experience, Eur Urol. 2016 Sep; 70 (3): 493-8).

Results: The surgical time was 5 hours; the hospital stay was 4 days and there were no complications in the post-operative period. The pathological anatomy reported a chronic inflammation without evidence of neoplasm. At 15 months after surgery, the patient remains asymptomatic, without catheters, and with creatinine levels of 1.3 mg/dL. The CT scan performed rule out stenosis relapse and leakage.

Conclusion: The laparoscopic approach in patients with ureteral strictures after ileal conduit, is feasible and safe with good results and without long-term complications.

UVID-14

Self-Insertion of Urethral Foreign Body: A Simple Endoscopic Technique for Removal of a Metal Forceps from Male Urethra

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Introduction and Objective: Foreign bodies of the urethra and bladder are seldom seen in clinical urologic practice with iatrogenic injury, self-insertion, and rarely migration from adjacent sites. Treatment is focused on foreign body extraction, diagnosing complications, and avoiding compromise of erectile function. In this case, we present our endoscopic technique for removal of a metal forceps from male urethra.

Materials and Methods: A 22-year-old male presented with history of inserting a metal foreign body into his urethra 4 years ago. His physical examination showed a non-distended bladder, normal external urethral meatus, and a palpable long foreign body from the mid-shaft of the penis to beyond the penoscrotal junction. X-rays of the pelvis and ascending urethrogram showed a metal forceps in the anterior urethra. Cystoscopy demonstrated the metal forceps with its closed end embedded in a false passage at the proximal end of the bulbous urethra. Our endoscopic technique was accomplished by asking the assistant to close the open end of the forceps by external pressure on the palpable sides of the forceps through the penile shaft, then an endoscopic foreign body forceps was introduced, and the distal closed end of the metal forceps was held under vision and pulled out. No urethral catheter was inserted, the patient voided well and went home post procedure.

Results: This case is interesting, as the insertion of a metal forceps in male urethra hasn't been mentioned in literature except only once. The open thumb metal forceps poses more technical difficulties during endoscopic extraction, and this is because of its sharp open distal ends, which can injure the urethra during removal. This technique warrants safe endoscopic removal of metal forceps and avoids open surgery.

Conclusion: Urethral foreign body extraction can be achieved endoscopically. However, a more holistic approach to management is crucial, which includes, prevention of complications or further urethral injury. In the case of open metal forceps, we recommend the use of external pressure technique to aid extraction without injuring the urethra any further. Psychiatric consultation is recommended to prevent further attempts at insertion of other foreign bodies in the urinary tract.

UVID-15

Robot-Assisted Radical Prostatectomy Based on Cancer Localization Diagnosed by MRI-TRUS Fusion Prostate Biopsy

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Introduction and Objective: MRI target biopsy has a higher detection rate of clinically significant cancer than standard systematic biopsy, and as a method, MRI-TRUS fusion prostate biopsy is gradually spreading in Japan. To examine the usefulness of cancer localization diagnosed by MRI-TRUS fusion biopsy in robot-assisted radical prostatectomy (RARP), we analyzed the resected specimen of cases in which RARP was performed after MRI-TRUS fusion biopsy.

Materials and Methods: We examined the clinical outcomes of 15 patients who underwent RARP after MRI-TRUS fusion biopsy at our hospital from February to September 2018. MRI was performed prior to biopsy, and we conducted target biopsy of about 3 per lesion, in addition to systematic 12 cores biopsy for cases with PI-RADS category 3 or higher lesions using the MRI-TRUS fusion biopsy system (KOELIS TRINITY). The 3D cancer mapping image by MRI-TRUS fusion biopsy was used as an index for determining the resection range during RARP.

Results: The average age and PSA at biopsy were 70 years old and 10.9 ng/ml. PI-RADS category 3, 4 and 5 were 2, 12 and 1 cases, respectively. Gleason score in biopsy was 2 cases of 6, 8 cases of 7, 4 cases of 8 and 1 case of 9. The detection rate of significant cancer (SC; GS ≥ 7) was 13/15 (87%) by target biopsy, and 9/15 (60%) by systematic biopsy. In the RARP, nerve preservation was performed in 9 cases (6 patients on both sides, 3 cases on one side). The pathology of extracted specimen was 3 cases of pT2a, 10 cases of pT2c and 2 cases of pT3a, and positive resection margin was observed in 1 case of pT3. Gleason score in RARP was 10 cases of 7, 2 cases of 8 and 3 cases of 9. The 3D cancer mapping image was almost consistent with the localization of significant cancer in the resected specimen. The urinary continence (0-1 pad/day) rates 1, 2 and 3 months after RARP were 54%, 71% and 86%, respectively.

Conclusion: MRI-TRUS fusion biopsy is useful for the detection of clinically significant cancer and diagnosis of cancer localization, suggesting that it may be useful for determination of nerve preservation adaptation and resection range in RARP.

UVID-16

Completely Intracorporeally Laparoscopic Radical Cystectomy and Orthotopic Detaenial Sigmoid Neobladder: The Initial Experience

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Introduction and Objective: Radical cystectomy with lymph node dissection and urinary diversion is the gold-standard treatment for muscle-invasive bladder cancer. We herein illustrate the operative technique of completely intra-corporeally laparoscopic orthotropic detail sigmoid neo-bladder and perioperative outcome of the initial 10 cases.

Materials and Methods: The procedure was performed in ten consecutive bladder cancer patients. Conventional bilateral pelvic lymphadenectomy and radical cystectomy were completed with the urethral sphincter preserved. The specimen was retrieved and manipulated in a homemade tissue morcellate appliance. For the creation of the detail sigmoid neo-bladder, a 20 cm segment of sigmoid was mobilized and the detail procedure under the laparoscope is done with a water injection design which simulated procedures of open surgery. By using the inherent gap between muscular and mucosa of the sigmoid, and the pressure of the pneumoperitoneum, seromuscular layer between omental taenia and free taenia were removed continuously. Approximately 2 square centimeters of the seromuscular layer was preserved at the central portion and two ends of the isolated sigmoid to strengthen the urethral and ureterointestinal anastomosis respectively. Each ureterointestinal anastomosis was done in a continuous manner using 2 separate 4-0 polyglactin sutures. Before the anastomosis, the single J stent was advanced up to the renal pelvis. All suturing was done exclusively using free-hand laparoscopic techniques. Demographic, peri-operative, pathological and functional data were collected.

Results: All operations were going on well without severe complications or conversion to open surgery. Mean operative time was 392 ± 26.79 min, with 358 ± 55.4 cc mean blood loss, only one patient underwent intraoperative blood transfusion. Surgical margins and the pelvic lymph nodes were all negative, confirmed by histopathology. The patients resumed ambulation on post-operative day 3, and oral liquids were resumed on day 4. Hospital stay was 12.3 days. Catheterization time was 2 weeks post-operative with a cystogram confirmed watertight healing. The single J stents were removed 4 weeks post-operative Clavien-Dindo grade I, II complications within 30 days were 20%, and 20%, respectively. No grade III or above complications.

Conclusion: Completely intra-corporeally laparoscopic radical cystectomy and orthotropic detail sigmoid neo-bladder is technically feasibility. This is an initial experience including a limited number of patients with a restricted follow-up time, the long term functional and oncologic outcomes of this procedure require longer term follow-up data to verify.

UVID-17

Ventral Inlay Buccal Mucosal Graft Urethroplasty (VI-BMGU) in Female Urethral Stricture Disease (USD), Our Initial Experience

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Introduction and Objective: To present our initial experience with ventral inlay buccal mucosal graft urethroplasty (VI-BMGU) in female urethral stricture disease (USD).

Materials and Methods: Between May 2016 to June 2018, twelve women with USD underwent VI-BMGU. All women were evaluated pre-operatively with the American Urological Association (AUA) symptom score, uroflowmetry, calibration with 12 Fr catheter and ultrasonography with post void residual (PVR) urine measurement. Micturating cystourethrography was performed in select cases. Intra-operative confirmation of stricture was done with 6 Fr cystoscope. Post-operatively, the women were followed at 3, 6 and 12 months after surgery with AUA symptom score, uroflowmetry, and PVR estimation. Increase in AUA symptom score, maximum flow rate (Q_{max}) < 12 ml/s, and failure to calibrate with 18 Fr catheters were considered as recurrence of the disease.

Results: The mean age of the patients was 41 years. The mean follow-up period was 18 months. All women voided successfully after catheter removal. There was an improvement in AUA symptom score, Q_{max} and reduction in PVR at 3, 6 and 12 months. One woman had recurrence of stricture at 6 months and was treated by urethral dilatation followed by institution of self-dilatation regimen. Success rate was 92%.

Conclusion: VI-BMGU is a simple and safe method of urethroplasty in women. Studies with larger sample size and a longer follow-up are required to document the long-term success of this procedure.

UVID-18

Multiple Renal Arteries in Laparoscopic Donor Nephrectomy

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Introduction and Objective: Multiple renal artery kidneys represent a special challenge for surgeons, during both donor nephrectomy and renal transplantation. This video aims to show our center's experience in a laparoscopically procedure in either single early branching or dual renal artery kidneys. Laparoscopic donor nephrectomy was limited to the left kidney with single renal vessels but nowadays, criteria to accept donated arteries are markedly extended due to emerging of laparoscopic living donor nephrectomy. Laparoscopic donor nephrectomy is of great advantage for donor recovery and length of stay.

Materials and Methods: In this video presentation, we are presenting a sample of three videos (laparoscopic donor nephrectomy: for a single artery and vein, early branching arteries and dual renal arteries). All of them were left-sided kidneys, with usage of stapler to control arteries and veins, hemlocks used to control ureters, and endo-bags used to gain the kidneys.

Results: From a total of 450 laparoscopic donor nephrectomies, 77 (17.1%) were on kidneys having dual renal arteries (DRA). The mean duration of the surgery was 225 min and 240 min in single and dual renal artery groups; the mean warm and cold ischemia times were statistically similar in both groups. There were no complications or conversion to open among donors in both groups. There were no statistically significant differences in hospital stay of the donors and immediate allograft function among the two groups.

Conclusion: Laparoscopic donor nephrectomy was found to be safe in the donors with multiple renal arteries in our experienced surgical teams, as much as in donors with single arteries.

UVID-19

A Laparoscopic Approach in a Rare Cause of Bladder Stone

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Introduction and Objective: The intrauterine device (IUD) is a contraceptive method which has been used for many years. Uterine perforation with migration of IUD into the pelvic cavity, including the bladder is a rare complication. Laparoscopic surgery can be used for the removal of IUD.

Materials and Methods: We review a case of IUD perforation with migration into the bladder and subsequent stone formation, treated with laparoscopic approach.

Results: A 55-year-old woman with history of cervical carcinoma treated with radio-chemotherapy, presents 9 years after, with recurrent urinary tract infection and urinary incontinence. CT scan showed a large bladder calculus (maximum diameter 4.5 cm) with severe bilateral hydronephrosis. Furthermore, vesicovaginal fistula was identified. The patient underwent general anaesthesia, a bilateral ureteral stents placement and cystolithotomy by laparoscopic approach. After incision of a markedly thickened bladder wall, calculus fragmentation with IUD extraction was laboriously achieved. The fragments of the calculus were removed with use of Endobag®. A mobilization of an omental flap was performed. Due to difficult access, uncertain identification of fistula tract and high risk of infection, vesicovaginal fistula correction was postponed.

Conclusion: IUD is usually a safe contraceptive method. However, IUD perforation is rare but serious complication, which may present with bladder migration and secondary stone formation. Laparoscopic surgery can be used safely for stone fragmentation and removal of IUD.

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UP-001

Laparoscopic Surgery for Adrenal Tumors: A Single Surgeon's Experience from 52 Cases

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Introduction and Objective: We evaluated the outcomes of 52 laparoscopic adrenalectomies performed by a single surgeon.

Materials and Methods: Data from 52 patients who underwent laparoscopic adrenalectomy between 1999 and 2018 were retrospectively reviewed. The parameters were approach (transperitoneal or retroperitoneal), operating time, estimated blood loss, surgical complications, and learning curve. Data were expressed as median.

Results: The study group included 27 males and 25 females, with a median age of 58 years (28–86 years). The tumor was located on the right side in 23 patients and on the left in 29. Pathologies included aldosteronoma in 20 patients, non-functioning adenoma in 10, pheochromocytoma in 9, malignant tumor in 5, Cushing's syndrome in 4, myelolipoma in 3, and ganglioneuroma in 1. Median tumor size across all patients was 26.5 mm (8–105 mm). In total, 29 patients were treated using the transperitoneal approach, while 23 were treated using the retroperitoneal approach. No major complications were recorded in any of the cases. One case presenting with a malignant tumor required conversion to open surgery due to severe adhesion. Excluding this unique case, median operating time was 149 min (88–286 min) and estimated blood loss was 50 ml (5–400 ml). No significant differences were observed in the operating time (155 min on the right side and 142 min on the left) and in estimated blood loss (57.5 ml on the right and 50 ml on the left) when patients were divided into two groups with respect to the tumor location. Furthermore, no significant differences were observed between the transperitoneal and retroperitoneal approaches with respect to the operating time (153 and 142 min, respectively) and estimated blood loss (30 and 60 ml, respectively). Regarding the learning curve, the operating time and estimated blood loss significantly decreased in the remaining 26 cases when compared with the first 25 cases ($p = 0.0001$).

Conclusion: Regardless of the approach, laparoscopy is a safe and feasible treatment option for adrenal tumors.

UP-002

Surgical Management of Pheochromocytoma: Current Indications and Outcomes of Open Surgery

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Introduction and Objective: To evaluate the indications and outcomes of open surgery for pheochromocytomas and paragangliomas (PC/PG) and to define the role of this approach in the current era of minimally invasive surgery.

Materials and Methods: Data of patients undergoing PC/PG surgery between July 2008 and July 2017 was retrieved from our prospectively maintained electronic database and hospital records. Tumor characteristics, operative and recovery parameters, and complications were evaluated for indications of open procedure and outcomes.

Results: During the study period, 106 patients underwent 124 procedures for PC including 18 simultaneous bilateral procedures. Surgeries included 102 adrenalectomies, 18 paraganglioma (PG) excisions, 1 partial adrenalectomy and 3 partial cystectomies. 25 (23.6%) patients (mean age 38.2 years, range 14-69) underwent open procedure, including 4 bilateral procedures. This included 16 patients undergoing adrenalectomies and 9 PG excisions. The indications for open surgery were unilateral large tumors (5; size 8-16, mean 11 cm), bilateral large tumors with central necrosis (2; size 6-10, mean 8.2 cm), retrocaval tumor extension (4), interaortocaval PGs (8), Retro-mesenteric PG (1), concomitant procedures (3), and conversion from laparoscopy (2). Mean operative time was 220 minutes (120-360), blood loss was 868 mL (100-2800), 11 patients required a blood transfusion, and hospital stay was 6.44 days (3-13). All these parameters were higher than for minimally invasive surgery in this cohort. Three patients suffered a post-operative complication.

Conclusion: Open surgery is most often indicated for large tumors especially with central necrosis or those located in the inter-aortocaval region. Most such procedures require large incisions and possible hepatic mobilization on the right side. The procedures can be safely completed with few complications.

UP-003

Laparoscopic Simultaneous Bilateral Adrenalectomy - Indications and Outcomes from a Retrospective Cohort

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Introduction and Objective: To report our experience of indications, feasibility and outcomes of laparoscopic simultaneous bilateral adrenalectomy (LSBA) at a tertiary care center and compare with open simultaneous bilateral adrenalectomy (OSBA).

Materials and Methods: Data of patients undergoing simultaneous bilateral adrenalectomy (SBA) between July 2008 and March 2019 was retrieved from our prospectively maintained electronic database and hospital records. Tumor characteristics, operative and recovery parameters, and complications were evaluated for indications and outcomes of LSBA vs OSBA.

Results: During the study period, 37 patients (mean age 31.1 years, range 13-62) underwent SBA, out of which 31 underwent LSBA and 6 underwent OSBA. The various indications for SBA were bilateral pheochromocytomas (25, LSBA-20, OSBA-5), Cushing syndrome (11, all LSBA) and ACC (1, OSBA). Mean tumor size in LSBA and OSBA group was 3.7 cm (1.7-5.5) and 8.6 cm (4-13) respectively. Mean operative time for LSBA group was 185 minutes (120-300) including repositioning and reprepping time, as compared to 197 minutes (165-240) for OSBA group. Mean blood loss was 163 ml (50-1000) in LSBA group and 666 ml (400-1000) in OSBA group. Only one patient required blood transfusion in LSBA group while four patients in OSBA group required transfusion. Mean hospital stay in LSBA and OSBA groups were 3.64 days (1-12) and 7.66 days (3-11) respectively. Two patients in LSBA group (6.45%) and one in OSBA group (16.6%) suffered post-operative complication in the form of intra-abdominal collection requiring pigtail drainage.

Conclusion: LSBA is feasible and safe in patients requiring bilateral adrenalectomy, e.g. bilateral pheochromocytomas and refractory Cushing syndrome, and associated with low morbidity and earlier recovery compared to OSBA. The better convalescence and cosmetic outcomes associated with LSBA may especially encourage endocrinologists to consider bilateral adrenalectomy earlier in the management of Cushing syndrome after failed attempt to control primary source.

UP-004

Impacts of Cerebrolysin on SCI-Induced Neurogenic Bladder Dysfunction in Animal Model

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Introduction and Objective: We studied the effect of cerebrolysin on neurogenic bladder in spinal cord injured Wistar rats.

Materials and Methods: A total of sixty female Wistar rats randomly divided into 10 groups (n=6). All of the rats were separated into 10 groups (n=6 in per group) as follows: control, sham-operated, SCI animals received saline normal daily for 1 week or 4 weeks, three acute and chronic treatment groups including SCI animals received 1, 2.5 and 5 mL/kg CL for 1 week and 4 weeks. Drug intervention began just after complete transection at the T9-T10 level of rat spinal cord. In acute groups, intraperitoneal injection of cerebrolysin performed for 7 days (1 week) and in chronic groups continued for 28 days (4 weeks). At the end of drug intervention, spinal cord and bladder tissue were harvested for immunohistological and western blotting process.

Results: Immunohistochemical evaluation of GAP43 (growth associated protein 43), a marker of axonal sprouting, in spinal cord tissue showed that in the chronic phase, there was a significant difference among sham and SCI+saline (4 weeks) groups ($p < 0.01$), but in acute group, there were no significant differences among sham and SCI+saline (1 week) groups ($p = 0.064$). Also, a significant difference was observed between intervention and SCI+saline groups in all three groups received 1, 2.5, and 5 mL/kg cerebrolysin ($p < 0.001$), in the both of acute and chronic phase. Immunoblotting analysis of ERK1/2 expression in spinal cord showed that in the both of acute and chronic phases, ERK1/2 expression in the

spinal cord in groups received cerebrolysin in 2.5, and 5 mL/kg in compare to SCI+saline groups significantly increased ($p < 0.01$), ($p < 0.001$), respectively. Immunoblotting analysis of ERK1/2 expression in bladder showed that in both acute and chronic phase there was a significant difference between intervention and SCI+saline groups and among all intervention groups ($p < 0.001$). No significant differences were observed among SCI-saline and sham groups in both acute ($p = 0.95$) and chronic phase ($p = 0.97$).

Conclusion: Our results show that Cerebrolysin as a mixed growth factor have a potential role in the improvement of neural pathways and neurogenesis in the spinal cord and bladder. This new finding of the effect of Cerebrolysin in the improvement of neurogenic bladder disorder could be useful in SCI patients.

UP-005

The Impact of a New Interleukin-2 Based Immunotherapy Candidate on Urothelial Cells to Support Use for Intravesical Drug Delivery

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Introduction and Objective: Intravesical instillation of Interleukin-2 (IL-2) has been shown to be very well tolerated and promising in patients with bladder malignancies. This study aims to confirm the use of a new IL-2 based immunotherapy candidate as safe for intravesical application. IL-2, produced in mammalian cells, is glycosylated and therefore due to unique solubility and stability optimised for intravesical use.

Materials and Methods: Urothelial cells and fibroblasts were generated out of porcine bladder and cultured until they reached second passage. Afterwards they were cultivated in REM and DMEM with four different types of human Interleukin-2 immunotherapy products (IMS-Research, IMS-Pure, Natural IL-2, Aldesleukin) in four different concentrations (100, 250, 500, 1000 IU) and compared to negative control. Cell proliferation was analysed by WST proliferation assay after 0, 3 and 6 days for single cell culture and co-culture.

Results: Proliferation Assays showed that all IL-2 products induced very similar cultivation results and none of the IL-2 variants had a negative or positive impact on proliferation of urothelial cells and fibroblast in neither concentration.

Conclusion: Human recombinant glycosylated IL-2 has no negative or positive influence on tissue cell proliferation of urothelial cells and fibroblast, and represents a safe and promising innovative potential intravesical therapy candidate for patients in high need.

UP-006

The Effects of a High Sodium Diet on Lithogenesis in an Experimental Rat Model of Renal Calcium Oxalate Stone Formation

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Introduction and Objective: The aim of this study was to investigate the effects of a high and low sodium diet on lithogenesis in a rat experimental model of calcium oxalate stone formation.

Materials and Methods: Twenty male Wistar rats were randomly divided into the following four groups: group A- 4% NaCl+1% ethylene glycol (EG); group B- 8% NaCl+1% EG; group C- 8% NaCl+normal drinking-water; and group D- 1% EG+ normal diet. The rats were fed in metabolic cages, and their urine volume was recorded every day. All rats were sacrificed four weeks later, and blood samples were collected via cardiac puncture. Kidney samples were collected for Von Kossa staining to evaluate the formation of calcium-containing crystals. The final 24 h urine samples were also gathered for metabolic analysis.

Results: Von Kossa staining demonstrated that rats in both groups A and B had significantly more renal calcium crystals than those in group D. In addition, the final 24 h urinary volume of group B was significantly increased (142.26±20.91 mL) compared to group A (100.52±28.23 mL), group C (107.35±14.23 mL), and group D (40.78±8.71 mL) ($P = 0.004$, 0.012, and 0.000, respectively). Levels of urine sodium (Na), potassium (K), chlorine (Cl), calcium (Ca), and urea nitrogen of group B were significantly higher than group D. The levels of urine phosphorus, oxalate, creatinine and the urine specific gravity and urine pH between group B and group D were similar. The concentration of serum sodium of group B (151.26±4.06 mmol/L) was higher than that of group D (145.56±1.12 mmol/L) ($P = 0.002$).

Conclusion: A high salt diet increased urine volume and resulted in urine metabolism changes and promoted stone formation in this rat calcium oxalate lithogenesis model. A lower salt diet may suppress the development of urinary stones.

UP-007

Renal Zinc Accumulation is Critical for the Protection of Exogenous Zinc Preconditioning Against Renal Ischaemia-Reperfusion Injury

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Introduction and Objective: Annual costs associated with in-hospital acute kidney injury (AKI) in the US alone exceed $10 billion. Renal ischaemia reperfusion injury (IRI) is the leading cause of AKI in these patients. Despite extensive research, there is no way to protect against renal IRI. Our group has demonstrated that zinc (Zn) preconditioning (PC) protects against renal IRI in rat and sheep models. However, the mechanisms of Zn PC remain unknown. Dysfunctional cellular metal homeostasis has been suggested as a pivotal mechanism of cellular death in IRI. The effect of Zn PC on renal concentrations of Zn and other metals in the context of IRI is not known. Furthermore, other key putative mechanisms of renal IRI include inflammatory, apoptotic, and oxidative stress pathways. Interleukin-6 (IL-6), Bax & Bak, and glutathione peroxidase-1 (GpX1) are proteins centrally involved in these respective pathways. The role of Zn in these key pathways, and the relationship of Zn PC to these pivotal mediators in IRI, is not known.

Materials and Methods: Eight-to-twelve-week-old wild-type C57BL/6 mice were preconditioned with intraperitoneal injection of $ZnCl_2$ (10mg/kg) or control, 24 hrs and 4 hrs prior to right nephrectomy and 30 mins of left renal ischaemia. Serum creatinine and urea were measured after 48 hours of reperfusion. Renal histology and tissue metal analyses were performed. The same protocol was applied to three separate C57BL/6 mouse strains, with genetic KO of IL-6, Bax & Bak, or GpX1.

Results: Significant differences were observed in renal concentrations of Na^+, Mg^{2+}, Ca^{2+}, & Fe^{2+}as a result of renal IR. Zn PC had no effect on the concentrations of these metals. Renal Zn was 1.46-fold greater in Zn-treated animals compared with control ($p = <0.01$). Zn-treated mice in all strains had significantly improved renal parameters compared with saline-treated controls. However, protection with Zn was attenuated by KO of IL-6.

Conclusion: Protection with Zn PC is associated with elevated renal Zn. Protection is not affected by KO of Bax & Bak, or GpX1. Protection with Zn is attenuated by IL-6 KO, which may be a result of reduced IL-6-mediated cellular Zn uptake, or inhibition of metallothionein induction, which is also mediated by IL-6.

UP-008

The Role of Short Chain Fatty Acids in Renal Calcium Oxalate Stones Formation

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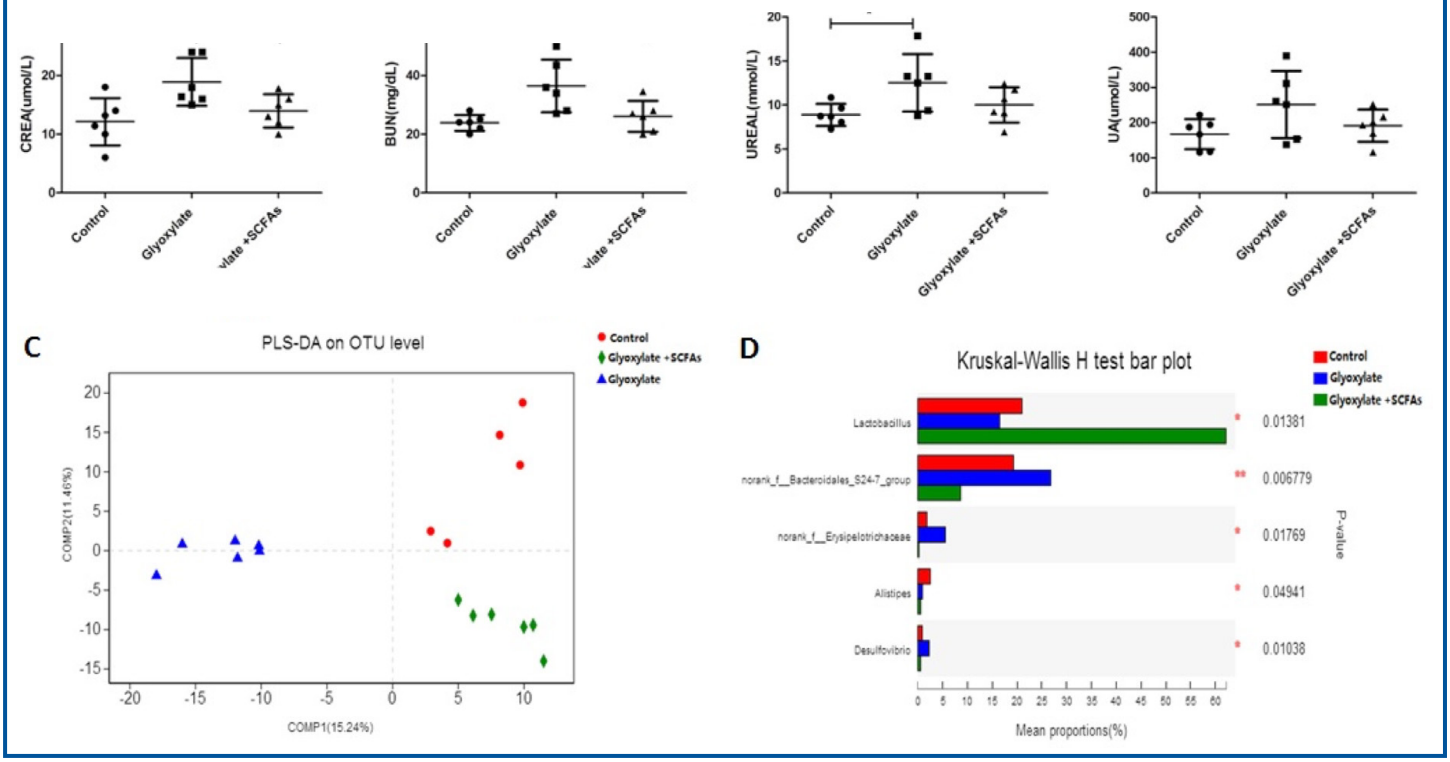
Introduction and Objective: Calcium oxalate stone is the most common type of nephrolithiasis, however the etiology is still unclear. Short-chain fatty acids (SCFA) are major products of gut microbial fermentation and profoundly affect host health and disease, which can regulate immune system and have protective effects on epithelial cells. This study aims to investigate renal crystal formation and deposition, in mice after orally administered with SCFAs, and analyze the change of gut microbiome in mice with renal crystal deposition after orally administered SCFAs.

Materials and Methods: Glyoxylate was administrated intraperitoneally to C57BL/6J mice for five consecutive days to establish a mouse model of kidney calcium oxalate crystal formation and deposition with or without orally administered SCFAs. Kidney, serum and cecum content were collected from mice. 16S ribosomal RNA (rRNA) sequencing was performed to analyze the microbiome composition. Serum creatinine, BUN, urea and uric acid were detected, and renal crystal formation and deposition was detected by Von Kossa staining.

Results: After intraperitoneally administrated glyoxylate, mice had large amounts of renal calcium oxalate crystal deposition with fibrosis and infiltrated inflammatory cell in kidney. Renal calcium oxalate crystal deposition was significantly decreased in mice with orally administered SCFAs. Also, the serum creatinine, BUN and urea were significantly decreased in mice with orally administered SCFAs. The gut community compositions were difference among control mice, glyoxylate induced model mice and glyoxylate

UP.008, Figure 1. Serum level of creatinine, BUN, urea and uric acid (B). Partial Least Squares Discriminant Analysis (C) and (D) the differences of microbiome composition among control mice, glyoxylate induced mice and glyoxylate induced mice with SCFAs.



induced mice with SCFAs. Interestingly, we found Lactobacillus was increased significantly in glyoxylate induced mice with SCFAs than control mice and glyoxylate induced mice. Functional prediction of 16S rRNA showed increased glutathione metabolism, ion channel, cytochrome P450 and vitamin A metabolism pathway abundance after the administration of SCFAs, suggesting that these metabolism pathways were correlation with anti-inflammatory.

Conclusion: SCFAs may prevent renal crystal formation and deposition by regulating gut microbiome composition and anti-inflammatory pathway.

UP-009

Intracavernosal Injection of Platelet Rich Plasma (PRP) Improve Erectile Function in Streptozotocin-induced Diabetic Rats

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Introduction and Objective: Platelet rich plasma (PRP) has shown to prevent the atrophy of corporal smooth muscle cell and enhance the regeneration of nerve fiber in cavernous nerve injury rat model. We investigate the effects of PRP on the recovery of erectile dysfunction in streptozotocin (STZ)-induced diabetic rats.

Materials and Methods: Six-week-old SD male rats received intraperitoneal (IP) injection of STZ (65 mg/kg) or vehicle injection after a 16 hour fast. Twelve weeks later, the erectile function in the entire rat was assessed by measuring intracavernosal pressure (ICP) and other functional parameters of erectile function. Diabetics with erectile dysfunction (ED) rats were divided into two groups: the intracavernosal injection vehicle-only or PRP treatment. The control without STZ injection and diabetic rat without ED were as a control. Four weeks after treatment, erectile function was assessed by measuring ICP. Penile tissues were collected to undergoing the histomorphometrically analyzed and further perform ultrastructural analysis of the corpus cavernosum.

Results: Intracavernosal injection of PRP increased all erectile function parameters at 28-day post-treatment. Ultrastructural analysis revealed the tissue protection of PRP is through maintaining the structure of adherens junctions to keep the integrity of the corpus cavernosum.

Conclusion: Intracavernosal injection of PRP treatment improved erectile function in STZ-induced diabetic rats through the protection of corpus cavernosum. PRP may have the potential for clinical use of diabetes with ED in the future.

UP-010

The Effect of Irrigation Power and Ureteral Access Sheath Diameter on the Maximal Inra-Pelvic Pressure During Ureteroscopy: In-Vivo Experimental Study in a Porcine Model

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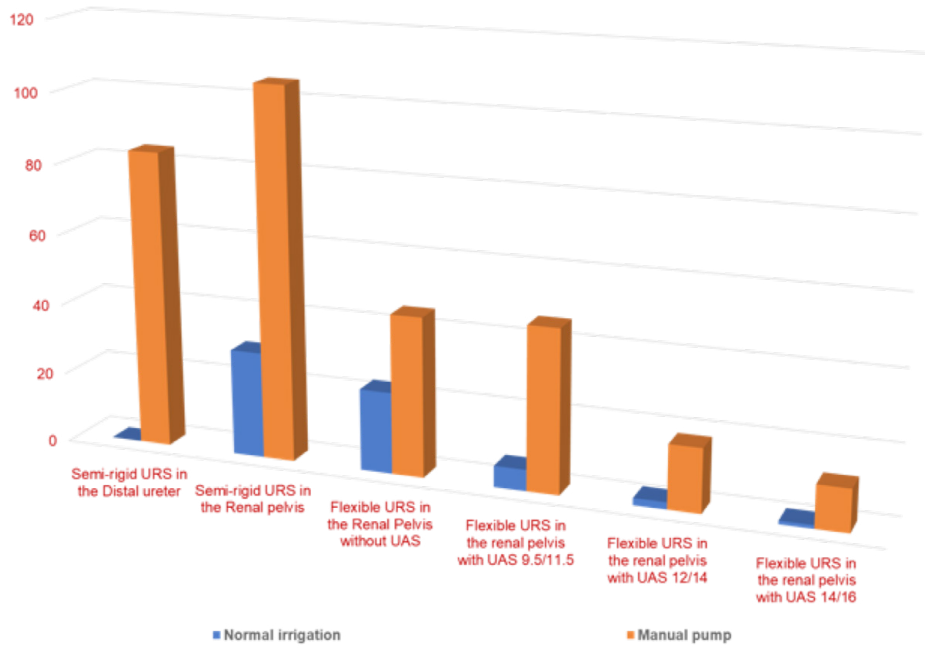
Introduction and Objective: To assess the effect of irrigation settings and the size of ureteral access sheath (UAS) on the maximal inra-pelvic pressure (IPPmax) during ureteroscopy.

Materials and Methods: In supine position, 3 anesthetized female pigs underwent cystoscopy to insert a 6F ureteral catheter in each ureter. Pigs were then turned to prone position to establish a percutaneous access, insert a 10F nephrostomy tube in the kidney, and connect it to the (P-ves) side of a Urodynamic device. Irrigation was connected to the 8F semi-rigid Ureteroscope or the Flex-X2 Flexible Ureteroscope and two irrigation settings; gravity flow and manual pumping were used. Ureteroscopy was performed without UAS and with the UAS 9.5/11, 12/14, 14/16 at the uretero-pelvic junction and the IPPmax was recorded.

Results: Under gravity irrigation, the recorded IPPmax during semi-rigid URS in the distal ureter and the renal-pelvis was 0, 30 cmH2O, respectively. Furthermore, the IPPmax during flexible URS in the renal-pelvis without UAS, with UAS 9.5/11.5, with UAS 12/14, with UAS 14/16 was 23, 6, 2, 1 cmH2O, respectively. Under manual pumping, the IPPmax during semi-rigid URs in the distal ureter and the renal-pelvis was 84, 105 cmH2O, respectively. Furthermore, the IPPmax during flexible URS in the renal-pelvis without UAS, with UAS 9.5/11.5, with UAS 12/14, with UAS 14/16 was 45, 46, 18, 1 cmH2O, respectively (Figure 1).

Conclusion: Manual pumping irrigation can significantly increase the IPPmax to unsafe levels during URS. The use of UAS can render URS safer, thus acts as a safeguard against the consequences of high IPP.

UP.010, Figure 1.



UP-011

The Distribution of Paclitaxel in Rabbits' Urethra After Inflation of Paclitaxel-Eluting Balloon: Pilot Experimental Study

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Introduction and Objective: Urethral strictures are a common urological problem which could require complex reconstructive procedures. Urethral dilation is a frequent intervention associated with high recurrence rates. Drug-coated balloons with cytostatic drugs have been successfully used for the prevention of vascular restenosis after balloon dilation. These balloons could be used in the urethra to reduce the restenosis rates of urethral dilation. Nevertheless, the urothelium is different from the vascular endothelium and these drugs may not be distributed to the outer layers of the urethra. Therefore, we performed this experiment to evaluate the distribution of paclitaxel (PTX) in the rabbit urethra after the inflation of a PTX-coated balloon (PCB).

Materials and Methods: Eleven rabbits underwent dilation of the posterior urethra with common endoscopic balloons after urethrography. Nine of these rabbits were additionally undergone dilation with PCB. The urethras of the 2 control animals were removed along with 3 more dilated with PCB urethras immediately after the dilation. The remaining of the urethras were removed after 24 (n= 3) and 48 hours (n= 3). The posterior segments of the urethras were evaluated with Hematoxylin and Eosin staining, as well as with immunohistochemistry (IHC) with polyclonal anti-paclitaxel antibody.

Results: The two control specimens showed denudation of the urothelium after balloon dilations and no PTX was observed. All urethral specimens from those dilated with PCB showed distribution of PTX to all layers of the urethra. The specimens which were immediately removed exhibited denudation of the urothelium without any inflammation. The specimens removed at 24 and 48 hours showed mild acute inflammation.

Conclusion: PTX is distributed to all layers of the rabbit urethra after PCB inflation. Thus, PTX could exert its activity to the smooth muscle cells which are responsible for the production of collagen and restenosis of the urethra.

UP-012

A Systematic Review of Preclinical Studies on Therapeutic Potential of Stem Cells or Stem Cell Products in Peritoneal Fibrosis

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Introduction and Objective: Peritoneal fibrosis remains a serious complication of long-term peritoneal dialysis. Stem cell therapy is an innovative field of scientific investigation with potential for clinical application. Here, we systematically reviewed the studies to determine whether stem cell-based therapy could improve the peritoneal fibrosis in experimental models of peritoneal fibrosis.

Materials and Methods: Our systematic search of PubMed, Scopus, Web of Science, and Cochrane Library yield 5219 article. After screening for eligibility, *in vivo*, experimental, interventional studies using stem cells in animal models of peritoneal fibrosis; 11 articles were included. The studies underwent comprehensive review, quality assessment, and data extraction.

Results: Mesenchymal stem cells were the most used type (90.9%) originated either from bone marrow (70%), adipose tissue (20%), or umbilical cord (10%). In 90.9% of studies, stem cells were injected after peritoneal insult and 63.6% of studies used the intraperitoneal injection route. Eight studies met the ≥ 50% of criteria indicated by ARRIVE recommendation. Information regarding the nature of ethical review permissions, species, strain and gender, dose, route and duration of treatment, was stated by all studies; 81.8% of the studies reported the number of animals in each group. Adverse events were reported in one study. Improvement in histological parameters including attenuation of submesothelial thickness (100%), inflammation (62.5%), angiogenesis (60%), and fibrosis (85.7%) was reported after stem cell therapy. Peritoneal permeability function by assessing the ultrafiltration, glucose transport and solute permeability was improved in all studies. Stem cell treatment resulted in mesothelial recovery in 100% of studies.

Conclusion: In preclinical studies, the use of stem cells is associated with improved peritoneal fibrosis. This may provide an important foundation to support future translational clinical research using stem cell therapy to repair the injured peritoneum and modulate immune responses in PD patients.

UP-013

MHC Class II Regulating KIM-1 Mediated Autophagy Plays an Important Role in Renal Ischemia-Reperfusion Injury

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Introduction and Objective: Renal function protection during partial nephrectomy and renal transplantation has been highly focused and demands a prompt solution. Ischemia-reperfusion injury (IRI) is one of the most vital pathogenesis leading to kidney injury during perioperative periods. Previous studies have confirmed that kidney injury molecule-1 (KIM-1) mediated autophagy plays an important role in the process of kidney injury and epithelia renovation. This study was conducted to investigate the regulatory role of MHC class II of proximal tubular cells (PTCs) in the process of KIM-1 mediated autophagy during renal IRI.

Materials and Methods: Nephron MHC class II conditional knockout (cKO) mice (Six2-Cre$^{+/-}$; MHCII $^{flox/flox}$) were performed to establish the bilateral IRI model (30 minutes of ischemic duration or sham operation). That age- and sex-matched littermates from the Six2-Cre$^{-/-}$; MHCII $^{flox/flox}$ colony were chosen as control mice. Both acute phase (48 hours after surgery) and chronic phase (6 weeks after surgery) of renal IRI were evaluated to investigate the underlying mechanisms.

Results: MHC class II cKO mice suffered more deteriorative kidney function after renal IRI. Compared with control mice, MHC class II cKO mice manifested higher KIM-1 expression in both acute and chronic phase of renal IRI (24.76±2.34 % vs. 16.47±1.27 % and

2.21±0.41 % vs.1.03±0.27 %, correspondingly; both p<0.05). In the chronic phase, the severity of kidney fibrosis and collagen I deposition were dramatically greater in the cKO mice (12.85±3.34 % vs. 9.78±2.62 % and 20.08±5.77 % vs. 17.40±3.36 %, respectively; both p<0.05). In addition, MHC II cKO mice showed a significantly less kidney-infiltrating CD4+ CD25+ Foxp3+ T cells (regulatory T Cells, Tregs) during the process of renal IRI (p<0.05), indicating Tregs were the most essential lymphocytes in the KIM-1 mediated autophagy pathway during renal IRI.

Conclusion: MHC class II of PTCs plays a protective role in the kidney injury caused by bilateral IRI. After the process of KIM-1 mediated phagocytosis and autophagy, antigen could be further presented to MHC class II of PTCs, thus regulating the renal immune response. Among all the infiltrating immunocytes, Tregs are the most vital in the KIM-1 mediated autophagy pathway during renal IRI.

UP-014

The Impact of a Simplified Pelvitrainer Curriculum on Basic Laparoscopic Skills of the Junior Urologists and Visceral Surgeons: A Prospective Study Including 20 Residents

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Introduction and Objective: Laparoscopic surgery is clearly different from open surgery and therefore requires a different training setup. Laparoscopy training has evolved in recent years. We describe a simplified training program using the pelvitrainer to improve the basic laparoscopic skills of the junior urologists and visceral surgeons.

Materials and Methods: This is an analytical prospective study focusing on the skills progress of 20 residents in surgical specialties and with different levels of training. Our program started with 4 inanimate tasks that included peg transfer, disc cut-out, needle guidance and intracorporal knot tying. Each task was practiced for one-hour training session with an objective evaluation (time necessary to achieve every task and quality criteria in the 2 first tasks) at the initial attempt and at the end of the training session.

Results: Residents were 28 years old (26-31). The sex ratio was 4/1. Two specialties were represented: visceral surgery (12 residents) and urology (8 residents). The continuous evaluation of these trainees showed that there was a significant decrease in the time required to perform each of the 4 tasks at the end of their corresponding sessions compared to the base line values. Task 1: the average time decreased from 4 min 25 sec to 2 min 30 sec (p = 0.00). The average number of dropped objects decreased from 0.8 to 0 (p = 0.037). Task 2: the average time decreased from 4 min 44 sec to 3 min 19 sec (p = 0.019). The average length of cutting beyond the lines decreased from 2.1 cm to 0.6 cm (p = 0.005).Task 3: the average time decreased from 8 min 36 sec to 4 min 43 sec (p = 0.004). Task 4: the average time decreased from 4 min 7 sec 2 min 12 sec (p = 0.001).

Conclusion: The results of this study confirm that such a model allows training surgeons to progress significantly. The Pelvitrainer is a powerful and inexpensive tool that can help in the improvement and in the retention of the basic laparoscopic skills of the junior residents.

UP-015

Up-Regulation of miR-204 May Lead to Increased Apoptosis of Testicular Germ Cells in Pubertal Cryptorchid Rat

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Introduction and Objective: We investigated the effects of in utero exposure to di-n-butyl phthalate (DBP) on testicular cell apoptosis in pubertal cryptorchid male rat offspring and the regulation of miRNAs in this process.

Materials and Methods: Twenty pregnant SD rats were divided into two groups. During gestation day 12 to 19, control group was given 1ml/d of olive oil, and experimental group was given DBP 500mg/kg/d by gavage. On postnatal day (PND) 45, the testes of male rat offspring were removed. Transmission electron microscope and HE staining were done for morphological analysis. Apoptosis was detected by TUNEL. The expression of Bcl-2, Bax and p53 was presented by immunohistochemistry and Western blotting. RNA sequencing was performed to screen the differentially expressed miRNAs and bioinformatic analysis was used to predict the target genes. Quantitative PCR was performed to validate the apoptosis related miRNA expression. Data of the two groups were compared using t-test by SPSS 20.0.

Results: The incidence of cryptorchidism in the offspring of DBP-exposed group was 65.6%. In PND45 cryptorchid rat testes, increased apoptosis was observed and spermatogenetic cells were significantly decreased. The apoptosis index of germ cells in cryptorchid testes was significantly higher than that of the controls (P < 0.01). Immunohistochemistry and Western blotting revealed significant overexpression of Bax and p53 in cryptorchid testis after DBP exposure (P < 0.05). 237 differentially expressed miRNAs were obtained. The KEGG pathway analysis revealed 15 apoptosis-related miRNAs, with 13 up-regulated miRNAs and 2 down-regulated miRNAs. Quantitative PCR revealed that the expression of miR-204-3p in the cryptorchid testes was significantly higher than that in the control group (P<0.05).

Conclusion: Maternal exposure of DBP may lead to severe DNA damage in the cryptorchid testis of rat offspring, which may increase the expression of p53 by up-regulating miR-204-3p, and promote the release of Bax from mitochondria by cytochrome C, resulting in increased apoptosis of germ cells, testicular spermatogenesis dysfunction and infertility.

UP-016

The Role of Type 1 Angiotensin II Receptor (At1) on the Levels of Transforming Growth Factor b1 (TGF-b1), Matrix Metalloproteinase 9 (Mmp-9) and Type III Collagen Wistar Rat Bladder Wall with Partial Infravesika Obstruction

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Introduction and Objective: Excessive strain on the bladder wall caused by bladder outlet obstruction results in changes in bladder wall type III collagen, smooth muscle hypertrophy, and disruption of smooth muscle function. These changes were also found in the condition where the local bladder's renin-angiotensin system (RAAS) and TGF-b1 increased excessively. The objective was to compare AT1 receptor expression between angiotensin receptor blocker treated group and angiotensin-converting enzyme inhibitor treated group

Materials and Methods: This study was an experimental study that used 30 adult male wistar rats. These Wistar rats were divided into 3 groups of rat models BOO and 1 group sham operated. Group I (positive control group) consisted of 9 rats with artificial bladder outlet obstruction (BOO) without any treatment, group II consisted of 9 mice with artificial BOO treated with ramipril, group III consisted of 9 mice with artificial BOO treated with telmisartan. Group IV (sham group) consists of 3 mice with sham procedure. Observation on day 1, day 7 and day 14 was done at the expense of rats from each group to take bladder tissue. The bladder tissue from each group was processed and examined for AT1, MMP9, TGF-b1 and type III collagen receptors using the ELISA method. Data were analyzed using one-way ANOVA and Spearman correlation. Statistical analysis using SPSS version 20.0.

Results: AT1 receptor level group III on the 14th day was lower than the group II AT1 receptor level (p 0.013). Group III showed a tendency of decreasing AT1 receptor levels on the 14th day while group II tended to increase. There is a positive correlation between the levels of AT1 and MMP-9 receptors and a positive correlation between MMP-9 and TGF-b1 levels in BOO model mice. The level of MMP-9 group III on the 14th day is lower than group II but was not statistically significant. Levels of TGF-b1 group III on day 1 were lower than group II with p 0.015.

Conclusion: Expression of AT1 receptor level ARB treated group is lower than AT1 receptor level of ACE inhibitor treated group. There is a strong correlation between AT1 receptor and MMP-9 and MMP-9 with TGF-b1.

UP-017

Urine Turbulent Shear Stress of Bionic Human Bladder Model Promote E. Coli Biofilm Formation Based on a New Bacterial Biofilm Reactor: An In Vitro Preliminary Study

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Introduction and Objective: Bacterial biofilm is the key pathogenic factor for CAUTI; the study intends to explore the impact of bladder urine flow hydrodynamics on E. coli biofilm formation on the surface medical silicone membrane.

Materials and Methods: The authors firstly put forward a new point: bladder urinary flow pattern is turbulent flow, then designed the artificial urine turbulent shear stress loading system based on bacterial biofilm reactor of *in vitro* bionic human bladder. The experimental grouping included hydrostatic pressure (SAU), constant shear stress (DAU1), physiological and pathological shear stresses (DAU2, DAU3) and the test time-points were 24 h, 72 h, 120 h, and 168 h. Biofilm bacteria suspension smear colony count, optical density value, CLSM, and SEM techniques were used to characterize biofilms. The inter-group and intra-group differences were quantitatively compared by Image J and Comstat software. The repeated measure data were analyzed by RM-ANOVA with SAS software.

Results: (1) The colony counts were significantly different between time points (P=0.0029). (2) The OD values were significantly different between groups or time points (all P<0.0001); the interaction effect existed between stress and time point (P<0.0001). (3) The biofilm biomass on CLSM images were significantly different between groups or time points (P=0.0004, <0.0001), the interaction effect existed (P<0.0001). The surface areas were significantly different between groups or time points (all P<0.0001); the interaction effect existed (P<0.0001). The average diffusion distances were significantly different between groups or time points (all P<0.0001); the interaction effect existed (P<0.0001). (4) The biofilm surface areas on SEM images were significantly different between groups or time points (all P<0.0001); the interaction effect existed (P<0.0001).

Conclusion: A new urine turbulent shear stress loading system based on bacterial biofilm reactor of *in vitro* bionic human bladder was successfully constructed, and bladder urine turbulent shear stress significantly stimulated E. coli biofilm formation.

UP-018

Urine Turbulent Shear Stress of Bionic Human Bladder Based on a New Bacterial Biofilm Reactor Stimulated the Expression Differences of E. coli Biofilm Lectins: An In Vitro Preliminary Study

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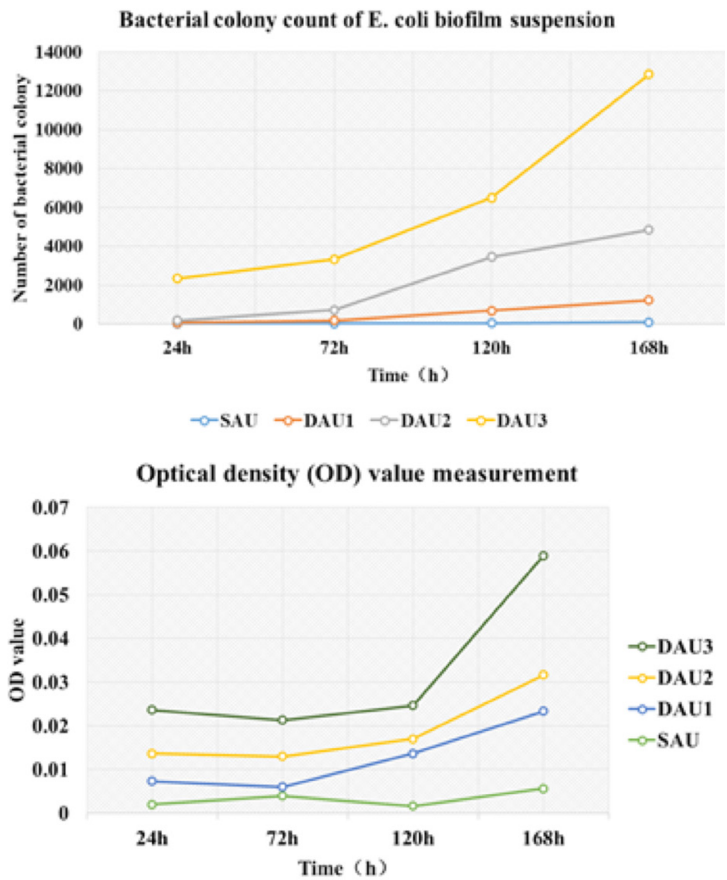
UP.017, Figure 1: The left figure shows the biofilm bacteria suspension smear colony count comparison. The right figure shows the optical density value comparison



Introduction and Objective: In chronic infections, lectins play key roles in establishing biofilms. We have proved the bladder urine turbulent shear stress could promote E. coli biofilm formation based on *in vitro* bacterial biofilm reactor. This study intends to explore the impact of bladder urine turbulent shear stress on the expression differences of biofilm lectins.

Materials and Methods: The E. coli biofilm was constructed based on a new bacterial biofilm reactor with artificial urine turbulent shear stress. The experimental grouping included hydrostatic pressure (SAU), constant shear stress (DAU1), physiological and pathological shear stresses (DAU2, DAU3) and the test time-points were 24 h, 72 h, 120 h, and 168 h. The specialized lectin microarray was used to detect the differential expression of 26 lectins (Con A, GNA, L-PHA, E-PHA, DSA, LCA, MAL-I, MAH, SNA, AAL, UEA-I, LTA, RCA-I, ECL, PNA, GSI-B4, WFA, SBA, HPA, VVL, DBA, GSII, GlcNAc, LEL and STL, marked as L1-26, respectively).

Results: (1) In SAU and DAU1 groups: the glycosylation degrees gradually increased from 12 h to 168 h and three lectins of AAL, RCA-I, and HPA were mainly bound. (2) At 24 h, 72 h, 168 h of DAU2, the glycosylation degrees were similar, poorer at 120 h, but HPA expression was stronger than AAL. (3) At 24 h, 72 h of DAU3, the glycosylation degrees were similar, poor at 20 h but stronger at 168 h. The AAL expression was stronger than HPA at 24 h and 72 h but was the inverse of the two lectins expressions at 120 h, the Galactose degrees was quite high at 168 h.

Conclusion: The *in vitro* urine turbulent shear stress based on bacterial biofilm reactor of *in vitro* bionic human bladder could lead to the expression differences of E. coli biofilm lectins. The lectins AAL, RCA-I and HPA were mainly expressed on the E. coli biofilms, and the time and stress differences were also observed.

UP-019

Renal Denervation Ameliorates Renal Ischemia-Reperfusion Injury and Modulate Micro-RNA Expression in Injured Kidneys in Rats

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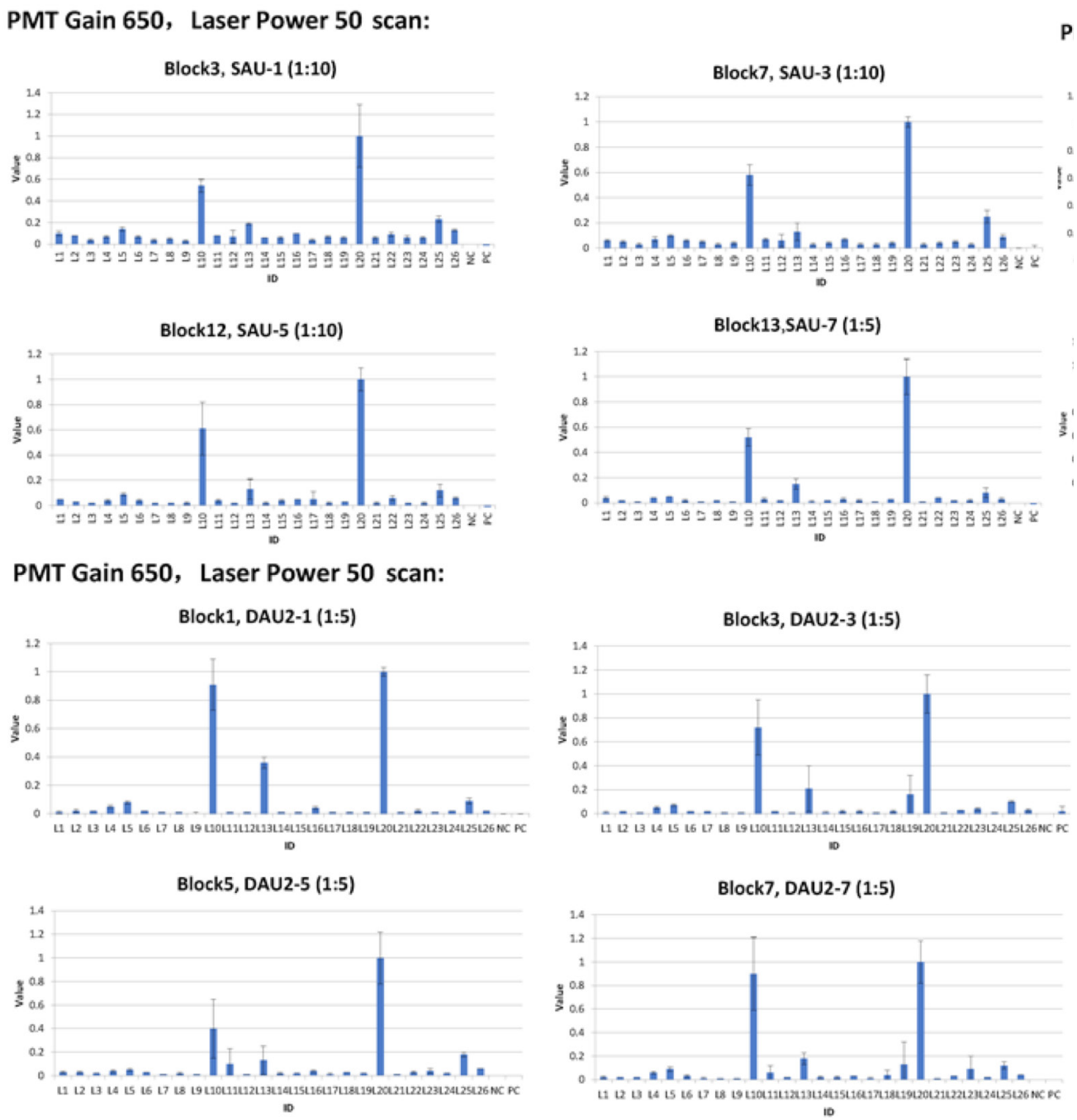
Introduction and Objective: Ischemia-reperfusion injury (IRI) is a main clinical cause of acute renal injury, which can lead to renal failure. Renal denervation (RD) was used in renal injury repair, but the mechanism is still unclear. Micro-RNA was regarded as an important media in renal injury repair, which may involve in the therapeutic effect of RD in renal IRI. So, the purpose of this study was to investigate the therapeutic effect of RD on renal IRI and to further explore the changes of micro-RNA in injured kidneys.

Materials and Methods: Renal IRI animal model was established with right nephrectomy and left renal ischemia for 45 minutes in rats. Left renal arteries were separated and treated with 10% phenol solution for 2 minutes in RD experiment. IRI, IRI + RD and sham operated groups were involved in this study. Kidney

UP.018, Figure 1: The upper-left of figure shows the expression differences of E. coli biofilm lectins in SAU stress group. The upper-right of figure shows the expression differences of E. coli biofilm lectins in DAU1 stress group. The lower-left of figure shows the expression differences of E. coli biofilm lectins in DAU2 stress group. The lower-left of figure shows the expression differences of E. coli biofilm lectins in DAU3 stress group

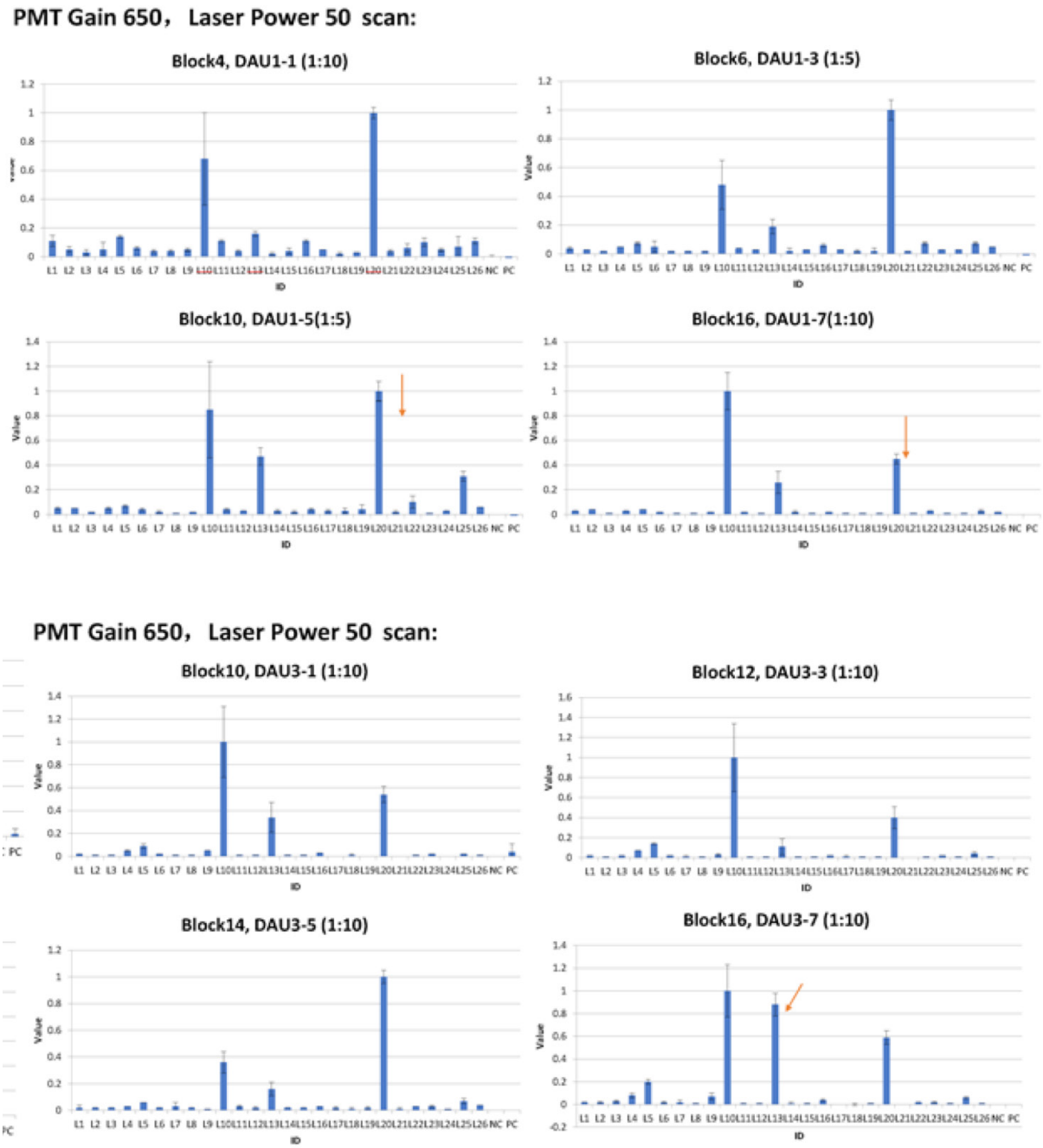


and blood samples were obtained 24 hours and 3 weeks after the intervention, respectively. Tyrosine hydroxylase (TH) and calcitonin gene-related peptide (CGRP) were stained in injured kidneys to assess the denervation effect. Renal pathology score was tested with Periodic Acid-Schiff (PAS) staining and renal fibrosis were reflected with Masson trichromatic staining. Serum urea nitrogen and creatinine were used to detect renal functions. Moreover, the different expressions of miRNAs in kidneys were determined by micro-array analysis, and gene ontology (GO) was used to analyze the functions of their target genes.

Results: RD reduced the expression of TH and CGRP significantly in injured kidneys. Meanwhile, RD can alleviate the damage of tubule cells in the early stage of IRI (24 hours), abrogate renal fibrosis in the later stage (3 weeks) and improve renal functions. Through micro-array analysis, RD changed the micro-RNA contents in injured kidneys, and the up-regulated micro-RNAs mainly targeted in mitochondria dynamic and angiogenesis pathways.

Conclusion: RD could ameliorate renal IRI both in the acute and chronic stage, and the modulation of mitochondria dynamic and angiogenesis related micro-RNAs may be a potential mechanism. This study establishes a substantial foundation for future research and treatment.

UP.018, Figure 1: The upper-left of figure shows the expression differences of E. coli biofilm lectins in SAU stress group. The upper-right of figure shows the expression differences of E. coli biofilm lectins in DAU1 stress group. The lower-left of figure shows the expression differences of E. coli biofilm lectins in DAU2 stress group. The lower-left of figure shows the expression differences of E. coli biofilm lectins in DAU3 stress group



UP-020

Human Urinary RNA Exosome: Optimizing Methods of Isolations and Sample Preparation for Transcriptome

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Introduction and Objective: Human urine is a potential bio-fluid to study as a diagnostic biomarker method. There are substances secreted from metabolism residue and damaged cell, including genetic substances that cast away through urine and RNA (Ribonucleic Acid). Recently, RNA (coding-ncRNAs)

has been developed for diagnostic methods because it could represent profile expression in the cell. Furthermore, RNA urinary isolation methods are important to be established in order to get reliable non-invasive biomarkers compared to tissue biopsy. In fact, the optimization method for isolation RNA from urine is not clear. So that, the optimization and stability storage study are needed to be used as a reference standard protocol. This study was performed to determine the optimization methods of RNA isolation from urine samples and RNA concentration stability storage for transcriptomic (non-coding RNA) analysis.

Materials and Methods: Each sample was collected as many 15 mL in the morning and treated with lysis solution from different manufacturers (Qiagen, Ambion, Geneid, control without buffer). ANOVA statistical analysis was performed to determine the significant difference between the methods used.

Results: RNA stability measuring of RNA and DNA observed on days 1, 3, 5, 7, 9, 11, and 13 had a p-value > 0.01. At the same time, RNA stability storage is known to decrease consistently by 0.1-1 ng each day. Quantification mRNA could be done from urine samples.

Conclusion: There are no significant differences between all the methods used.

UP-021

Predictors for Prostatic Urethral Involvement with Transitional Cell Carcinoma: A Prospective Study of 100 Patients

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Introduction and Objective: To prospectively evaluate the incidence of transitional cell carcinoma (TCC) in the prostatic urethra in patients with bladder tumors and investigate characteristics of bladder tumors in relation to the risk of involvement of the prostatic urethra.

Materials and Methods: A prospective study of 100 patients with bladder masses presented in the period between October 2015 and November 2016. Patients underwent transurethral resection of the bladder tumor (TUR-BT), with biopsies from the prostatic urethra at 5 and 7 o'clock just distal to the bladder neck and proximal to the verumontanum. We excluded patients with visible tumor invading the prostatic urethra on cystoscopy.

Results: Mean age was 60 years. Prostatic urethral biopsies were positive in 25 patients (25 %), only one of them was with carcinoma in situ (1%). We found 52 patients with a mass near to bladder neck (<2 cm from bladder neck), while 48 patients had it away (> 2 cm from bladder neck). 61 patients had a single mass, while 39 had multiple bladder masses. We found that invasive bladder cancer (mass felt by DRE, associated with Hydronephrosis by CT, solid in appearance, muscle invasive masses) is the most important factor that increases the risk of prostatic urethral invasion.

Conclusion: Prostatic urethral sample should be considered in all patients suspected to have an invasive tumor, which may affect further management of these patients.

UP-022

Usefulness of Evaluative TURB After BCG Induction Cycle in HG pTa Bladder Cancer

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Introduction and Objective: Second transurethral resection of bladder tumors (TURB) in pTa high grade (HG) patients is recommended in cases without muscular tissue in the initial pathological report. It has demonstrated outcomes in recurrence-free survival and overall survival (EAU guidelines). Primary objective: to analyze TURB usefulness after BCG induction cycle in pTa HG tumors (high risk according to EORTC) in order to identify an early relapse. Secondary objective: to analyze early relapse prognostic factors in these patients.

Materials and Methods: It was a retrospective and descriptive study. We enrolled 59 patients with pTa HG bladder urothelial carcinoma (high risk according to EORTC), from July 2010 to September 2016, submitted to induction with BCG instillations (81 mg - six-weekly schedule) and TURB after a six-week cycle. We compared the early relapse in evaluative TURB against late relapses (more than 6 months) and the number of tumors, multicentricity and tumor size at first TURB as prognostic factors. We stratified the recurrence and progression risks according to EORTC at the time of the evaluative TURB.

Results: The mean follow up was 42.9 months. 19 patients showed recurrence (32.2% [IC95%: 20.6 – 45.6%]) with a mean of 12 months (3-60 months). 7 patients (11.9% [IC95%: 4.9 – 22.9%]) showed recurrence at evaluative TURB. Recurrence risk was higher in multifocal tumors with an OR 3.184 (IC95%: 1.022 – 9.917) and OR 9.600 (IC95%: 1.075 – 85.733) both in early recurrence patients and globally. According to the risk stratification, 94.7% of relapses showed an intermediate recurrence risk and 84.2% showed a high progression risk. 88.1% of all TURB were negative.

Conclusion: Patients with multifocal pTa HG tumors in first TURB benefit from an evaluative TURB after BCG prophylaxis induction cycle.

UP-023

Blue Light Cystoscopy with Hexaminolevulinate has a High Negative Predictive Value for Ruling Out Urothelial Malignancies

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Introduction and Objective: Studies have demonstrated that blue light cystoscopy with hexaminolevulinate improves detection of non-muscle invasive bladder cancer (NMIBC) compared with white light cystoscopy. We report our Australian experience to test the efficacy of ruling out urothelial malignancies with blue light cystoscopy.

Materials and Methods: We retrospectively identified 41 consecutive patients who underwent blue light cystoscopy and biopsies, following instillation of hexaminolevulinate between 2016 and 2018. Intraoperative biopsy specimens were prospectively labelled "blue light positive" or "blue light negative". "Blue light positive" indicated a specimen taken from an area that illuminated red, whilst a "blue light negative" specimen was one from an area that did not illuminate red as part of systematic bladder biopsy. All samples underwent histopathological analysis and the results compared.

Results: 41 patients (Median age 74, 88% male and 12% female) underwent bladder biopsies, which yielded a total of 254 specimens. There were 131 blue light positive samples and 123 blue light negative biopsies. Of the 131 blue light positive samples, 71 (54%) demonstrated urothelial malignancy (including CIS), whilst 60 (46%) had no evidence of malignancy. Of the 123 blue light negative samples, 117 (95%) samples were negative for malignancy, whilst only 6 were positive for malignancy (all of which were CIS). There was a high detection rate of CIS at 86%, whilst low and high-grade urothelial malignancies had a 100% detection rate. Blue light cystoscopy conferred a high sensitivity of 92% and negative predictive value of 95% in ruling out urothelial tumours in a population with a high prevalence of tumour. Specificity and positive predictive value were lower, at 66% and 54% respectively, owing largely to a significant amount of false positive results from bladder inflammation.

Conclusion: A negative blue light cystoscopy is reassuring in ruling out malignancy based on our data. There is a high detection rate of CIS. Inflammation in the bladder is a large contributor to our high false positive rate and low positive predictive value.

UP-024

Robotic Assisted Radical Cystectomy – An Analysis of Safety and Oncological Outcomes from an Australian Case Series

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Introduction and Objective: Robot assistance is increasingly being used for radical cystectomy. Numerous international studies have demonstrated equivalence or superiority of oncological and safety outcomes of robotic assisted radical cystectomy (RARC) compared to open cystectomy. The aim of this presentation is to describe an early Australian experience of RARC with intracorporeal urinary diversion and compare oncological and safety outcomes with the international published literature.

Materials and Methods: There were 21 male and five female patients who underwent RARC between 2013 and 2018. Median age was 70 (range 56–84). 5 patients underwent neo-adjuvant chemotherapy. All 26 patients underwent intracorporeal ileal conduit urinary diversion. There were no conversions from RARC to an open cystectomy. Median blood loss was 300 mL (range 50–600 mL). There was a 73% overall complication rate in 90 days, with the most common complications being urinary tract infection and ileus, whilst the major complication (Clavien-Dindo > 3) rate was 12%. The positive surgical margin rate was 8%. Median lymph node yield was 13 (8–20) and me-

dian positive lymph nodes were 1 (0-2). Two patients (8%) had a readmission to the hospital within 30 days of discharge. There were no deaths within 90 days of operation.

Results: There were 21 male and five female patients who underwent RARC between 2013 and 2018. Median age was 70 (range 56–84). 5 patients underwent neo-adjuvant chemotherapy. All 26 patients underwent intracorporeal ileal conduit urinary diversion. There were no conversions from RARC to an open cystectomy. Median blood loss was 300 mL (range 50–600 mL). There was a 73% overall complication rate in 90 days, with the most common complications being urinary tract infection and ileus, whilst the major complication (Clavien-Dindo > 3) rate was 12%. The positive surgical margin rate was 8%. Median lymph node yield was 13 (8–20) and median positive lymph nodes were 1 (0-2). Two patients (8%) had a readmission to the hospital within 30 days of discharge. There were no deaths within 90 days of operation.

Conclusion: Our results are comparable with much of the international published literature in safety and oncological outcomes in robotic cystectomy. Further prospective trials in the Australian setting need to be conducted to compare RARC to open radical cystectomy.

UP-025

Could DNA Methylation in the Urine be a Future Biomarker for Risk Stratification and Screening of Patients with Neurogenic Lower Urinary Tract Dysfunction (NLUTD) for Bladder Cancer?

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Introduction and Objective: Literature on the prevalence of bladder cancer (BCa) in NLUTD patients is conflicting and an established screening protocol does not exist. The development of urine biomarkers for BCa is an attractive non-invasive method of screening in this patient population, as opposed to cystoscopy, urine cytology and bladder biopsies. DNA methylation, an epigenetic modification resulting in transcriptional silencing of tumor suppression genes, is found in 50-90% of BCa cases. In urine samples of patients with NLUTD, we explored DNA hypermethylation of a panel of five genes' promoters previously associated with a higher risk of BCa, and in comparison, with reported results from normal individuals.

Materials and Methods: Eligible participants for this pilot, prospective study were patients with a history of NLUTD of at least five years. DNA was extracted and DNA methylation was assessed for the RASSF1, RARb, DAPK, hTERT and APC genes' promoters by the quantitative Methylation Specific PCR in a urine sample. The sample was collected via clean intermittent catheterization (CIC), indwelling catheter of free flow, depending on patients' voiding habits.

Results: Thirty-three patients with a mean age of 48.39 years and a mixed etiology of NLUTD were enrolled. Most patients (57.6%) were male. The majority of patients (81.8%) emptied their bladders with CIC and the median duration of catheter use was 6 years and median NLUTD duration was 12 years. DNA was detected in 28 of 33 urine samples. DNA was found to be hypermethylated in at least one of five gene promoters in 11 urine samples (39.29%). RASSF1 was hypermethylated in 6/11 samples (54.55%), APC in 5/11 samples (45.45%), DAPK in 3/11 samples (27.59%), RAR-b2 in 1/11 sample (9.09%) and hTERT in no sample. The NLUTD group demonstrated higher prevalence of DNA hypermethylation in comparison to the control group (39.29% vs.13.64%, p= 0.045).

Conclusion: In our cohort of NLUTD patients, DNA hypermethylation of a panel of five genes associated with BCa was found in at least 1/3 of patients, a higher prevalence when compared to normal controls. Whether this suggests a higher BCa risk in NLUTD patients' needs to be confirmed in large, controlled longitudinal studies.

UP-026

Pathological Significance of Thrombospondin-5 in Patients with Bladder Cancer: Did its Expression Correlate to Blood Supply of Cancer-Related Microvessels?

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Introduction and Objective: Among of thrombospondins (TSPs), pathological roles of TSP-1 and -2 in malignancies have been previously studied *in vivo* and *in vitro*. On the other hand, there is little information on the relationship between other members and clinicopathological features in bladder cancer tissues. In this study, we paid attention to TSP-5 expression because it is associated with vascular homeostasis including blood coagulation. That is, we hypothesis that TSP-5 plays important roles for tumor growth and cell dissemination via securing blood supply of cancer-related microvessel in cancer tissues. The main aim of this study is clarifying this hypothesis in patients with bladder cancer.

Materials and Methods: Expression of TSP-5 was evaluated in 206 patients, with 150 non-muscle, invasive bladder cancer (NMIBC) and with 56 MIBC patients. TSP-5 immunoreactivity, proliferation index (PI, measured by using anti-Ki67 antibody), and microvessel density (MVD, measured by using anti-CD34 antibody) were evaluated in formalin-fix specimens by immunohistochemical technique. By using computer imaging analysis system, ratio of blood cells and an area of microvessel within the tumor is analysed.

Results: TSP-5 immunostaining in cancer cells was observed in mainly cytoplasm and cell membrane. One-hundred nineteen patients (57.8%) were judged as positively expressing TSP-5, and it was significantly associated with grade ($P < 0.001$), T stage ($P < 0.001$), and presence of metastasis ($P < 0.001$). In addition, it is useful predictor for cause-specific survival (log rank P=0.023) in Kaplan-Meier survival curves. On the other hand, TSP-5 expression was correlated with PI ($P < 0.001$), but not with MVD ($P = 0.427$). With regard to ratio of blood cells and an area of microvessel, mean / SD ratio in TSP-5-positive tissue (45.7 / 14.7 %) was significantly higher ($P < 0.001$) than that in -negative tissues (29.8 / 11.9 %).

Conclusion: Our results showed that TSP-5 expression was significantly associated with pathological features and survival in bladder cancer patients. We speculated that increasing of cancer cell proliferation may play an important role, and TSP-5 may secure the blood supply of cancer-related microvessel. The main limitation of this study is that ratio of blood cells and an area of microvessel does not always reflect the blood supply. However, I believe that there is a possibility that TSP-5 is positively associated with malignant aggressiveness via securing blood supply and pathway for cancer cell dissemination in bladder cancer.

UP-027

CD169-Positive Macrophages in the Draining Lymph Node Predict the Prognosis of Muscle-Invasive Bladder Cancer

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Introduction and Objective: CD169$^+$ macrophages play a pivotal role in establishing anti-tumor immunity. In mice, they capture dead tumor cells in the draining lymph and activate tumor-antigen-specific CD8$^+$ T cells, which is important for tumor suppression. It was reported that a greater frequency of CD169 macrophages is associated with a better cancer prognosis in cancer patients. The goal of this study was to determine the prognostic significance of CD169$^+$ macrophages residing in the tumor-draining lymph nodes of bladder cancer.

Materials and Methods: 64 bladder cancer patients who received radical cystectomy were retrospectively examined. The abundance of CD169$^+$ macrophages in the regional lymph nodes and CD8$^+$ T cells in the tumor were investigated by immunohistochemistry. The CD169 score was determined as the proportion of CD169$^+$ macrophage among CD68$^+$ cells in the lymph node.

Results: Bivariate comparisons of clinicopathological features of patients using the chi-square tests showed that the CD169 score positively correlates with an abundance of CD8$^+$ T cells in the tumor. The high CD169 score group showed significantly higher cancer-specific survival rate than the low CD169 score group (5-year cancer-specific survival rate: 80.4% versus 25.1%, p = 0.0005). A multivariate analysis identified the CD169 score as the strongest and independent favorable prognostic factor for cancer-specific survival.

Conclusion: These results suggest that CD169$^+$ macrophages in the lymph nodes enhance anti-tumor immunity by expanding CD8$^+$ T cells in the bladder cancer. We propose that the CD169 score can be used for predicting cancer-specific survival rate in the bladder cancer patients.

UP-028

A Spectrum of Malignancy in Adult Bladder Exstrophy

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Introduction and Objective: Bladder exstrophy is a rare congenital anomaly. Malignant transformation of the native mucosa is an uncommon complication. Adenocarcinoma comprises the vast majority (95%) while squamous cell carcinoma accounts for less than 5%. Malignant transformation of bladder exstrophy is known to occur after primary surgery in childhood as well as in untreated adults. We describe three cases of bladder exstrophy with malignant transformation presenting in adulthood. This series demonstrates a spectrum of malignancy and highlights the need for awareness of this potentially fatal complication.

Materials and Methods: A retrospective search of patient records in our computerized database over a 15-year period.

Results: We identified three cases of malignant transformation in untreated adult bladder exstrophy. Two of these were squamous cell carcinoma and one was adenocarcinoma. Malignancy was evident in two of the cases where tumor was visible within the exposed bladder mucosa. In one case, the diagnosis of malignancy was ascertained post-operatively as a histological surprise.

Conclusion: Bladder exstrophy is a known predisposing factor for malignancy after reconstruction as well as in untreated cases. Adenocarcinoma is, by far, the commonest histology. Squamous cell carcinoma is much rarer, with the majority of reported cases having occurred in untreated adult exstrophy. Given the risk of malignant change, we recommend biopsy of the exstrophied bladder in all adult cases before complex reconstruction is performed.

UP-029

Autophagy Inhibition Enhances Leflunomide-Induced Cytotoxicity in Human Bladder Cancer Cells

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Introduction and Objective: Dihydroorotate dehydrogenase (DHODH) is one of the essential enzymes in the de novo biosynthesis of pyrimidine and might be a potential therapeutic target for cancer suppress. The anti-proliferative and apoptosis-inducing effects of leflunomide, a potent DHODH blocker, have been demonstrated in multiple human cancers. This study aims to investigate the cytostatic effects of leflunomide on bladder cancer and the involved mechanism.

Materials and Methods: Two human bladder cancer cell lines, T24 and 5637 were used in this study. After incubation with varied doses of leflunomide, the cell viability, apoptosis and cell cycle assay were determined with MTS, cell colony assay and flow cytometry. Western blot was used to evaluate the expression changes of cleaved-PARP, proteins involved in Akt/mTOR/P70S6K signaling pathway and cell autophagy pathway. AVO stain assay was performed to detect the autophagosome. Moreover, the cytostatic effects of leflunomide were further investigated after the modulation of cell autophagy with autophagy agonist rapamycin and inhibitor chloroquine.

Results: Our data demonstrated that leflunomide markedly inhibited the growth of both bladder cancer cells via inducing cell apoptosis and cell cycle arrest in S phase in a time- and dose-dependent manner. After leflunomide treatment, the phosphorylation levels of Akt, mTOR and p70S6K proteins in both cells were significantly down-regulated. Furthermore, AVO stain assay revealed the decline of autophagosome under the incubation of leflunomide. Modulation of autophagy with rapamycin and chloroquine observably attenuated and enhanced the cytostatic effects of leflunomide, respectively.

Conclusion: Leflunomide significantly reduced the cell viability of bladder cancer cells via Akt/mTOR/P70S6K signaling pathway. In addition, cell autophagy was demonstrated to be involved, combination leflunomide with autophagy modifier exerted enhanced antitumor effects in bladder cancer, which offered novel ideas for bladder cancer treatment.

UP-030

A Single Centre Experience of Management and Outcomes of Secondary Neoplasm of the Bladder

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Introduction and Objective: Metastases to the urinary bladder are rare, accounting for up to 4.5% of all bladder neoplasms. These are often due to the direct extension from another pelvic neoplasm, such as cervical, prostate and colon cancer. Metastases from distant organs are exceptionally rare and have been described sporadically, the most common being stomach, lung and skin. We retrospectively studied the surgical and oncological management of patients with secondary neoplasms of the bladder.

Materials and Methods: 25 patients with metastatic tumours of the urinary bladder were identified in our centre. Prognostic variables examined included age at diagnosis, sex, histology and treatment. Kaplan-Meier analysis was used to calculate survival.

Results: Clinical characteristics were as follows- median age 69 years (49-90), 15 patients were men [60%] and 10 were women [40%]. The most common secondary neoplasms originated from prostate (8 patients [32%]), colorectal (5 patients [20%]), lymphoma (3 patients, [12%]), lung (3 patients [12%]), renal (2 patients [8%]), ovarian (2 patients [8%]), cervical (1 patient [4%]), and breast (1 patient [4%]). Twenty patients underwent surgical intervention (80%), whilst 1 patient received chemotherapy alone (4%) and 1 patient received radiotherapy alone (4%). Four patients received either a combination of surgery and chemotherapy (16%), 3 patients received Surgery and chemo-radiotherapy (12%), 1 patient received chemotherapy alone (4%) and 1 patient received radiotherapy alone (4%). Chemotherapy regimens varied but most commonly involved Oxaliplatin, Gemcitabine, and Carboplatin. Transurethral Resection of Bladder Tumour (17 patients, 68%) and Radical Cystectomy (3 patients, 12%) were the most frequently performed surgical procedures amongst our patients, whilst 5 patients (20%) did not receive any surgical intervention. The median survival for our patients was Renal (1528 days), Ovarian (552 days), Prostate (555 days) Colorectal (518 days), Lymphoma (404 days), Breast (241 days), and Cervical (125 days). In survival analysis, younger patients presented the best prognosis, whilst older patients had the worst overall survival.

Conclusion: Prostate adenocarcinoma is the most common secondary neoplasm affecting the bladder closely followed by colorectal adenocarcinoma and lymphoma. Prognosis and treatment depend upon the primary neoplasm.

UP-031

Survey of Current Practices of Intravesical Therapy in Non-Muscle-Invasive Bladder Cancer (NMIBC) Among Urologists in Karachi, Pakistan

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Introduction and Objective: Guidelines recommend intravesical chemotherapy and immunotherapy for

UP.028, Table 1: Summary of case details

Age (yrs)/ gender	Time of diagnosis	Stage, Type of malignancy	Management	Follow up/ Survival
44/ Male	At presentation	Stage III, Locally advanced, moderately differentiated squamous cell carcinoma	Neoadjuvant chemotherapy	Expired at 6 months from complications of chemotherapy
36/ Female	Histopathology of surgical specimen	Stage I, Organ confined, Squamous cell carcinoma, non-muscle invasive	Simple cystectomy, ileal conduit, abdominal wall repair	On follow up till date (45 months). Disease-free
37/ Male	At presentation	Stage II, Organ-confined, poorly differentiated adenocarcinoma	Radical cystectomy, ileal conduit, abdominal wall repair and adjuvant chemotherapy	Lost to follow up after 12 months. Disease-free at last review

non-muscle invasive bladder cancer to reduce the risk of recurrence and progression. The aim of this study is to evaluate the current practices of intravesical therapy in non-muscle-invasive bladder cancer among urologists in Karachi.

Materials and Methods: Proforma were distributed and collected by primary investigator among urologists in different institutions of Karachi including Aga Khan Hospital, Liaquat National Hospital, Kidney Centre, Indus Hospital, Jinnah Post graduate Medical Centre, Abbasi Shaheed Hospital and Tabba Kidney Institute. Overall 51 respondents completed the survey.

Results: Out of 51 respondents 90% were males and 10% females. The majority were consultants (39%) followed by junior residents (35%) and chief residents (26%). Overall, 80.4% of respondents reported routine administration of intravesical chemotherapy (SICA) after TURBT. 23.5% of respondents routinely give induction therapy in low risk BC using Mitomycin whereas 76.5% in high risk cases using BCG. As far as time duration of intravesical therapy is concerned, most of urologists reported for 45 min (49%) followed by 30 min (29.4%), 2 h (17.6%) and 3 h (3.9%). Only 39% reported routinely using maintenance therapy with BCG for high risk BC. Concerning posture change during intravesical therapy, 65% change the posture while 35% don't. As for BCG failure 76.5% participants reported for radical cystectomy.

Conclusion: The results of our survey provides evidence of variation in practices among urologists and poor guideline adherence with risk of under treatment of patients with NMIBC. This requires joint efforts of all those involved in treatment of NMIBC to improve quality of care.

UP-032

Open Radical Cystectomy for T4 Stage Bladder Cancer in Frail Patients: A Single Center Experience

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Introduction and Objective: Radical cystectomy is the gold standard in muscle invasive bladder cancer. When it is performed in older patients it is associated with higher complication rates but same mortality rates as in younger patients. The aim of our study is to evaluate the safety of open radical cystectomy for high stage disease (T4) in frail patients with severe comorbidities.

Materials and Methods: In this prospective single center study we collected data from patients who underwent radical cystectomy in our department for high stage disease during the year 2018. We included only patients with severe comorbidities such as severe coronary disease, arrhythmias requiring antithrombotic agents, metal aortic or mitral heart valves or severe respiratory disease. Perioperative results as well as postoperative complications and 30 days mortality rate were recorded.

Results: At total 11 patients with severe comorbidities underwent radical cystectomy in our department during 2018. All patients were males. Median age was 71 years (61 – 86). All patients presented with severe comorbidities. Preoperative hemoglobin was 9.7 g/100ml. In 2 patients cystectomy was salvage (after trimodality treatment failure) and in one patient was palliative due to severe hemorrhage. Duration of operation was 120 minutes. As far as it concerns urine diversion, in all cases ureterostomies were performed in order to reduce morbidity. Estimated blood loss was 580 ml. Regarding transfusion rates, 6 patients underwent transfusion perioperatively or postoperatively. Concerning postoperative complications, 2 patients presented with ileus which was treated conservatively. One patient suffered wound dehiscence which required reoperation. One patient suffered acute coronary disease and was treated also conservatively in the cardiology department. In terms of oncologic results, bladder removal was performed in all patients and all pr esented with T4 stage disease. In terms of 30 days postoperative morbidity, one patient died due to deep vein thrombosis and pulmonary embolism.

Conclusion: Radical cystectomy in frail patients with severe comorbidities presenting with T4 stage disease is quite demanding but it may be performed with accepted rates of complications and low mortality.

UP-033

Muscle Invasive Bladder Cancer - Development of a Bladder Cancer Survivorship Tool

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Introduction and Objective: Bladder Cancer is the 7th most common cancer worldwide in men and the 17th most common cancer worldwide in women (Burger, 2013). In contrast, bladder cancer survivorship is poorly addressed within contemporary research. This study aims to determine the unmet needs of bladder cancer survivorship patients via systematic review, then develop a bladder cancer survivorship assessment tool.

Materials and Methods: A systematic review relating to literature on survivorship for patients with bladder cancer was conducted. This was to identify survivorship needs in bladder cancer and also the components of a survivorship tool. The search strategy aimed to identify all references related to bladder cancer AND survivorship. Search terms used were as follows: (Bladder cancer) AND (unmet needs) AND survivorship. The following databases were screened from 1989 to September 2018: CINAHL, MEDLINE (NHS Evidence), Cochrane, AMed, EMBASE, PsychINFO, SCOPUS, Web of Science.

Results: From 189 studies, 43 the criteria for inclusion and mapped to search terms. Themes identified within the review included are planning, cognitive support, lack of follow-up, exercise therapy, diet and nutrition, health and wellbeing, quality of life, healthcare utilisation, primary care input, psychosexual therapy, education and support, side effects of therapy, work ability.

Conclusion: From the systematic review, unmet needs were found in patient information, requirement for patient support groups. An active bladder cancer support group are required. Access to healthcare to management side effects of surgery, erectile dysfunction and fatigue, are also important. Survivorship clinics are needed as are community resources for education, and patient navigation are needed. Based on these results a bladder cancer survivorship tool is developed.

UP-034

Does CxBladder Improve Bladder Cancer Detection and Surveillance? A Prospective, Cross-Sectional Analytic Study

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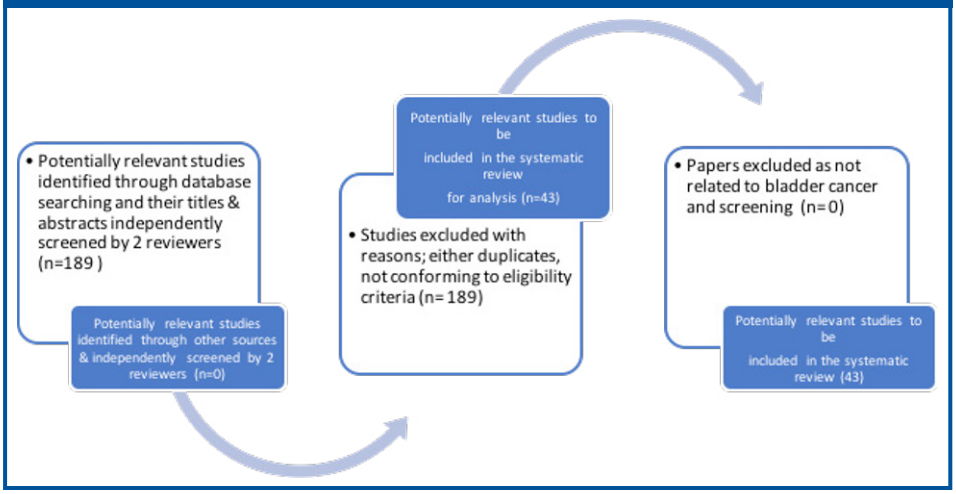
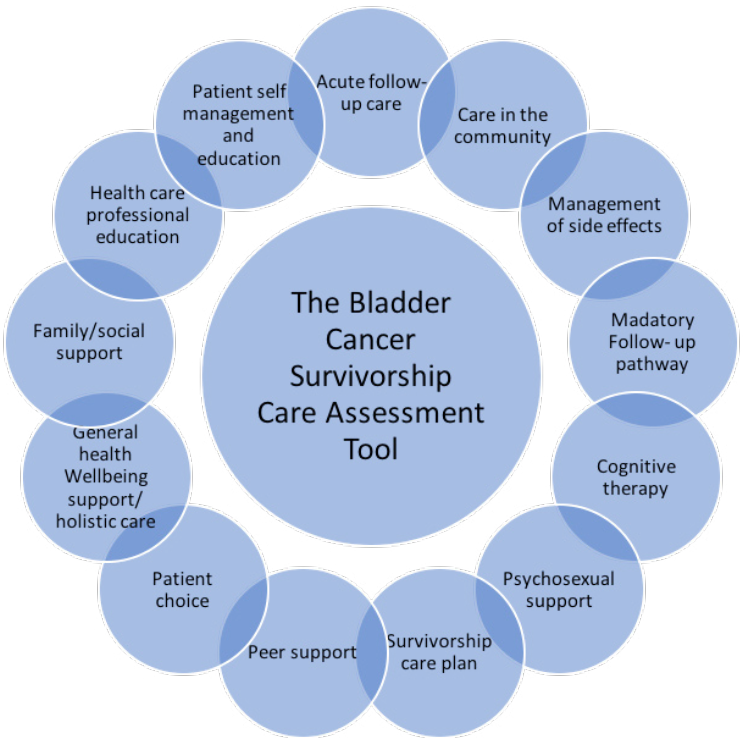
Introduction and Objective: Traditional non-invasive testing in the form of urine cytology and imaging for urothelial bladder cancer has a low sensitivity. CxBladder is a new diagnostic test which takes into account urine genetic markers and patient phenotypic

UP.033, Figure 1: Flow chart of studies identified through the systematic review (adapted from PRISMA)



UP.033, Figure 2: Bladder Cancer Survivorship Tool



characteristics to calculate the risk of a patient having bladder cancer. We aimed to perform the first Australian assessment of the diagnostic performance of CxBladder for detection and surveillance of bladder cancer.

Materials and Methods: A prospective, cross-sectional analytic study design was employed. Patients undergoing cystoscopy for investigation of haematuria or surveillance for urothelial carcinoma between May 2018 and Oct 2018 were enrolled in our study. All patients being investigated for haematuria had three sets of urine cytology and upper tract imaging performed. Data were analysed using SPSS 24.0.

Results: Seventy-five patients were enrolled in our study. The mean age was 67.5 with females comprising 30% of group. Indications were macroscopic haematuria (61%), microscopic haematuria (11%), and bladder cancer surveillance (28%). Histologically proven urothelial carcinoma was present in 12.2% of cases. Of these 2 cases could not have a CxBladder risk calculation due to the presence of high inflammatory markers within the urine. The remaining cases of urothelial carcinoma all had a positive CxBladder test. In comparison urine cytology demonstrated malignant cells in 22%, atypical cells in 33% and were normal in 45% of cases. CxBladder tests were negative in 47% of cases, with all cases being negative for urothelial carcinoma on cystoscopy.

Conclusion: Our study shows that CxBladder has a 100% high negative predictive value, demonstrating its utility as a "rule out" test. This has the opportunity to significantly decrease the number of unnecessary cystoscopies being performed for bladder cancer detection and surveillance.

UP-035

Albumin to Globulin Ratio is Negatively Associated with Preoperative Circulating Tumor Cell Counts in Non-Muscle Invasive Bladder Cancer: A Prospective Study

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Introduction and Objective: Systemic inflammation was reportedly to be associated with the detection of circulating tumor cells (CTCs). The aim of this study was to explore the association between preoperative albumin to globulin ratio (AGR), one of the key components of systemic inflammation, and the detection of CTCs.

Materials and Methods: Between October 2017 and May 2018, a homogeneous cohort of patients with primary non-muscle invasive bladder cancer (NMIBC) patients were enrolled in this prospective study. AGR was calculated as AGR = albumin/(total protein - albumin). The enumeration of CTCs was performed before the tumor resection using a size-dictated immunocapture chip. Patients were divided into two groups based on the CTC counts (detectable vs. undetectable). A comparison of clinicopathological factors and AGR value was performed between the two groups.

Results: A total of 25 consecutive primary NMIBC patients were enrolled. 14 patients had detectable CTCs (41.86 ± 64.61 ml, range 4 – 244 ml) before the tumor resections, while the remaining 11 patients did not have any detectable CTCs. Patients with undetectable CTCs before the resection had a significant higher value of AGR (1.61 ± 0.12, range 1.44 - 1.80) compared with those had detectable CTCs (1.49 ± 0.17, range 1.21 -1.81) (p= 0.047). There was no significant difference between the two groups, regarding age at the diagnose, gender, pathological tumor stage and grade (WHO 2004) and smoking history.

Conclusion: AGR is negatively associated with preoperative CTC counts and may be a predictor of CTC detection in NMIBC patients.

UP-036

Survey Based Analysis of BCG Usage Among Senior and Junior Consultants

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Introduction and Objective: BCG is widely well recognised and advocated for high and intermediate risk group patients in almost all guidelines. Despite evidence suggestive of its use we found that BCG practice and protocols are widely varied with generation gap among the urologist for number of reasons.

Materials and Methods: We did survey based analytic study for BCG practice among urologist from western India. A set of questions regarding indications, protocol and understanding of clinical guidelines for administration were asked to fill by the consultants. Any urologist with more than 10 years of practise was considered as senior and rest were considered as junior urologist.

Results: All consultants are agreed for BCG in t1 high grade tumor. 60% of seniors used for intermediate risk compare to 80% of junior consultants. All gave induction course of 6 weeks with one-week gap in between but 70% seniors started it by 2 weeks and 90% of juniors started after 4 weeks of surgery. There was no consensus for second induction course among senior urologist while 60% of juniors were in favour of second induction course. Wide variety of dosage from 80 to 120mg among both the groups. 90% of juniors were instilled BCG their self with 8 or 10 FR catheter while 70% of seniors rely on trained staff and using feeding tube. Wide variety was noted for maintenance protocol. 45% of juniors follow maintenance protocols up to 1 year while 70% of seniors had their maintenance protocol but they varied it widely. Storage LUTS was the most common complication noted. Wide variety was seen in prescribing antibiotics among senior and juniors. 27% of seniors were prescribing anticholinergics along with BCG.

Conclusion: Despite the guideline recommendations and awareness for the same, consultant practise widely varies among the senior and junior practitioners. An understanding of the utilisation of BCG therapy must be made universal for the all urologist for betterment of patients.

UP-037

Use of Fluorescence in Situ Hybridization to Characterize Responders to Intravesical Chemotherapy for BCG-Refractory Bladder Cancer

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Introduction and Objective: Intravesical chemotherapy for BCG-refractory non-muscle invasive bladder

cancer (NMIBC) is increasingly being used in patients who are unfit or are unwilling to undergo radical cystectomy. We sought to determine whether therapy failure for these patients could be predicted with the routine use of fluorescence in situ hybridization (FISH), as has been previously demonstrated in patients who have received BCG immunotherapy alone.

Materials and Methods: Patients receiving intravesical chemotherapy (gemcitabine, mitomycin, valrubicin, gemcitabine/docetaxel, or gemcitabine/mitomycin) for BCG-refractory NMIBC were retrospectively identified from our institutional database. FISH was performed prior to initiation of therapy and again at the conclusion of six weeks of induction treatment. We used descriptive statistics to summarise patient and outcome characteristics, and Chi-square test to differences in FISH results between and tumor recurrence and no recurrence.

Results: 29 patients were included (25 male; 4 female). Mean age was 72.1 years (range 50-89). On initial biopsy, 14 (48.3%) patients had CIS, 20 (69%) had high-grade Ta, and 5 (17.2%) had high-grade T1 disease. All patients had previously failed BCG immunotherapy. 18 (62%) underwent combination chemotherapy (either gemcitabine/docetaxel or gemcitabine/mitomycin), 8 (27.5%) received mitomycin alone, 2 (6.9%) received valrubicin, and 1 received gemcitabine (3.4%) alone. Median follow time was 8 months (range 1-55 months). Positive FISH result in patients who had completed intravesical chemotherapy was associated with tumor recurrence (p=0.035). Among patients with a positive FISH, 11/12 (91.2%) had biopsy-proven recurrence, with 63% of this subset demonstrating either disease progression or recurrent CIS. Final pathology in three patients who underwent radical cystectomy was recurrent high-grade T1 with CIS, recurrent high-grade T1 alone, and recurrent CIS. No significant association was found with the frequency of prior recurrences (p=0.67), or presence of CIS on initial biopsy (p=0.26).

Conclusion: Immediate post-treatment FISH results may be able to identify patients who are at risk for tumor recurrence following intravesical chemotherapy for BCG refractory NMIBC. This may have implications for directing early cystectomy in this high-risk population. These findings require validation in a larger, prospective cohort.

UP-038

Gene Amplification and Potential Overexpression of CYP2A6 in an Invasive Phenotype of Bladder Cancer

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Introduction and Objective: We observed genomic instability in common with rodent experimental models and human bladder cancers. Based on the findings we used immunohistochemistry to identify specific biomarkers in early-stage invasive cancers.

Materials and Methods: In a candidate gene of Cyp2a5, we performed immunohistochemistry including a precancerous lesion in tissues of rodent. The protocol was approved by the Committee on the Ethics of Animal Experiments. To analyze the role of the human ortholog gene in tumor progression, CYP2A6 expression was examined by immunohistochemistry in 18 incipient and 27 recurrent TUR-treated cases of human superficial papillary tumor. Furthermore, to identify a new biomarker, we analyzed the immunohistochemical scores in superficial papillary and invasive scattered lesions in eight same patients. This study was approved by the Ethics Committee and was performed in accordance with the Declaration of Helsinki, 1995. All patients gave their written informed consent prior to their inclusion in this study.

Results: Immunostaining of the rodent bladder tumor revealed that CYP2A expression was not particularly higher in the superficial papillary lesions of the rat but was slightly higher in the dysplastic and significantly higher in the early invasive lesions of the mouse. Differences in CYP2A6 expression were not statistically significant among the incipient and recurrent cases of human superficial papillary tumors (P = 0.196). However, a significant difference in CYP2A6 expression, estimated based on the immunohistochemical score and cell number ratio, was noted between the superficial papillary and invasive scattered lesions in the eight same patients (P = 0.0162).

Conclusion: The overexpression of Cyp2a5 was specific in mouse invasive bladder cancer, moreover, the immunohistochemistry findings suggested that the overexpression was prominent in the precancerous lesion. The amplification and potential overexpression of CYP2A6 was significantly associated with invasive cancers. Our results indicate that CYP2A6 can be considered as a useful biomarker for early detection of transformation to invasive phenotypes in bladder cancer.

UP-039

Urinary Bladder Cancer Antigen, in Follow-Up of Non-Muscle Invasive Bladder Cancer

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Introduction and Objective: The diagnostic value of the urinary bladder cancer (UBC) antigen as a tumor marker is not clear yet. This study aimed to compare the sensitivity and specificity of UBC antigen and voided urine cytology in patients with non-muscle invasive bladder cancer.

Materials and Methods: Thirty patients admitted for follow-up of non -muscle invasive bladder cancer were enrolled. Three voided urine samples were taken for urinalysis, cytology, and UBC antigen before performing cystoscopy. Resection of pathologic lesion, if any, was performed. Results of the diagnostic tests were compared with cystoscopy results.

Results: Seventeen out of thirty patients (56.6%) had positive cystoscopically and histologically confirmed transitional cell carcinoma. UBC antigen test and cytology were positive in sixteen out of thirty (53.3%) and nine out of thirty (30%) patients, respectively. Sensitivities and specificities were 76.4% and 77% for UBC antigen, 47% and 92.3% for urine cytology, and 82.3% and 69.2% for combined UBC antigen and cytology.

Conclusion: UBC antigen test has acceptable sensitivity and lower specificity in patients with non-muscle invasive bladder cancer compared to voided urine cytology.

UP-040

The Treatment of Highest Grade T1 Bladder Cancer by Immediate Radical Cystectomy: New Standard of Care

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Introduction and Objective: Management of the highest risk subtype of High-grade T1 (HGT1), represents one of the most difficult challenges for urologists and patients alike. Our objective is to evaluate the characteristics and oncological outcomes of patients with HGT1 of non-muscle-invasive bladder cancer (NMIBC) treated with immediate radical Cystectomy (RC).

Materials and Methods: We collected a pooled database of 173 patients who underwent radical cystectomy between 2012 and 2015 in the urology department of the EHU Oran in Algeria; 46 of these patients had highest risk subtype of High-grade T1 (HGT1). Survival data were analyzed using Kaplan-Meier method.

Results: The median age of patients was 69 years with a mean follow-up time of 35 months. The 3-year overall, disease-specific and disease-free survival was 81%, 87%, and 69%, respectively. 12% of patients were given adjuvant chemotherapy. Pathologic stage distribution was p0: 5 (10.8%), pTa: 3 (6.5%), pT1: 12 (26.08%), pT2: 13 (28.2%), pT3: 9 (19.5%), pT4: 4 (8.6%), pN0: 34 (73.9%) and pN1-3: 12 (26.02%). On multivariate analysis, only pN stage and histological variant were independently associated with overall, disease-specific and disease-free survival.

Conclusion: There is an understanding of the HGT1 with more than half of the highest risk tumors are muscle-invasive bladder cancer. Immediate radical cystectomy in HGT1 offers excellent overall and specific survival. Only PN stage and histological variant were independently associated with different survival. Our study has limitations with short-term survival (This is not a comparative study).

UP-041

Utilization of Raman Spectroscopy for Diagnosis of Bladder Cancer: A Systematic Review and Meta-Analysis

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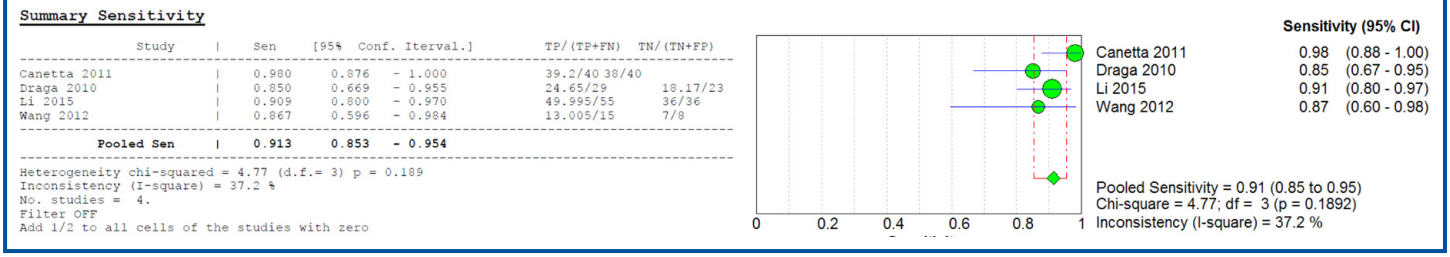
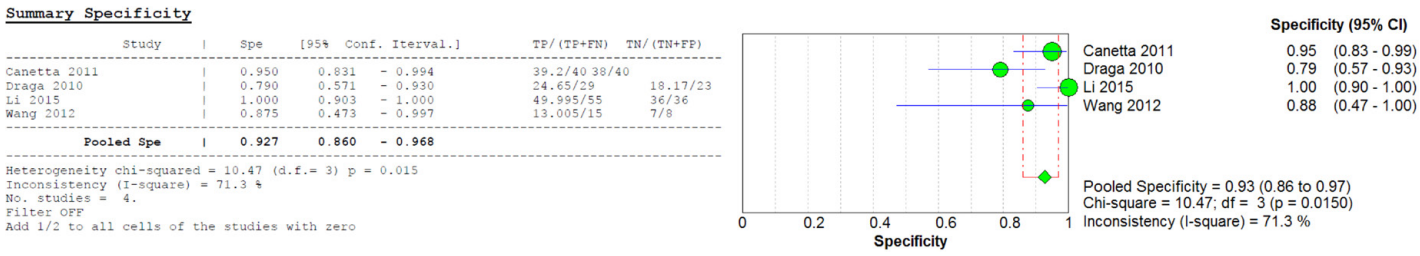
Introduction and Objective: Although several studies have been conducted to evaluate the likelihood of Raman spectroscopy (RS) in the diagnosis of bladder cancer (BCa), it is difficult to use RS as a clinical result based on the results. Therefore, we performed the systematic review and meta-analysis to assess the diagnostic performance of RS in the BCa in this study.

Materials and Methods: Comprehensive literature searches were performed in the PubMed/Medline, Embase, and Cochrane library databases up to De-

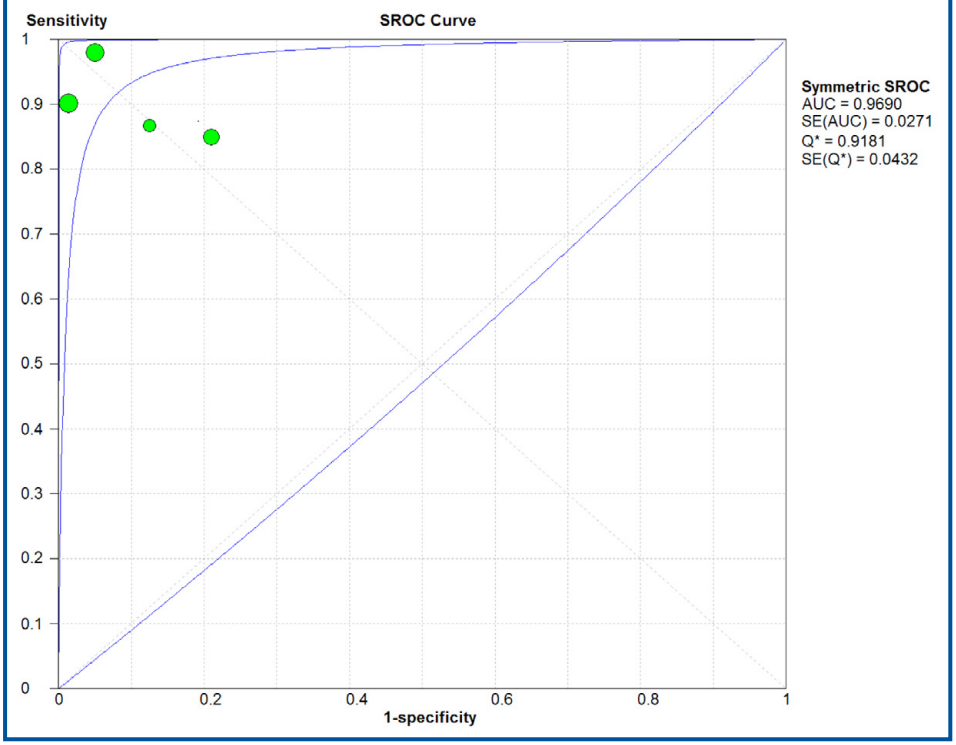
UP.041, Figure 1.



UP.041, Figure 2.



UP.041, Figure 3.



cember 2018. Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, study has been included according to the PICOS (Participant, Intervention, Comparator, Outcomes, Study design) approach. The methodological quality of the included studies was evaluated according to questionnaires and criteria suggested by Quality Assessment of Diagnostic Accuracy Studies-2 (QUADAS-2).

Results: Four studies were included in this analysis though the screening of full-text of the remaining articles based on the inclusion and exclusion criteria through systematic review. The pooled sensitivity and specificity of RS were 0.91 (95% CI 0.85–0.95) and 0.93 (95% CI 0.86–0.97), respectively (Figures 1 and 2). The heterogeneity of the among-study was statistically significant in the results of the specificity (Cochran Q statistic, p = 0.015; I^2 statistic, 71.3%) and not in the sensitivity results (Cochran Q statistic, p = 0.189; I^2 statistic, 37.2%). The risk of bias in all included studies were low grade in all domain except patient selection. The applicability concerns were also were a low grade in almost except index test of two studies.

Conclusion: RS is an optical diagnostic technology that has great value in detecting malignant bladder lesions. At the same time, it has advantages of being non-invasive, real-time, and easy to use. Thus, it deserves to be further explored for intra-operatory bladder tumor margin detection.

UP-042

Results from the Management of 180 Cases of T1 Bladder Tumors with a 5 Years Follow Up Schedule

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Introduction and Objective: We present our hospital's 5 years follow up schedule and the oncological outcomes for patients after the initial treatment of high-risk non-muscle invasive bladder tumors.

Materials and Methods: In this study, 180 patients initially treated with TURBT (transurethral resection of bladder tumor) with T1 histology and submitted to intravesical installations of BCG were included. Patients were operated by the same surgeon at a tertiary private medical institute. After the initial TURBT with T1 stage tumor, independently of the grade, patients underwent a second TURBT 20 days later. Subsequently, irrespectively of the histology, patients were submitted to 6 weekly intravesical installations of BCG. A cystoscopy was carried out at 3 months and afterwards every 3 months for the first year and every 6 months for the next 4 years. 3 weekly revision installations of BCG were administered to all patients every 6 months after the initial treatment, for 36 months.

Results: After 5 years of follow up, recurrence-free survival was achieved in 91% of the patients and progression-free survival in 95%. In 11/16 patients the bladder tumor recurred during the 1st year of follow up. Adverse events were recorded in 33 patients, with only 1 serious complication (Clavien-Dindo >3). 21 cases of macroscopic hematuria were conservatively resolved. 6 patients presenting with fever had to

permanently discontinue the BCG installations. 1 patient developed a urethral stricture after the revision TURBT, which was treated with intermittent dilatation with Tiemann catheters. 1 case of polyarthritis was treated with NSAIDs and discontinuation of the BCG treatment. 1 patient presented with epididymis abscess and underwent epididymectomy, while another had a serious allergic shock and discontinued the BCG treatment. No deaths were reported.

Conclusion: We present our department's initial results after 5 years of follow up in patients who underwent TURBT with T1 stage histology. The intensive follow up schedule after initial tumor treatment, results in excellent oncological outcomes, with a very good safety profile. Follow up cystoscopies were less frequent than suggested by most guidelines which results in lower costs for the patients without compromising oncological outcomes.

UP-043

Residency of CD103+ CD8+ T Cells Marks Protective Anti-Tumoral Immune Responses in Muscle-Invasive Bladder Cancer Patients

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Introduction and Objective: CD103+ CD8+ T cells are previously reported as memory CD8+ T cells and thus could promote adaptive immune response. While immunotherapy showed great potential in muscle-invasive bladder cancer (MIBC) treatment, it is urgent to discover which subgroup MIBC patients could benefit most from immunotherapy. We here tried to explore the prognostic value of CD103+ CD8+ T cells and provide possible molecular explanations.

Materials and Methods: We selected 259 MIBC patients who underwent radical cystectomy from two independent clinical centers between 2002 and 2014. CD103+ CD8+ T Cells were evaluated via immunofluorescence of CD103 and CD8 performed in our constructed tissue microarrays. Prognostic value of CD103+ tissue-resident CD8+ T cells in MIBC was assessed within both training set and validation set. Immune microenvironment was also evaluated by measuring various tumor-infiltrating immune cells and immune-related cytokines. Fresh MIBC specimens were analyzed by flow cytometry to explore the anti-tumoral immune response and immune checkpoint expression of tissue-resident CD8+ T cell.

Results: Patients with higher CD103+ CD8+ T cells infiltration had a significantly better overall survival in both training set and validation set. (HR= 0.243, P < 0.001 and HR= 0.324, P < 0.001). Further, Cox regression indicated that CD103+CD8+ T cells could exhibit its prognosis value independent of CD8+ T cells. Moreover, patients with higher CD103+ CD8+ T cells tended to have more CD8+ T cells, DCs and M1 macrophages infiltrated. Flow cytometry results revealed that CD103+ CD8+ T cells tended to express more IFN-g and granzyme B than CD103- CD8+ T cells (P < 0.001 and P= 0.007, respectively) (n= 10). We then analyzed several well-known immune checkpoint molecules in CD103+ CD8+ T cells. Surprisingly, PD-1, TIM-3 and Lag-3 were highly enriched in CD103+ CD8+ T cells. While there were no significant differences in CTLA-4 and TIGIT expression between CD103+ CD8+ T cells and CD103- CD8+ T cells.

Conclusion: High CD103+CD8+ T cells could predict better prognosis in MIBC patients. CD103+CD8+ T cells exhibit a distinct immune checkpoint molecules expression pattern. Patients with high abundance of CD103+CD8+ T cells represent a more potent anti-tumor immune response.

UP-044

Examining Repeat Resection 2015-2019: Where Are We Now?

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Introduction and Objective: European guidance has recently changed and now differs from NICE – who steer us toward repeat resection in all with high-risk disease. European guidance does not include these patients if muscle is included and resection is (macroscopically) complete in the primary resection. NMIBC is expensive to treat. Re-look TURBT places a burden on operating room usage and adds further cost/risk of complications, however, offers more accurate diagnosis and treatment strategy. We aim to assess the role of re-look TURBT in our centre.

Materials and Methods: Single centre retrospective study of 112 re-look TURBTs, from 26/01/2015-31/12/2018. Tumours unresectable on primary TURBT were excluded.

Results: Mean age was 72.1 years. Re-looks: 19/112 were G2 pTa, 46/112 were G3 pTa and 47 were G3 pT1. Median time to repeat resection was 7 weeks (4-37). 54.5% (61/112) of 1st specimen included muscle, which rose to 87% on re-look. Grade of surgeon was not associated with inclusion of muscle in specimen. Residual tumour was found in 36.6% (41/112) of re-looks; which includes 21% of G2 pTa, 30.2% of G3 pTa and 46.7% of G3 T1 tumours. Residual tumour was found in 32% of G3 Ta tumours that contained muscle in the primary specimen, and 28% in those without. For T1 tumours, those without muscle had a 44.4% chance of residual tumour compared with 48.1% for those that had muscle. Histopathological changes that worsened the prognosis (> vT1 or concomitant CIS) was found in 17%. 8% were up-staged to T2 (15.6% of T1 tumours; of the T1 tumours without muscle this rose to 27.8%). Only 1 patient with a Ta tumour was up-staged to T2. Grade was increased by 2.9%. Median time to BCG from initial TURBT was 105.5 days. Time to BCG was not associated with BCG failure (p= 0.0247).

Conclusion: There is a high percentage of patients with residual tumour, especially in T1 tumours. If the most valuable reason for re-look is to identify those who need radical treatment, then the risk of finding MIBC is extremely low for Ta tumours. Therefore, for the majority of patients, we are delaying BCG therapy unnecessarily.

UP-045

Does the Presence of Histological Variants in Urothelial Carcinoma of the Bladder Predict Worse Clinical Outcomes After Radical Cystectomy?

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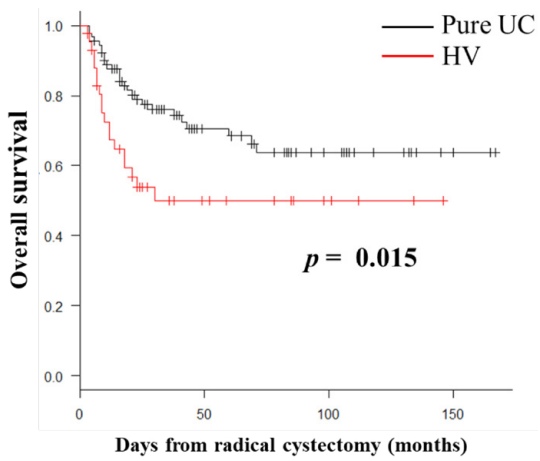
Introduction and Objective: The effect of histological variants (HV) in urothelial carcinoma (UC) on clinical outcomes is unknown. This study was conducted to investigate the impact of presence of HV on prognosis of patients with muscle-invasive bladder cancer (MIBC).

Materials and Methods: We reviewed consecutive patients with MIBC (clinical T2–4aN0M0) who were treated with radical cystectomy at a single academic center between 2003 and 2017. All specimens were re-reviewed by dedicated pathologists. Disease-free survival (DFS) and overall survival (OS) were evaluated using Kaplan-Meier, log-rank, and Cox regression analyses.

Results: We identified 43 (32.1%) and 91 (67.9%) patients with HV and pure UC, respectively. HV group was associated with higher pathologic T stage (≥ pT3) (58.1% vs 27.5%, p = 0.001). Patients with HV had poorer DFS (p = 0.008) and OS (p = 0.015, Fig.1) than those with pure UC. In cases with neoadjuvant chemotherapy (NAC), the 5-year OS rate of the HV and

UP.045, Fig. 1 Kaplan-Meier curve shows OS stratified by histology.



pure UC groups was 29.8% and 53.8% (p = 0.068), and the 5-year DFS rate was 38.5% and 61.1% (p = 0.121). The proportion of pathologic downstaging was significantly lower in patients with HV than those with pure UC (21.4% vs 60.0%, p = 0.043). On multivariate analysis, the presence of HV was not significantly associated with disease recurrence and mortality.

Conclusion: The presence of HV was associated with advanced T stage and modest response to NAC, and unfavourable survival after radical cystectomy in MIBC, although HV was not an independent predictor of oncologic outcomes.

UP-046

Pathological Significance of Thrombospondin-1, and -2, and 4N1K-Peptide in Bladder Cancer Tissues

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Introduction and Objective: Thrombospondin (TSP)-1 and -2 are recognized as inhibitors of angiogenesis under various pathological conditions including cancers. Many investigators showed that TSP-1 has anti-carcinogenic and anti-angiogenic activities. However, TSP-1 has also been shown to play the opposite role, in stimulating the malignant aggressiveness of several cancers. As such, it is still uncertain whether TSP-1 has pro- or anti-cancer effects. In contrast to TSP-1, fewer studies have evaluated pathological roles of TSP-2 and 4N1K-peptide (KRFYVVMWKK) derived from TSP-1 and -2 in bladder cancer. The study clarified whether the expression of TSP-1, TSP-2, and 4N1K-peptide is correlated with malignant aggressiveness and prognosis in these patients.

Materials and Methods: Two-hundred six bladder cancer tissues were examined for the expressions of TSP-1, TSP-2, and 4N1K-peptide by immunohistochemical technique. Cancer cell proliferation measured with anti-Ki-67 antibody, apoptosis measured with cleaved caspase-3, angiogenesis measured with anti-CD34 antibody, and matrix metalloproteinase (MMP)-9 immunoreactivity were also examined. Relationships between expressions of TSP-1, TSP-2, and 4N1K-peptide and malignant aggressiveness, pathological features, and survival are analyzed.

Results: TSP-2 expression was negatively associated with T stage ($P < 0.001$), metastasis ($P = 0.021$), and grade ($P = 0.018$). Similar negative relationships were also detected with respect to 4N1K-peptide expression ($P < 0.001$, 0.025, and 0.002, respectively). On the other hand, such significant relationship was not found in TSP-1 expression in all variables. TSP-2 expression was negatively associated with the cell proliferation ($P = 0.005$) and MMP-9 expression ($P < 0.001$), whereas 4N1K-peptide was significantly associated with apoptosis ($P < 0.001$), angiogenesis ($P = 0.024$), and MMP-9 expression ($P = 0.005$). Multivariate analyses showed 4N1K-peptide expression was a significant predictor for subsequent metastasis (hazard ratio = 3.90, $P = 0.002$) and overall survival (hazard ratio = 2.43, $P = 0.012$). TSP-1 expression was not associated with these 2 parameters on survival.

Conclusion: TSP-2 and 4N1K peptide play important roles in the malignant aggressiveness and progression of bladder cancer via complex mechanisms involving cell proliferation, apoptosis, angiogenesis, and MMP-9 expression. We suggest that 4N1K-peptide would be a more useful predictive marker and potential therapeutic target in these patients.

UP-047

High Diagnostic Efficacy of 5-Aminolevulinic Acid-Induced Fluorescent Urine Cytology for Urothelial Carcinoma

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Introduction and Objective: Generally, urine cytology is often problematic because of its low sensitivity, especially for low-grade urothelial carcinoma (UC) in clinical practice. To improve the sensitivity, we focused on 5-aminolevulinic acid (5-ALA) because recent studies suggested that 5-ALA-induced urine cytology can be used for photodynamic diagnosis. In this study, we evaluated the diagnostic efficacy of 5-ALA-induced fluorescent urine cytology for urothelial carcinoma.

Materials and Methods: We included in this study 318 patients comprising 158 non-cancer patients, 84 bladder tumor (BT) patients, and 76 upper urinary tract urothelial carcinoma (UUT-UC) patients treated in our institution from March 2013 to September 2018. Using the same voided urine sample, we compared sensitivity and specificity between conventional urine cytology and 5-ALA-induced fluorescent urine cytology.

Results: Overall, the sensitivity of 5-ALA-induced fluorescent urine cytology was significantly higher than that of conventional urine cytology (86.9% vs. 69.4%; p= 0.0002), and the specificity was equivalently high (96.2% vs. 95.6%; p= 1.0). In subgroup analysis, the high sensitivity of 5-ALA-induced fluorescent urine cytology was also detected regardless of age, sex, and tumor type. However, in terms of stage and grade, differences were only detected in patients with less than pTa stage (89.2% vs. 52.1%; p= 0.0001) and low-grade tumor (91.5% vs. 51.1%; p <0.0001).

Conclusion: 5-ALA-induced fluorescent urine cytology was significantly more effective for UC diagnosis when compared with conventional cytology, especially in patients with low-stage and low-grade tumors. These findings indicate that 5-ALA-induced fluorescent urine cytology may potentially be a very useful tool for clinical use.

UP-048

En-block Resection of Bladder Tumors – Our Initial Experience

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Introduction and Objective: The initial experience of using en-bloc resection of bladder tumors using bipolar button device is being reviewed here.

Materials and Methods: Twenty consecutive patients with pedunculated bladder tumors underwent en-bloc resection using a bipolar button between 01-01-2019 and 30-03-2019. A single surgeon at AIIMS, Bhubaneswar, performed all the surgeries. The mean age of the patients was 62 years (46 to 69) and the male to female ratio was 4:1. Fourteen patients underwent surgery under general anesthesia and the remaining six under spinal anesthesia. A unilateral obturator block was used in 3 patients and a bilateral block in 1 patient. A Karl Storz morcellator was used in 9 patients for evacuation of the resected specimen while an Ellik's evacuator was able to remove the specimen in the remaining.

Results: Twelve patients had a single tumor with mean size of 2.5 cm (largest dimension on CECT scan). The rest had multiple tumors (median of 4 lesions, range 2 to 18). Mean operative time was 7 minutes for single tumors (range 5 to 19 minutes) and 23 minutes for multiple tumors (range 9 to 53 minutes, median 13 minutes). The bleeding was minimal in all cases and none of the patients required post-operative blood transfusion. A total of 5 obturator jerks were recorded in 2 patients on obturator block. Perivesical fat was not seen after any jerk. A loop deep muscle biopsy was taken from the tumor base after en-bloc resection and removal of all tumors. All patients except one (with 18 tumors) received post-operative mitomycin 40 mg intravesical instillation within one hour post-operatively. Catheter was removed as a matter of routine on post-operative day 2, and patients were discharged the next day (except in the patient with 18 tumors, when it was removed on day 7). Histopathology revealed low-grade Ta lesion in 15 patients and high-grade T2 disease in the rest.

Conclusion: En-bloc resection of bladder tumors is feasible and safe in pedunculated bladder tumors. This was our initial experience and we are designing a randomized trial comparing it with standard Trans-Urethral resection of Bladder Tumor (TURBT).

UP-049

Small Cell Bladder Cancer: Experience from a Tertiary Care Center

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Introduction and Objective: Small cell cancer (SCC) of bladder comprise of only 0.35% - 0.7% of all bladder tumors. It is associated with a median survival of 19.6 months for all stages in view of its aggressive course, presentation at later stages and with larger tumors. SCC of bladder has no standard treatment and current management is based on SCC lung protocols. We report here a retrospective analysis of the management of SCC bladder at our institute.

Materials and Methods: Between the period of 2014 to 2018, 12 patients with histopathological diagnosis of SCC bladder were identified and data was available for 10 patients. Data regarding patient demographics, smoking history, performance status, stage (limited/extensive), treatment received, and outcome was obtained. Survival was estimated as the time from diagnosis of SCC bladder to death or the last follow up. Survival curves were generated using the Kaplan Meier curves.

UP.049, Table 1.

	ECOG PS	HPE	NACT/RT	Regimen /Dose	Interval to RC	CT/RT	Regimen / Dose	Follow Up	Living/ Dead
1	2	SCC	0		-	CT+RT	Cis+ ETo 50Gy	14mo	Dead
2	0	SCC	CT+RT	Cis+Eto/6	36mo	-	-	44 mo	Living
3	0	SCC	CT	Cis+Eto/3	-			24mo	Living
4	0	SCC	0					8mo	Dead
5	0	SCC	CT	Cis+Eto/3	2 mo			36mo	Living
6	0	TCC	0		24mo TURBT			48mo	Living
7	0	SCC	CT	Gem+cis/3	-	-	-	24mo	Dead
8	2	SCC	CT	Cis+Eto/3	2mo			8mo	Dead
9	1	SCC	0		6mo			Perioperative death	Dead
10	1	SCC	CT	Cis+eto/3				Perioperative death	dead

Results: Data was available for 10 patients. Most of the patients were males (9/10) and smokers (8/10) with a median age of 59 years. Most patients had good ECOG performance status of 0-1 (8/10) and presented with limited stage disease (9/10). The only patient with extensive disease was a non-smoker female presenting with involvement of cervix and vagina. All patients presented with hematuria and underwent TURBT. Post TURBT, treatment was at surgeon's discretion. One patient received chemoradiotherapy without undergoing radical cystectomy, three received chemotherapy only. Three patients received neoadjuvant chemotherapy followed by radical cystectomy and one patient underwent upfront cystectomy. Two patients underwent TURBT only. The mean follow up period was 20.6 months. Four patients were alive till the last follow up amongst which two had received neoadjuvant chemotherapy followed by cystectomy, one only completion TURBT and one only chemotherapy. The overall median survival was 14 months.

Conclusion: SCC of bladder is a rare aggressive tumor affecting the elderly smokers. The prognosis is influenced by performance status, extent of disease and use of chemotherapy either in neoadjuvant or adjuvant setting. For young patients, cystectomy with chemotherapy offers better survival as compared to chemoradiation alone.

UP-050

Initial TURBt Experience of Photodynamic Diagnosis with Oral 5-Aminolevulinic Acid Using New Light Source System Aladuck®

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Introduction and Objective: Photodynamic diagnosis (PDD) can increase the sensitivity of detecting bladder cancer in flat lesions, compared with traditional cystoscopic diagnosis by white light (WL). Oral 5-aminolevulinic acid (5-ALA) became available, and PDD with 5-ALA is expected to be widespread. However, a whole integrated transurethral resection (TUR) system was needed to introduce 5-ALA PDD. Aladuck® light source system (SBI Pharmaceuticals Co Ltd.), consisting of a fluorescent light (FL) source and a band-pass filter, makes possible to perform 5-ALA PDD using conventional TUR system. We evaluated the diagnostic value of 5-ALA PDD with Aladuck® system for detecting bladder cancer in flat lesions.

Materials and Methods: Between January 2018 and September 2018, transurethral resections of bladder tumor (TURBt) with Olympus saline TUR system, in combination with Aladuck® system, were performed. Two hours before TURBt, 5-ALA (20 mg/kg) was orally administered. The bladder samples were pathologically diagnosed and analyzed with cystoscopic findings by WL and FL.

Results: A total of 19 patients, consisting of 18 male (19 cases) and a female, underwent TURBt, and, in total, 144 bladder samples (15 papillary lesions and 129 flat lesions) were analyzed. All the papillary lesions were confirmed malignant and were visible both by WL and FL. Thirteen samples (86.7%) were positive by FL. The flat lesions consisted of 35 malignant and 94 non-malignant lesions. The sensitivity was increased (68.6% by FL vs 40.0% by WL, p= 0.016). However, the specificity was decreased (77.7% by FL vs 93.6% by WL, p <0.01). The positive predictive value (53.3% by FL vs 70.0% by WL, p= 0.208) and the negative predictive value (86.9% by FL vs 80.7% by WL, p= 0.253) were not significantly different. All the samples from flat lesions, from patients who had had only low-grade pTa cancer, showed pseudo-positive by FL. No severe complication was observed with 5-ALA administration.

Conclusion: Oral 5-ALA PDD with Aladuck® system increases the sensitivity of bladder cancer in flat lesions, with less additional options.

UP-051

A Single-Center Study on Clinical Outcomes of Urachal Carcinoma

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Introduction and Objective: Urachal carcinoma is a rare disease and most patients with urachal carcinoma are diagnosed at advanced stages. However, standard care for advanced disease has not been established. We analyzed clinical outcomes of patients with urachal carcinoma in our institution.

Materials and Methods: We retrospectively reviewed our clinical database for urachal carcinoma from January 1970 to May 2018. Survival rates were calculated using the Kaplan-Meier method, and comparisons were made by a log-rank test.

Results: We identified 25 patients, including 15 males and 10 females, with a median age of 50 years (range, 27-74 years). According to the Sheldon staging, 13 patients were staged as IIIA, 5 patients IIIC, 1 patient IIID, 1 patient IVA and 5 patients IV B. En-block segmental resection was performed in 20 patients, radical cystectomy in a patient and transurethral resection or biopsy alone in 4 patients. Twelve patients had disseminated disease at initial diagnosis and five patients developed dissemination during follow up. The common sites included peritoneum in 6 patients, lung in 5 patients, and liver in 4 patients. Thirteen patients received 5FU or CDDP containing systemic chemotherapy. Five patients underwent salvage local therapy including metastasectomy or radiofrequency ablation. Overall, 5-year disease-specific survival rate (5Y-DSS) was 57% with a median follow-up duration of 36 months (range, 2 to 267 months). 5Y-DSS of stage IIIC or higher (24%) was worse than that of stage IIIA (90%) (p= 0.0282). Among patients who received chemotherapy for disseminated disease, chemotherapy with salvage local therapy was associated with better survival than chemotherapy alone (p= 0.0232).

Conclusion: En-block segmental resection was a main surgical procedure for urachal carcinoma in our series. The disease was well-controlled for patients with Stage IIIA. In patients with disseminated disease, chemotherapy combined with salvage local therapy may have contributed to prolonging survival.

UP-052

Qualitative Analysis of the Guideline Adherence to Peri-Operative Intravesical Chemotherapy in Non-Muscle Invasive Bladder Cancer: A Multi-Centre Study (IPIC: International Post-operative Intravesical Chemotherapy Study)

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Introduction and Objective: Post-operative Intravesical therapy (IVT) is strongly indicated for NMIBC (Ta and T1) and CIS urothelial carcinoma of the bladder. Studies have shown that a single dose of intravesical chemotherapy within 24 hours post TURBT reduces the five-year recurrence rate by 11.7%. Examples of intravesical agents include mitomycin C, doxorubicin, epirubicin, valrubicin and gemcitabine. The European Association of Urology guidelines on NMIBC recommend the use of a single dose of intravesical chemotherapy post TURBT for low grade (Ta, T1 or CIS) cases. Despite these guidelines, the use of post-operative intravesical chemotherapy for NMIBC is variable. We aim to assess the rate of single dose intravesical chemotherapy use post TURBT for NMIBC around world.

Materials and Methods: We conducted a multi-centre retrospective audit over a pre-defined period. Participating centres from Australia, New Zealand, England, Ireland, Belgium, USA and Argentina were recruited. After ethics approval, data was collected and entered into a REDCaps database for analysis. Multivariable logistic regression analyses were performed to identify predictors of receiving intravesical chemotherapy.

Results: A total of 432 patients undergoing TURBT for suspected low-risk NMIBC were included of which 180 (41.7%) were instilled with intravesical chemotherapy. The most commonly used agents were epirubicin (50.6%, n=91) and mitomycin C (47.8%, n=86). The majority of patient were instilled within 6 hours (58.3%, n=105) and this was done in the ward/day procedure area (66.7%, n=120). On multivariable analysis, patients with four or more lesions were more likely to receive IVT compare to those with three and fewer tumours [OR 2.18, 95%CI 1.06-4.55]. Patients who had a probable low-grade lesion identified on flexible cystoscopy prior to TURBT were also more likely to receive IVT at TUBT compared to those that did not undergoing flexible cystoscopy beforehand [OR 1.91, 95%CI 1.02-3.64]. However, patients undergoing TURBT for recurrent tumours were less likely to receive IVT compared to those with primary lesions [OR 0.22, 95%CI 0.12-0.38]. In the majority of patients (54.8%, n=138), there was no documented reason for not administering IVT. However, the most common reasons provided for not instilling chemotherapy were that malignancy was not suspected (11.9%), BCG treatment was recently administered or planned (11.5%) and deep resection (10.7%).

Conclusion: Across the different parts of the world, rate of adherence to use of post-operative intravesical chemotherapy was 41.7% with mitomycin and epirubicin being the preferred choices. Our multicentre audit highlights the need for better adherence to international guideline be across the world to reduce rates of recurrence in NMIBC.

UP-053

Experience with Photo Dynamic Diagnostics Using Flexible Cystoscope and Bladder Tumor Destruction with Diode Laser in Local Anesthesia in Outpatient Clinic

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Introduction and Objective: High recurrence rate (50-70%) of non-muscle invasive bladder cancer (NMIBC) after transurethral bladder tumor resection (TURB) is mainly due to under-diagnosis of small tumors and carcinoma in situ (CIS), as well as inadequate tumor resection. Patients with recurrent NMIBC are usually re-treated with new TURB in general anesthesia. The use of photo dynamic diagnostics (PDD) in time of primary TUR-B has improved detection and treatment of bladder cancer. Aim of this study was to evaluate the feasibility of flexible cystoscopy PDD and tumor destruction with diode lasers in local anesthesia in selected NMIBC patients at the outpatient urological clinic.

Materials and Methods: In the period of August 2017- August 2018, a total of 70 patients were included in this study. The inclusion criteria were recurrent NMIBC <10 mm; negative cystoscopy and positive cytology; cancer suspected findings on white light cystoscopy, control of selected T1HG and patient treated using BCG instillations. All patients received Hexvix and intra-vesical application of 20 ml Xylocain 1% one hour prior to the procedure. White cystoscopy, PDD, tumor biopsy and tumor destruction with diode lasers were performed as outpatient procedure. Pain experiences were assessed using visual analogue scale (VAS, range: 0-10).

Results: A total of 74 procedures were performed on 70 patients. 16 patients with earlier Ta LG were treated only with diode lasers without biopsy. Tumor biopsy and diode laser was done in 54 patients. CIS findings were confirmed in 8 patients (15%). Pain experiences were 3 for biopsy and 5 for laser coagulation.

Conclusion: Non muscle invasive bladder cancer can be diagnosed and treated in outpatient clinic using local anesthesia, flexible cystoscopy, PDD and diode laser. The efficacy of this treatment should be prospectively evaluated.

UP-054

Population-Based Outcomes Comparing Radical Cystectomy with Trimodal Therapy for Patients Diagnosed with Localized Muscle-Invasive Bladder Cancer

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Introduction and Objective: Radical cystectomy is the guideline-recommended treatment for muscle-invasive bladder cancer; however, the use of trimodal therapy has increased in recent years with conflicting survival outcomes. The objective of this study is to assess differences in overall survival, disease-specific survival, and cost when comparing radical cystectomy to trimodal therapy for the management of localized muscle-invasive bladder cancer.

Materials and Methods: A total of 2,963 patients aged 66 years or older diagnosed with clinical stage T2-4a bladder cancer from January 1, 2002 to December 31, 2011 from the Surveillance, Epidemiology, and End Results (SEER)-Medicare data were analyzed. Conventional regression, propensity score matching (PSM) and inverse probability of treatment weighting (IPTW) were used to compare RC and TMT for overall and cancer-specific survival, and cost.

Results: Patients who underwent TMT had significantly decreased overall (conventional regression: Hazard Ratio (HR) 1.54, 95% Confidence Interval (CI), 1.39-1.71; PSM: HR 1.49, 95% CI 1.31-1.69; IPTW: HR 1.54, 95% CI 1.39-1.71) and cancer-specific (conventional regression: HR 1.51, 95% CI 1.40-1.63; PSM: HR 1.55, 95% CI 1.32-1.83; IPTW: HR 1.51, 95% CI 1.40-1.63) survival. Median total costs were significantly higher with trimodal therapy than with radical cystectomy at 6-month ($171,401 vs. $99,890, p <0.001).

Conclusion: Using population-based data and different analytic methods to control for imbalance between study groups, we found that trimodal therapy was associated with decreased overall and cancer-specific survival at increased costs compared to radical cystectomy.

UP-055

Proximity to Oil Refineries and Risk of Bladder Cancer: A Population-Based Analysis

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Introduction and Objective: Exposure to aromatic amines is a risk factor for bladder cancer. Incidence rates according to proximity to oil refineries are largely unknown. We sought to determine proximity of oil refineries and bladder cancer incidence in the State of Texas which is home to the largest number of oil refineries in the United States.

Materials and Methods: The Texas Cancer Registry database was used to identify patients diagnosed with bladder cancer from January 1, 2001 to December 31, 2014. The U.S. census data from 2010 was used to ascertain overall population size, age and sex distributions. Heat maps of the 28 active oil refineries in Texas were developed. Incidence of bladder cancer were compared according to proximity (<10 vs. ≥ 10 miles) to an oil refinery. Risk ratios were adjusted using a Poisson regression model.

Results: A total of 45,517 incident bladder cancer cases were identified of which 5,501 cases were within 10 miles of an oil refinery. In adjusted analyses, bladder cancer risk was significantly greater among males vs. females (Relative Risk (RR) 3.41, 95% Confidence Interval (CI), 3.33-3.50), and greater among people living within 10 miles from an oil refinery than those

living outside a 10-mile radius from an oil refinery (RR 1.19, 95% CI, 1.08-1.31).

Conclusion: People living within 10 miles from oil refineries were at greater risk for bladder cancer. Further research into exposure to oil refineries and bladder cancer incidence is warranted.

UP-056

Epidermoid Carcinoma of the Bladder, Clinical and Therapeutic Features: About 58 Cases

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[1]Habib Bourguiba Hospital, Sfax, Tunisia; [2]University of Sfax, Sfax, Tunisia

Introduction and Objective: Epidermoid carcinoma of the bladder is a rare tumor in Tunisia. Our aim is to study the epidemiological, clinical, therapeutic and evolutionary characteristics of this pathology.

Materials and Methods: This is a 35-year retrospective study (from December 1983 to December 2018) in the Urology Department of Habib Bourguiba University Hospital in Sfax.

Results: There were 58 cases of epidermoid carcinoma of the bladder (ECB) out of 1150 cases of primary bladder tumors (5%). The male predominance was important (44 men, 14 women) with a mean age of 60 years old (33-88 years). 30 patients were smoker. Bladder stones were found in 8 patients. The tumor was uni-focal in 36 cases, with a solid appearance in 30 cases and a larger than 4 cm in 34 cases. The tumor was pure ECB in 54 cases and verrucous ECB in 4 cases. It was infiltrating in 55 cases with associated urinary schistosomiasis in 3 cases. Radical cystectomy was performed in 22 patients: 16 cystectomies and 6 anterior pelvectomies. Seven patients had partial cystectomy. The remaining cases had only palliative treatment. After an average follow-up of 25 months (3-168 months), locoregional recurrence was noted in two patients.

Conclusion: Epidermoid carcinoma remains a rare cancer in our climate. Radical cystectomy remains the standard treatment. Early diagnosis, especially in at-risk individuals, must be able to improve a traditionally poor prognosis.

UP-057

Variation in Tumour Volume of Bladder Cancer Among Histological Subtypes

Butler A[1], Khan J[2], Ali M[2], Motiwala H[2], **Robinson S**[2]

[1]Oxford University, Oxford, United Kingdom; [2]Frimley Health Foundation Trust, Frimley, United Kingdom

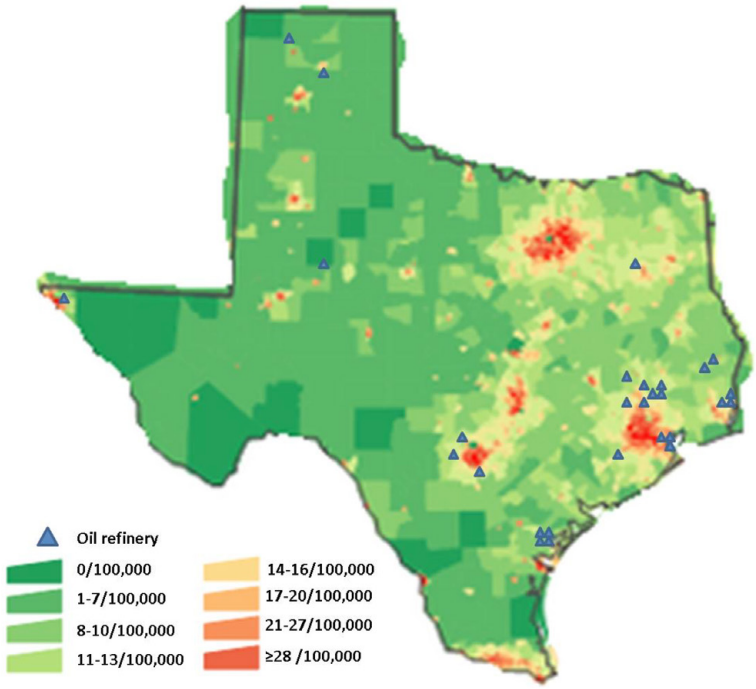
Introduction and Objective: Bladder tumour volume is difficult to calculate. Using a new technique, we have seen that there are significant differences between the histological subtypes compared to transitional cell cancer. This estimation of tumour volume affects prognosis.

Materials and Methods: We retrospectively measured the parameters of length and width of tumour post radical cystectomy. We had a total of 236 cases. We estimated tumour volume by assuming the 3rd dimension to be 50% of the width. We then used the ellipsoid tumour calculator LxHxWxpi/6 to give an approximation to the volume. Pathologists do not ordinarily estimate tumour volume on cystectomy specimens. They will record the two largest diameters, the length and width. The tumours are irregular in shape and can be multifocal. We included TURBT chippings. Regression analysis to determine significant predictors of mortality.

Results: Attached.

Conclusion: The mean tumour volume of transitional cell cancer is 15 cc. There was no significant difference between neuroendocrine, sarcomatous, adenocarcinoma and metastatic subtypes. There was a significant difference in the size of sarcomatous variants with a mean volume of 36 cc and the enormous size of squamous tumours with a mean volume of 106 cc. We note that half of the squamous tumours were of low or medium grade which may have a bearing on how they can reach this size. Regression analysis shows the known predictors of mortality plus, significantly, the amount of tumour volume using this model. TV is significant. Tumour volume should be included as a prognostic risk factor to advise decisions making post TURBT and further management post cystectomy.

UP.055, Figure 1. Heat Map for Bladder Cancer Incidence in the State of Texas (Patient/ 100,000 People)



UP.057, Table 1: Results.

	Squamous cell cancer	Neuroendocrine cancer	Sarcomatous cancer	adenocarcinoma	Metastatic cancer	Transitional cell cancer
N patients	15	7	9	3	4	198
Mean cc	106	33	36	3	11	15
Standard deviation	152	62	45	4	10	29
T test compared to TCC	7	1.4	2	0.7	0.3	
P compared to TCC	<0.0001	0.14	0.046	0.46	0.76	

Cox proportional hazards regression

Covariate	P value
Age	0.0325
CIS2	0.0398
PSM	0.0018
T_Stage=3	0.0002
T_Stage=4	<0.0001
volume_cc	<0.0001

UP-058

A Comparison of Squamous Cancer of the Bladder with Transitional Call Carcinoma of the Bladder

Robinson S[1], Butler A[2], Khan J[1], Motiwala H[1]

[1]*Frimley Health Foundation Trust, Frimley, United Kingdom;* [2]*Oxford University, Oxford, United Kingdom*

Introduction and Objective: Squamous carcinoma of the bladder has a poor prognosis. We show in our series that there are many unusual features. This includes a worse all-cause mortality.

Materials and Methods: Study population was 258 patients who underwent radical cystectomy who were followed over 18 years. Two hundred and thirty had transitional cell cancer and 16 had squamous cell cancer on final histology. Kaplan Meier curves are generated. Patient and tumour characteristics are compared.

Results: Attached.

Conclusion: They have very large tumours that are locally advanced with positive surgical margins. The tumour volumes are of a similar size amongst the range of grades in SCC. There is a greater disease specific mortality for SCC. However, half of SCC are low and intermediate grades. Both long term SCC survivors had high grade tumours. A high grade SCC may not be as severe as a high grade TCC? Low and medium grade SCC does not confer a survival advantage, the effect of stage being a more powerful determinant of prognosis. There is a worse prognosis for SCC. This is probably due to a higher incidence of severe comorbidities accounting for the worse all cause mortality. Features specific to SCC account for the higher disease specific mortality.

UP-059

Association Between Socioeconomic Status and Bladder Carcinoma Stage at Diagnosis: About 168 Patients

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Introduction and Objective: Socioeconomic status (SES) is known to directly influence bladder cancer outcome. However, a limited number of studies have investigated SES differences in bladder tumour stage at diagnosis. We investigated whether SES, as represented by level of education, is predictive for advanced tumour stage at diagnosis of bladder carcinoma, overall and by gender. The effect of cigarette smoking on the association was also evaluated.

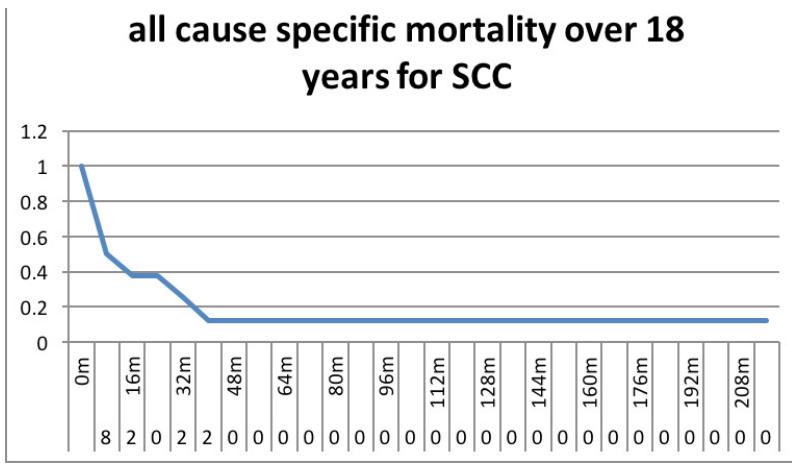
Materials and Methods: We reviewed all new patient diagnosed with bladder carcinoma between January 2011 and February 2019 at Mâamouri Teaching Hospital. They were 161 men and 7 women with a median age of 58 +/- 5.7 years.

Results: Overall, 131 patients had completed primary school and 88 had completed high school. They were non-muscle invasive bladder cancer, muscle-invasive and metastatic bladder cancer in respectively 133, 24 and 11 patients. Patients with low education level have significantly higher risk of advanced tumour stage at diagnosis compared with those who completed high

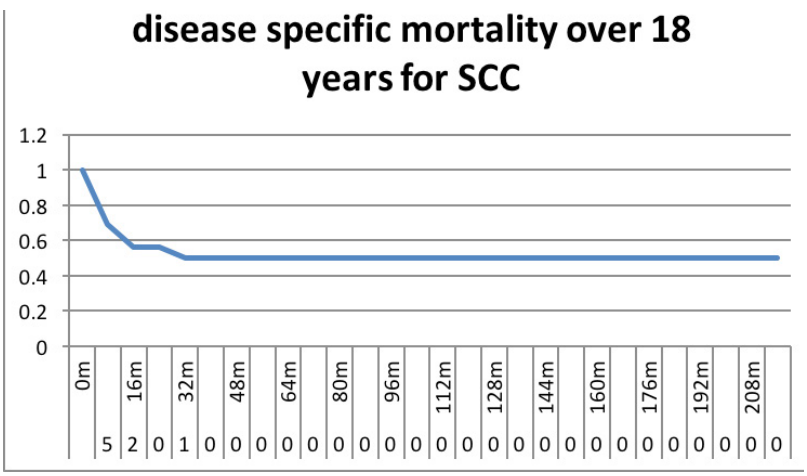
UP.058, Table 1: Results.

	16 Squamous cell	230 Transition cell	P value fishers and t
Private	3	32	0.7
Male/female	5/11	185/45	0.03
Age	67	68	0.58
Grade High	8	213	0.0001
Intermediate	6	17	0.0021
Low	2	0	0.0045
Tumour volume cc	101	14	0.019
Positive surgical margins	6/16 (38%)	21/230 (9%)	0.0052
Localised/locally advanced	3/13 (19%)	140/90 (61%)	0.0006
Node positive patients	4	51	1.0
Progression free survival at 5 years	0.63	0.76	0.046
Disease specific survival at 5 years	0.5	0.71	0.0037
All cause survival at 5 years	0.13	0.61	0.0001
Number of disease specific deaths	8 (50%)	80 (35%)	0.31
Number of all cause deaths	14 (88%)	113 (49%)	0.010

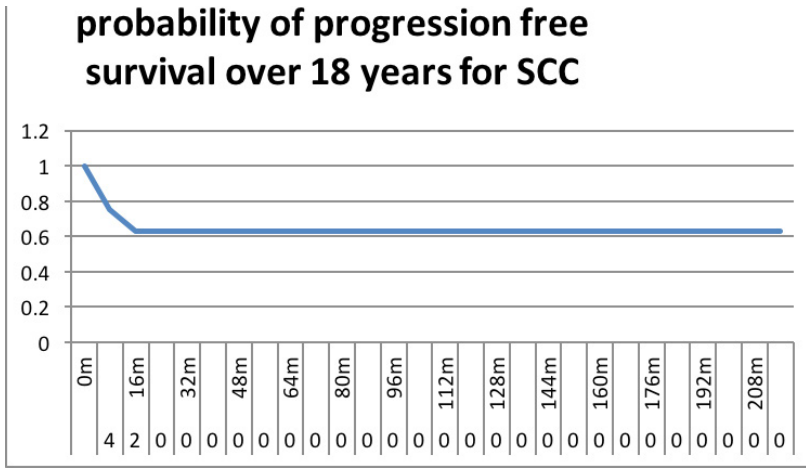
UP.058, Figure 1.



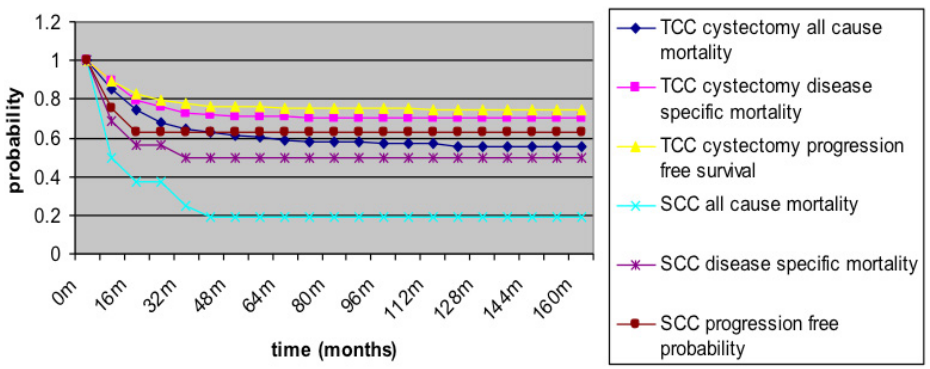
UP.058, Figure 2.



UP.058, Figure 3.



UP.058, Figure 4. Squamous v transitional cell cystectomy



school (p= 0.0013). Patient's number was not enough to detect any influence of gender. Our results were similar when we included cigarette smoking.

Conclusion: Lower level of education was associated with a higher risk of advanced bladder cancer stage at diagnosis. Further studies are needed to determine how to reduce this diagnostic delay.

UP-060

Self-Esteem and Quality of Life in Ostomized Patients due to Bladder Cancer

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Introduction and Objective: All unhappy events experienced by ostomatized patients during their lifetime would develop low self-esteem and low self-perception of themselves and their bodies. Few studies have addressed the concept of self in patients who have had an ostomy. To assess self-esteem (SE), overall self-perception and body satisfaction in ostomized patients due to bladder cancer and determine any relationship that may exist between them.

Materials and Methods: Multi-institutional retrospective review was performed on patients with bladder cancer and who underwent radical cystectomy with urinary diversion via the ileal loop (Bricker's operation). We included adult patients who didn't receive chemo- or radiotherapy with no evidence of metastasis or recurrence and followed at least for 3 years. They were asked about all aspect of their SE according to Rosenberg's self-esteem scale. The present study accounts 36 patients. They were 20 men and 16 women with an average age of 60.4 years (24-75). They were single in only 7 cases.

Results: SE was very weak to weak in 23 patients and strong to very strong in 4 of them. Overall perception of self was negative in 13 patients of which strong to very strong in one case only. Overall perception of self was positive in 23 patients of which strong to very strong in 9. Body satisfaction was negative in 10 patients (strong to very strong in one case) and positive in 26 patients (strong to very strong in 4 cases). Strong and significant positive correlations were found between body satisfaction and overall perception ($r = 0.77$, $p < 0.001$), body satisfaction and SE ($r = 0.59$, $p < 0.001$), and overall perception and SE ($r = 0.769$, $p < 0.001$). Suicide attempt was reported by two patients.

Conclusion: Self-esteem, overall self-perception and body satisfaction in ostomized patients due to bladder cancer are low with strong relationship between them.

UP-061

Correlation Between Educational Status and Secondary Prevention

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Introduction and Objective: 95% of all tumors of the bladder are urothelial carcinomas. 80% of these carcinomas are non-invasive at initial diagnosis. 92% are located in the bladder, 6% in the ureter and 2% in the renal pelvis. Often the localization is multicentric, 10 to 15% of these tumors develop a muscle-invasive growth. Because of the high risk of recurrence, intravesical prophylaxis, for example, mitomycin or BCG are established and anchored in the guidelines. We analyzed what measures patients take for themselves to reduce their risk of recurrence.

Material and Methods: In the time between January 2017 and December 2018, we interviewed a total of 97 patients as part of the tumor follow-up in our uro-oncological consultation - with a diagnosis of maximum pTa urothelial carcinoma - with regard to educational status, prevention, smoking habits, nutrition and drinking habits, aftercare, instillation therapy.

Results: 22 high school graduates (A), 29 intermediate maturity (MR), 46 secondary school (HS). Nicotine abuse: A: 68%, 55% MR, 54% HS. 69 patients developed at least 1 recurrence (71%). The mean recurrence frequency was 0.44 / J. Recurrence: 17A, 22MR, 30HS. 52 patients had received at least one intravesical recurrence prophylaxis. 67% of patients said the disease had little or no change in their lives, developed recurrences; 68% of patients who reported a very strong or complete change in their lives, stayed relapse-free. All but 3 were in follow-up care. 52 patients had received at least one intravesical recurrence prophylaxis (10A, 18MR, 24HS). 14 patients took vitamin supplements (N = 5A, 4MR, 5HS), 12 patients mistletoe extracts (N = 3A, 3MR, 6HS) intermittently. Of the initial 56 smokers, 6 did not change their smoking habits (n = 1A, 1MR, 4HS), 40 gave up smoking (n = 10A, 12MR, 18HS), 7 reduced the nicotine dose (n = 0A, 4MR, 3HS). 25 patients reported a change in diet (n = 6A, 8MR, 11HS): mainly reduction of meat consumption, more fruits and vegetables. The water intake was increased by 49 patients (n = 14A, 15MR, 20HS). Two patients completely changed their profession due to the diagnosis (both high school graduates), although they were not in professional high-risk groups. Twenty-four secondary malignancies were discovered due to improved screening behavior (n = 7A, 4MR, HS).

Conclusion: The self-taken measures are manifold and mainly refer to nicotine consumption, drinking and eating habits. Although in the supposed higher educational level and presumably with better access to information, it is not high school graduates changing crucial habits or seeking secondary prevention. It is the secondary school graduates.

UP-062

Place of Lymphadenectomy During Cystectomy in Advanced and Metastatic Bladder Cancer Patients

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National Cancer Institute, Kyiv, Ukraine

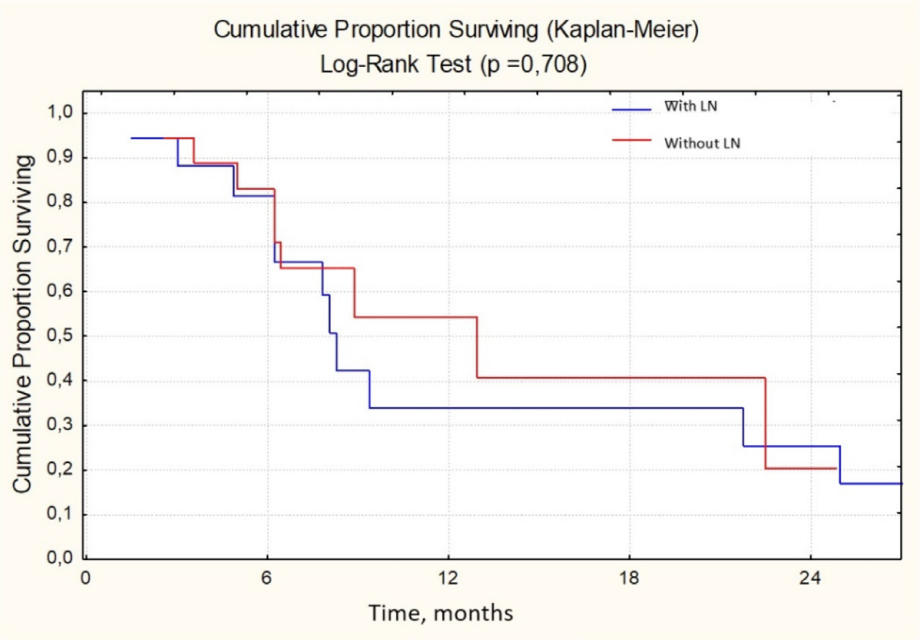
Introduction and Objective: Cytoreductive cystectomy is a part of complex surgery in patients with locally advanced and metastatic bladder cancer. Major indication for such approach is severe symptomatic disease. Lymphadenectomy (LN) is a part of standard cystectomy, although its impact on symptoms reduction is quite unknown. LN may influence outcomes prolonging operative time and increasing surgical complexity in cases with bulky disease. Our objective was to study the efficacy of LN during surgical treatment of patients with advanced and metastatic bladder cancer.

Materials and Methods: Prospective study of 36 patients with locally advanced and metastatic bladder cancer that were treated in our department (M1 and/or N3 disease. Patients divided into 2 groups (mean age 69.8 ± 8.8 years) with regard to performance of standard pelvic LN during cystectomy. During analysis of 2 groups there was no statistical difference in major parameters: age, male/female ratio, ECOG status and TNM stage distribution between the groups. Indications for surgery were severe symptomatic disease: macroscopic hematuria, dysuria, pain, fatigue. Perioperative complications rate was evaluated with assessment of treatment results and Kaplan-Maier curves were built for overall survival analysis in study groups.

Results: Surgery duration in group without LN was 132 ± 23 min vs. 154 ± 27 min for group with standard LN. Mean blood loss was 400 vs. 375cc. There was no statistically significant difference between the groups in terms of postoperative hospital stay, blood transfusion rate and in perioperative complications rates, with only one significant intraoperative complication – external iliac vein trauma that needed vascular reconstruction. Late postoperative complications rate were equal with 2 (1 in each group) complications that needed reoperation within 30 days after surgery. Survival analysis showed no difference in overall survival rates at 2 and 3 years with 58% vs. 59% and 49% vs.49% respectively for both groups (Fig. 1).

Conclusion: Our study revealed that in symptomatic patients with advanced and metastatic bladder cancer cystectomy may be performed without standard LN. Such approach may improve surgical outcomes decreasing overall operative time and intraoperative complications associated with LN without impact on overall survival. Such approach need further evaluation in larger patient cohorts.

UP.062, Figure 1: Survival curves for patients with or without LN.



UP-063

The Efficacy and Predictive Factors of Intravesical Therapy with Shanghai BCG Strain in High Risk Non-Muscle Invasive Bladder Cancer

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Fudan University Shanghai Cancer Center, Shanghai, China

Introduction and Objective: Bacillus Calmette-Guérin (BCG) is used as first-line intravesical therapy following tumor resection of non–muscle-invasive bladder cancer (NMIBC) for intermediate and high-risk patients. Primary producers of BCG announced shortages within the last decade. One of the strategies for coping with this shortage is to find alternative BCG products worldwide and to prove the same oncologic responses. Here we investigated the efficacy and safety of a Shanghai BCG strain (D2PB302, 60 mg/6.0*10^7C-FU) for the intravesical therapy in high risk NMIBC patients. Materials and Methods? A total of 161 high-risk NMIBC patients were reviewed in our hospital from January 2014 to December 2017. They were all treated with the Shanghai BCG strain instillation after transurethral resection of bladder tumor (TURBT). Induction scheme of six-weekly and three fortnightly instillations started two weeks after the initial TUR or re-TUR. Maintenance instillations were then be offered in a scheme of ten monthly instillations. During treatment, patients were offered cystoscopy and cytology every three months, while CT and chest radiographs were reviewed every 6-12 months. All 161 patients were followed up. Univariate and multivariate regression analyses were used to predict risk factors for failure of BCG instillation in bladder cancer.

Results: The data of seven patients were excluded because of drug discontinuance for severe adverse events and 154 patients were followed up. Median (interquartile range) follow-up of 25 (3-57) months. The overall recurrence rate was 28.6% and the 2-year recurrence-free survival was 72.5%. On univariate analysis, recurrence status, use of instillation chemotherapy before and re-staging transurethral resection influenced the recurrence. Multivariate regression analysis showed recurrence status was an independent prognostic factor for recurrence-free survival. The incidence of adverse events in all 161 instillation patients was 40.4%. Grade I, grade II and grade III adverse events accounted for 53.8%, 40.0% and 6.2% respectively.

Conclusion: The data of seven patients were excluded because of drug discontinuance for severe adverse events, and 154 patients were followed up. Median (interquartile range) follow-up was of 25 (3-57) months. The overall recurrence rate was 28.6% and the 2-year recurrence-free survival was 72.5%. On univariate analysis, recurrence status, use of instillation chemotherapy before and re-staging transurethral resection influenced the recurrence. Multivariate regression analysis showed recurrence status was an independent prognostic factor for recurrence-free survival. The incidence of adverse events in all 161 instillation patients was 40.4%. Grade I, grade II and grade III adverse events accounted for 53.8%, 40.0% and 6.2% respectively.

UP-064

A Urine Excrement Shunt Surgery for the Treatment of Severe Metabolic Disorders After Sigma Rectum Pouch of Bladder Cancer

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Introduction and Objective: We report a urine excrement shunt surgery and investigate its validity in the treatment of severe metabolic disorders after Sigma rectum pouch for bladder cancer.

Materials and Methods: Six male patients who received radical cystectomy and Sigma rectum pouch due to bladder cancer two to five years ago generated hyperchloremic metabolic acidosis, hypokalemia and renal dysfunction. They received urine excrement shunt surgery (the pouch was isolated from intestinal tract and abdomen ostomy was made; the sigmoid colon and rectum were reconnected), and the parameters of blood gas analysis, electrolytes and renal function after surgery were compared with those before surgery. Data were analyzed by SPSS 20.0, using ANOVA of single factor repeated measurement data.

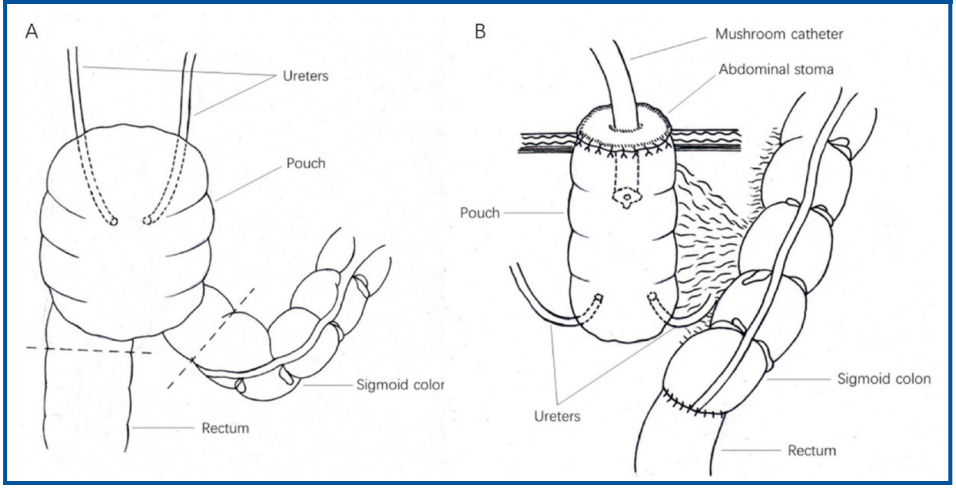
Results: Blood hydrocarbonate significantly improved three months after surgery compared to pre-operatively. Six months later, blood pH and potassium significantly improved and remained normal.

UP.064, Table 1. The results of arterial blood gas analysis, serum electrolytes and renal function one-week pre-operation and three months to three years post-operation (mean ± SE).

	Arterial blood gas analysis			Serum electrolytes		Renal function	
Follow-up time	pH	Hydrocarbonate (mmol/L)	BE (mmol/L)	Potassium (mmol/L)	Chlorine (mmol/L)	BUN (mmol/L)	SCr (μmol/L)
pre-operation	7.16±0.08	7.57±4.25	-19.68±4.85	3.12±0.21	110.90±4.38	20.15±3.77	304.67±55.58
3 months	7.31±0.09	17.90±4.12*	-7.27±4.31	4.05±0.69	107.60±3.68	19.52±3.45	271.17±31.90
6 months	7.36±0.04*	19.72±5.26*	-4.77±5.42*	3.95±0.38*	107.08±4.39	12.32±3.46*	213.00±44.85
12 months	7.42±0.02*	22.72±2.39*	-1.30±1.59*	4.30±0.22*	105.82±3.12	9.40±2.40*	197.33±33.34
24 months	7.42±0.01*	24.78±1.17*	0.50±1.25*	4.08±0.35*	101.43±5.61	10.10±1.16*	194.33±27.12
36 months	7.42±0.02*	25.03±0.67*	0.32±1.26*	3.78±0.23*	99.17±2.75*	9.87±1.42*	181.50±15.51*

* Compared with data pre-operation by ANOVA of single factor repeated measurement data, P<0.05.

UP.064, Figure 1. Schematic of the pouch ostomy on the abdominal wall and sigmoid-rectal anastomosis. (A) Schematic of the Sigma rectal pouch. The dotted lines were cut lines between the pouch and sigmoid colon and rectum. (B) The pouch was isolated from intestinal tract and abdomen ostomy was made; the sigmoid colon and rectum were re-coincided to recover the intestinal continuity.



Serum chlorine and creatinine significantly improved until three years post-operation.

Conclusion: Urine excrement shunt surgery, which separated the pouch and intestine, corrected the acidosis and electrolyte disturbances effectively. It might be an effective option to treat such kinds of severe complications after Sigma rectum pouch.

UP-065

Does the Clinical Value of PSA Increase During Intravesical Chemotherapy for the Non-Muscle-Invasive Bladder Cancer, as Has Been Observed for Immunotherapy?: A Prospective Multicenter Study

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Introduction and Objective: Over the past few years, several studies have reported that the clinical value of serum prostate specific antigen (PSA) increase in up to 40% of intravesical immunotherapy patients for non-muscle invasive bladder cancer (NMIBC) and return to baseline by 3~12 months. Aim of this prospective multicenter study was to evaluate PSA changes induced by intravesical chemotherapy. Moreover, the differences between clinical parameters and PSA changes induced by chemotherapy and immunotherapy were also investigated.

Materials and Methods: The clinical value of serum PSA was prospectively assessed in 102 male patients who had undergone intravesical immunotherapy (78 cases) or chemotherapy (24 cases) after transurethral resection of NMIBC from 2015 to 2018. Serum PSA, digital rectal examination (DRE), urinalysis, urine culture, International Prostate Symptom Score (IPSS) and quality of life (QoL) were performed before and at 3, 6, and 12 months during the maintenance course. Immunotherapy (Oncotice, 12.5 mg in a volume of 50 mL normal saline) and chemotherapy (50 mg of epirubicin) protocols were the same for all cases. Patients were instructed to refrain from bladder voiding until 2 hours after BCG and 1 hour after epirubicin instillation. A prostate biopsy was performed when serum PSA was persistently greater than 4 ng/mL in 2 or more samples or an abnormal nodule was palpated on the DRE.

Results: PSA elevations were detected in 48 patients (62%)/16 (67%) during BCG and epirubicin, respectively. Overall average PSA statistically increased from 1.79/2.52 ng/mL before treatment to 2.56/3.43 ng/mL and 2.27/3.31 ng/mL at 3 and 6 months from the beginning of the treatment with BCG and epirubicin, respectively (p <0.001/ p= 0.001 at 3 months and p= 0.012/ p= 0.004 at 6 months) and returned to baseline levels within 12 months. Although there was a tendency for the irritative symptom scores of IPSS and QoL scores to be worsen in the patients with intravesical chemotherapy, there was no statistically significant correlation. PSA persistently greater than 4 ng/mL in 2 or more samples was detected in 2 (2.6%) and 1 (4.2%) patients after BCG and epirubicin instillations, respectively, but was no more evident at 12 months. Prostate biopsies, performed in 3 patients (2 during BCG and 1 during epirubicin), showed granulomatous prostatitis, nonspecific inflammation and benign prostatic hyperplasia, of whom none had prostate cancer.

Conclusion: Our results show that a statistically significant PSA increase is identified during immunotherapy and chemotherapy. However, PSA elevation in patients treated with intravesical BCG or epirubicin is self-limited and prostate biopsies are not mandatory in such patients and could be withheld at 12 months, while monitoring PSA.

UP-066

Urachal Cysts: A Single Centre Retrospective Analysis of Management

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Introduction and Objective: To review our 300 bed centres' experience in the management of urachal anomalies servicing a catchment of 300,000.

Materials and Methods: Case review of the medical records of 14 patients managed at our centre with urachal anomalies between the years 2009 and 2016. We recorded details of the presentation, diagnosis, method of treatment, histology and patient outcome.

Results: Between the years 2009 and 2016, 14 patients (nine males, five females) were diagnosed with ura-

chal anomalies, principally cysts. Patient presentations varied from incidental diagnoses on imaging, to peritonism with sepsis. The mean age was 29 (range 4 months – 66 years). Ten had imaging defined urachal cysts, and 4 had sinuses. Six patients had bladder findings on cystoscopy. Of the 14, 4 were treated laparoscopically and 7 with open surgery, the 3 remaining patients chose active surveillance with imaging. All 11 operative patients had benign histology with normal tissue or active inflammation.

Conclusion: Our case series demonstrates that urachal cysts in adults may not be as rare or have the incidence of malignancy as other case series suggest. The different modalities of management of these patients was surgeon dependant but had no impact on the long-term outcome. Laparoscopic surgery has been our team's preference for uncomplicated cases, which has led to equivalent patient outcomes with grossly reduced length of stay (4 days vs 8). Our findings of no signs of malignancy on histology in any of our cases is at odds with other published work suggesting as many as 50% of urachal abnormalities are malignant. In our unit the indications for surgical intervention are to relieve symptoms or if the patient is immunocompromised or has anxieties about the possibility of cancer.

UP-067

The Vaginal Tumor: A Rare Urothelial Carcinoma Metastasis Without Intravesical Tumor Recurrence

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Introduction and Objective: Urinary bladder cancer is the second most common urogenital tumor in Germany, with 16,000 new cases per year in Germany and the most common in women. The metastasis rate at diagnosis is about 15%. Typical metastases are bone, liver, brain and peritoneum. In contrast, only a few cases of vaginal metastases have been reported in the literature.

Materials and Methods: In October 2015, a 72-year-old woman presented with gross hematuria. A TURB with evidence of a urothelial carcinoma stage T1 G2 has been performed. The following resection remained without tumor detection. Two years later, she was again introduced to us for a vaginal tumor. A gynecological biopsy had already been performed, which suggested a metastasis of the known urothelial carcinoma. In the vaginal tumor excision performed by us a poorly differentiated, non-small cell urothelial carcinoma with transitional differentiation could be secured. It was followed by a radical cystectomy with Mainz pouch plant. Histological examination revealed a lymphogenic metastases of urothelial carcinoma stage T0 N1 (1/27) M1 (vag) L0 V0 Pn0 R0. Primary adjuvant chemotherapy with gemcitabine / cisplatin has been switched to vinflunine after the first cycle due to intolerance. Currently the patient remains recurrence free.

Results: This case shows the very rare appearance of a vaginal metastasis with inconspicuous bladder findings two years after TURB of a non-muscle invasive urothelial carcinoma.

Conclusion: Due to the poor prognosis, a radical surgical rehabilitation should always be sought.

UP-068

Can We Perform More Prostate-Sparing Cystectomy in Muscle Invasive Bladder Cancer Chinese Male Patients?

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Introduction and Objective: Radical cystoprostatectomy is the gold standard for muscle invasive bladder cancer. Prostate adenocarcinoma is often found incidentally in the cystoprostatectomy specimen. Its clinical significance has not been well characterized.

Materials and Methods: We review a cohort of 238 male patients who underwent cystoprostatectomy for primary muscle invasive urothelial carcinoma of bladder between 1998 and 2017 at our institution. The baseline patient characteristics and prostate cancer clinical, biochemical and pathological characteristics were reviewed.

Results: Over a median follow up of 13 years, 238 Chinese male patients, aged 44 to 88 (median age 69) received cystoprostatectomy. 31 (13%) had incidental prostate adenocarcinoma found in the pathology specimen. All of them had organ confined disease (≤T2a)and ≤ Gleason Score 3+3 (Gleason Grade Group 1). All of them attained undetectable PSA level post-operatively. None of them had biochemical recurrence nor received androgen deprivation therapy. None died of prostate cancer.

Conclusion: Incidental prostate adenocarcinoma is reported in one third of radical cystoprostatectomy patients. Our Chinese cohort has less clinically significant prostate cancer as compared to commonly quoted figure from western population. Low risk prostate cancer is commonly managed with active surveillance in this era. Since prostate-sparing cystectomy may confer better preserved erectile function and continence, we may consider prostate-sparing cystectomy in highly selected patients without compromising oncological outcomes, e.g. young male patients. Further studies are paramount in determining the oncological and functional outcomes and long-term efficiency.

UP-069

Choice of Urinary Diversion After Radical Cystectomy: Correlation with Clinical Data and Contemporary Trends in Management

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Introduction and Objective: The purpose of this study is to highlight the trend in the choice of urinary diversion in patients who underwent radical cystectomy in our department in a time period of 5 years during the Greek financial crisis.

Materials and Methods: We retrospectively studied all radical cystectomies that have been carried out in the 1st University Urological Department in Athens between 2013 and 2017. We examined the kind of the selected urinary diversion in correlation with preoperative factors, postoperative findings as well as changes in the surgical practice through this time period.

Results: Between 2013 and 2017 we performed in total 300 radical cystectomies followed by orthotopic neobladder (ON) in 55 patients (18,4%), by ileal conduit (IC) in 59 patients (19,6%) and by cutaneous ureterostomy (CU) in 186 patients (62%). The annual percentages were ON-22%, IC-22%, CU-56% in 2013 whereas ON-18%, IC-12%, CU-70% in 2017. The mean age of the patients was 71 years in the CU group, 68 years in the IC group and 61,5 years in the ON group. As far as TNM stage is concerned, in the ON group 86% of patients had T1-T2 tumors and 80% had N0 stage, whereas in the CU group 70% of patients had T3-T4 tumors and only 58% had N0 stage.

Conclusion: During this 5-year period there has been an increase in the use of CU and a decrease in the use of IC in patients receiving radical cystectomy. Furthermore, we recorded an increase in the age, the TNM status and the comorbidities of the patients that underwent surgery, as well as a bigger load of surgical cases resulting in a decreasing available surgical time.

UP-070

Fibroblasts Regulate Bladder Cancer Invasion and Metabolic Phenotypes Through Autophagy

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Introduction and Objective: Recently, cancer-associated fibroblasts (CAFs) and autophagy have been demonstrated to play an important role in the development of tumors, including bladder cancer (BCa). However, the mechanisms through which they do so remain largely unclear.

Materials and Methods: Here, we mimicked the tumor microenvironment to explore the interaction between CAFs and BCa cells using a co-culture system. Autophagy in CAFs was induced and inhibited by rapamycin and siRNA, respectively. After co-culture with CAFs, proliferation, invasion, and aerobic glycolysis in BCa cells was measured *in vitro*.

Results: Autophagy in CAFs was induced and inhibited by rapamycin and siAtg5, respectively. Enhanced autophagy in CAFs promoted cell proliferation and invasion in BCa cells *in vitro*, whereas there was no significant difference between the autophagy-inhibited group and controls. Lactate concentration was elevated in the rapamycin-treated and siAtg5-treated versus control group. In addition, the levels of MCT1, HK2, GLUT1, and MMP-9 increased in the autophagy-enhanced group.

Conclusion: Our results indicate that fibroblasts regulate BCa invasion and metabolic phenotypes through autophagy, providing us with new alternative treatment approaches for BCa.

UP-071

The Outcome of Transurethral Resection of the Prostate in Patients with Weak Bladder Contractility

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Introduction and Objective: We evaluated the outcome of transurethral resection of the prostate (TUR-P) in men with benign prostatic hyperplasia (BPH) and urodynamically diagnosed weak detrusor contractility.

Materials and Methods: A prospective study of 33 male patients presented to our department in the period from October 2015 to January 2017. All patients had BPH candidate for TUR-P with impaired detrusor contractility by preoperative urodynamic study. We studied the postoperative outcome of these patients after TUR-P regarding international prostate symptoms score (IPSS), maximum flow rate (Qmax), post voiding residual urine (PVR), the patients need for catheter, and urodynamic pressure flow study (PFS) parameters (maximum detrusor contractility, bladder contractility index (BCI), maximum bladder capacity and compliance) in six months follow up.

Results: Of 33 patients, twenty cases presented with urethral catheter because of chronic or refractory retention. The mean catheter duration was 38.87 ± 69.76, the mean prostate size was 57.6 ± 28.6. Twenty patients voided preoperatively during PFS with mean detrusor pressure (Pdet) at Qmax 23.97 ± 25.54 cm-H2O and the mean BCI was 51.04 ± 23.86, while twelve patients didn't void with mean maximum Pdet 21.75 ± 7.34. Multivariate analysis excluded the effect of neurological diseases (diabetes and stroke), prostate size and duration of urethral catheterization. All of patients could voided postoperatively. There was significant improvement in IPSS, Qmax, and detrusor contractility (Pdet at Qmax and BCI) postoperatively in all patients. There was no significant postoperative improvement in maximum bladder capacity (P value 0.59), compliance (P value 0.24) or post voiding residual urine (P value 0.92) and ten patients (30.3%) needed clean intermittent catheterization (CIC) (Table 1).

Conclusion: There were significant improvements in IPSS, detrusor contractility, and urine flow after TUR-P in patients with BPH and weak bladder contractility.

UP-072

Natural History and Factors Affecting Urinary Symptoms in Patients with Multiple Sclerosis: A Prospective Study of 120 Patients

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Introduction and Objective: This study aims to assess the natural history, fate and factors affecting urinary symptoms in patients with multiple sclerosis.

Materials and Methods: A prospective study of 120 patients diagnosed to have multiple sclerosis (MS) presented to the outpatients' clinic between October 2016 and September 2017. We excluded patients with other urological or neurological diseases. Full history, urological and neurological examination, MRI brain and spinal cord with contrast, abdomen-pelvic ultrasound and urodynamic study were done to all patients. We followed up all the patients for at least one year to detect the progression of urinary symptoms by American Urological Association (AUA) symptoms score and urodynamic study.

Results: The study included 120 patients, 38 males (31.7%) with mean age 35.2 ± 10 years. The mean duration of MS was 6.1 ± 4.9 years and the mean number of relapses was 4.1 ± 2.3. The most common presentation was paraparesis (40%) and least common presentation was depression (1.7%). All patients were suffering from urinary symptoms, but cognitive functions were the least to be affected (1.7%). The most common MRI finding was periventricular lesion (85%). Ninety percent of patients suffered from irritative symptoms, and 51.7% suffered from Obstructive symptoms. The most common urodynamic finding was detrusor overactivity (61.7%) and the 2nd common was detrusor sphincter dyssynergia (26.7%) and 10% had normal urodynamic study. All patients received the same neurological treatment protocol and symptomatic treatment for voiding dysfunction. Follow up showed significant improvement of AUA symptoms score and urodynamic criteria in 108 patients (90%). The site of brain lesion was the most significantly affecting factor on the urological symptoms and their improvement as juxtacortical lesion was the most common lesion associated with detrusor overactivity and pericallosal lesion is significantly associated with poor prognosis of urinary symptoms. There was no significant effect of age, duration of the disease, number of relapses, first presentation, or type of MS on urinary symptoms or their progression.

Conclusion: Urinary symptoms are prevalent in patients with multiple sclerosis. Site of the lesion is the most predictor factor for urinary symptoms progression with no effect of age, duration of the disease, number of relapses, first presentation, or type of MS on urinary symptoms progression.

UP.071, Table 1: Postoperative improvement.

Parameters for all cases (n=32) Mean (SD)*	Preoperative	After 6 months	p
Capacity	321.55 (150)	341.45 (147.61)	0.59
Pdet Q max* cmH20	23.97 (25.45)	44.59 (21.12)	0.011*
BCI*	51.04 (23.86)	84.29 (39.91)	0.002*
IPSS*	23.12 (8.76)	15.84 (8.42)	0.001*
Qmax*	5.66 (4.35)	8.83 (6.34)	0.035*
PVR* ml	337.89 (251.61)	257.37 (109.79)	0.092

*SD: standard deviation
*Pdet Q max: Detrusor pressure at maximum flow
*BCI: Bladder contractility index
*IPSS: International prostate symptoms score
*Qmax: Maximum flow
*PVR: Post voiding residual urine

UP-073

Should We Remove Indwelling Catheter on Post-Operative Day 1 After TURP?

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Introduction and Objective: To identify the predictive factors for success trial without catheter (TWOC) and risk factors of failure to void after transurethral resection of prostate (TURP).

Materials and Methods: We retrospectively examined the records of 102 patients who underwent transurethral resection of prostate between January to December 2018. Preoperative characteristics and outcomes were analysed. All patients were placed on continuous bladder irrigation immediately post operatively and indwelling catheter are removed on post-operative day 1 (POD1).

Results: A total of 15 patients (15%) failed to void and 87 patients (85%) voided successfully. The proportion of patients who fail to void after TURP was significantly higher in those with history of acute urinary retention prior to TURP ((80% vs 49%, p=0.028) and presence of indwelling catheter (73% vs 37%, p = 0.008). Seventy nine percent of patients (69 of 87) who had successful TWOC had pre-operative alpha blockers compared to 47% (7 of15) were associated with higher success rate of TWOC; (p= 0.007). Significant risk factors in patients who fail to void when compared to those who has a successful TWOC were longer operative time (94 vs 79 minutes, p=0.034) and larger resection weight (36 vs 25grams, p =0.011). Interestingly, prostate volume is not a significant risk factor despite a larger size in the fail to void group (93 vs 76 grams, p = 0.118). History of diabetes mellitus, chronic kidney disease and cerebrovascular accident were not associated with success of trial without catheter (TWOC). Uroflowmetry performed showed that initial maximum flow rate (7.3 vs 7.2mls/second, p=0.939) and residual urine (130 vs 129mls, p = 0.974) in both groups were similar. Failure of TWOC was also not related to age (74 vs 71 years old, p= 0.162) or prostate histologic findings. Mean length of stay was significantly shorter in patients who had successful TWOC when compared to those who failed to void (1.2 vs 4.9 days, p = 0.000).

Conclusion: Trial without catheter on post-operative day 1 is feasible after a TURP procedure. History of acute urinary retention, presence of indwelling catheter, resection time and weight of resected

specimen should be considered when planning for discharge on POD 1. With shorter hospital stays, TWOC on POD 1 could provide a method to reduce healthcare expenditures.

UP-074

Real World Study of the Prostatic Urethral Lift

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Introduction and Objective: Like many BPH technologies when they are first introduced, the prostatic urethral lift (PUL) has been well-studied in controlled trials with excellent results demonstrating rapid, significant, and lasting improvement in symptoms and quality of life. The next step is to determine how these results compare with those in the real world. To this end, a retrospective study within a large set of commercial PUL cases was conducted.

Materials and Methods: A retrospective analysis of 1,413 consecutive PUL patients in North America and Australia was performed. Baseline demographics and symptom outcomes of real-world registry (RWR) subjects were compared to subjects in the L.I.F.T. study. IPSS, QoL and Qmax were evaluated at 1, 3, 6, 12, and 24 months post-procedure for all non-urinary retention subjects (Group A), and retention subjects (Group B). Within Group A, outcomes were analyzed using paired t-tests and 95% mean confidence intervals for the following parameters: IPSS baseline ≥ 13, age, prostate size, site of service, prostate cancer treatment, and diabetic status. Surgical interventions, rates of adverse events and catheterization were analyzed.

Results: Compared to those in the L.I.F.T. study, RWR subjects were older, had lower baseline IPSS and QoL and higher Qmax. Following PUL, mean IPSS for Group A improved significantly from baseline by ≥ 8.1 points throughout follow up and 84% of subjects required no catheter. No significant differences were observed between Group A and B absolute symptom scores. Within Group A, subjects with an IPSS baseline ≥ 13 behaved similarly to L.I.F.T. Age, prostate volume, site of service, prior cancer treatment and diabetic status did not significantly affect PUL effectiveness outcomes. Previous prostate cancer treatment did not elevate adverse events of high concern. Of all sites of service, the office had the lowest incidence of side-effects and catheterization.

Conclusion: This is the first and largest study to assess PUL effectiveness in the real-world setting. PUL performs well in the real-world in terms of symptom relief, morbidity and patient experience for all examined patient cohorts, and confirms pivotal clinical study results.

UP-075

Change of Voiding Symptom and Urodynamic Parameters After Holmium Laser Enucleation of Prostate in Patients with Benign Prostatic Hyperplasia: A Prospective Study

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Introduction and Objective: To report our initial experience and analyze the change of voiding symptom and urodynamic parameters following holmium laser enucleation of the prostate (HoLEP) in patients with benign prostatic hyperplasia.

Materials and Methods: We evaluated 45 patients with benign prostatic hyperplasia who underwent HoLEP between April 2016 and March 2018. Among them, medical records and Urodynamic study of 34 patients (mean age of 69.3 years) were retrospectively reviewed. We analyzed the results of International Prostate Symptom Score (IPSS), uroflowmetry and urodynamic study (UDS) before and after the surgery. Follow-up examinations and UDS were performed at 6 months after the surgery.

Results: The preoperative serum PSA level was 7.11 (range, 1.03-25.25) ng/mL, and prostate volume was 77.9 (range, 35.2-112.2) mL. Postoperatively, patients showed significant improvement in the IPSS (total score from 27.1 to 5.6, $P < 0.001$) and maximum urethral closing pressure ($p < 0.001$) have improved significantly after operation. The patients with detrusor overactivity in UDS decreased significantly from 47.1% to 8.8% ($p < 0.001$).

Conclusion: Patients who underwent HoLEP showed improved voiding symptoms and UDS parameters. In addition, UDS findings of decrease in patients with detrusor overactivity and increased maximum urethral closing pressure after HoLEP might indicate some role on the improvement of storage symptoms and positive effect on the degree of incontinence.

UP-076

Correlation Between Nitric Oxide and Urodynamics in Men with Bladder Outlet Obstruction

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Introduction and Objective: Nitric oxide system in the urothelium is one of the factors affecting bladder function. However, differences in the expressions of nitric oxide synthase (NOS) isoforms in the urothelium depending bladder function have not yet been clarified. We investigated the correlation between nitric oxide and urodynamic in men with bladder outlet obstruction (BOO) using analysis of NOS in the urothelium.

Materials and Methods: We prospectively enrolled 25 men who planned to undergo surgical treatment for benign prostatic hyperplasia and identified as BOO in the preoperative urodynamic study. Bladder mucosal specimens were collected during surgical prostate resection. Expressions of endothelial nitric oxide synthase (eNOS), inducible nitric oxide synthase (iNOS) and neuronal nitric oxide synthase (nNOS) in the urothelium were analyzed using immunofluorescence staining and enzyme-linked immunosorbent assay. The correlation of urodynamic parameters with expressions of eNOS, iNOS, and nNOS in all patients was assessed. We also compared the expressions of eNOS, iNOS, and nNOS between BOO with detrusor underactivity (DU) group and BOO without DU group.

Results: In all patients the level of eNOS positively correlated with maximal flow rate (r= 0.499, p=

UP.075, Table 2. Change in subjective and objective variables.

Variables	Preoperative	Postoperative 6 mo	p-value
IPSS			
Voiding	16.7 ± 4.3	2.1 ± 1.9	<0.001
Storage	10.5 ± 3.4	3.0 ± 1.5	<0.001
Total	27.1 ± 5.7	5.6 ± 2.7	<0.001
QoL	3.9 ± 0.8	1.2 ± 0.6	<0.001
Uroflowmetry			
Qmax (mL/s)	6.5 ± 5.3	26.3 ± 10.2	<0.001
PVR (mL)	272.1 ± 221.9	38.0 ± 60.9	0.009
Urodynamic study			
MCC	310.6 ± 179.6	400.3 ± 75.5	0.059
Compliance	15.1 ± 13.6	18.7 ± 11.5	0.530
Detrusor overactivity			<0.001
Absent (%)	18 (52.9)	31 (91.2)	
Present (%)	16 (47.1)	3 (8.8)	
BOOI	48.4 ± 17.8	11.9 ± 8.8	<0.001
BCI	73.0 ± 31.1	85.2 ± 63.4	0.457
MUCP	42.3 ± 19.4	77.4 ± 32.7	<0.001

IPSS: International Prostate Symptom Score, QoL: Quality of life, PVR: Postvoid residual urine, MCC: Maxium cystometric capacity, BOOI: Bladder outlet obstruction index, BCI: Bladdere contractility index, MUCP: Maximu urethral closing pressure

0.021) and with maximum bladder capacity (r= 0.548, p= 0.006). The level of iNOS positively correlated with maximum bladder capacity (r= 0.483, p= 0.017). In addition, the level of nNOS positively correlated with bladder contractility index (r= 0.709, p= 0.022) and with detrusor pressure at maximal flow (r= 0.626, p= 0.048) in all patients. The level of eNOS, iNOS, and nNOS did not significantly differ between BOO with DU group and BOO without DU group.

Conclusion: This study suggests that NO was correlated with bladder function in men with BOO. In particular, nNOS may reflect the change in detrusor function.

UP-077

The Effect of Operator Experience on HoLEP Performance Beyond the Initial Learning Curve

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Introduction and Objective: The initial learning curve for Holmium Laser Enucleation of Prostate is reported at an average of 50 cases. However, there is a paucity of data on learning beyond this phase. Our aim is to report the effect of operator experience beyond 50 cases.

Materials and Methods: A single centre UK surgeon series comprising consecutive HoLEPs from May 2012 to August 2017 was analysed. Patients were excluded if they had a previous TURP or limited resection. Primary outcomes were Enucleation Efficiency (EE) (tissue weight/enucleation time) and Laser to Prostate Ratio (L/PR) (laser energy/enucleation weight). Secondary outcomes were PSA analysis (except if prostate cancer diagnosed) and length of hospital stay.

UP.077, Table 1. Baseline demographic and clinical characteristics

	Mean (SD):
Age (years)	70.41 ± 8.43
LOS (days)	1.25 ± 1.6
Preoperative prostate volume (ml)	85.26 ± 54.54
Weight of resected tissue (g)	64.35 ± 54.18
ASA score:	
1	14.5 %
2	73.0 %
3	12.5 %
IDC:	
Yes	58.9 %
No	41.1 %
Indication for surgery:	
AUR	31.1 %
CUR	41.9 %
LUTS	27.0 %
Histology:	
Benign	82.6 %
Cancer	17.4 %

SD: standard deviation, LOS: length of stay, ASA: American society of anesthesiologists, AUR: acute urinary retention, CUR: chronic urinary retention, LUTS: lower urinary tract symptoms, IDC: indwelling catheter

Results: A total of 323 cases were identified. The first 50 cases were excluded to account for the initial learning curve and a further 7 for meeting the exclusion criteria leaving a total of 276 cases. These cases were divided into 5 cohorts (Group A: 1-50, Group B:51-100, Group C: 101-150, Group D:151-200 and Group E 201-276). Mean patient age was 70.41 (± 8.43). As the series progressed there was a statistically significant improvement in both median EE: 0.95g/min Group A – 1.45g/min Group D (p=0.001), and median L/PR: 3.79kJ/g Group A – 1.87kJ/g Group D (p=0.016). There was improvement in Efficiency of 0.125g/min per 50 cases and L/P-ratio of 0.48kJ/g per 50 cases. There was no plateauing in either EE or L/P ratio in the last cohort. No statistical difference was found in secondary outcomes.

Conclusion: Our study suggests that performance continues to improve beyond 50 cases and did not plateau. The reported learning curve may be an underestimate which may have implications for performance, mentoring programs and theatre utilisation.

UP-078

The Relationship Between Status of Glucose Homeostasis and Prostate Morphology in Aging Chinese Male with Benign Prostatic Hyperplasia: A Cross-Sectional Study

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Introduction and Objective: Benign prostatic hyperplasia (BPH) is a common disease in aging male. Metabolic disorder has recently been recognized as an important factor in prostate progression. However, the role of hyperglycemia in prostate growth is unclear. The aim of the present study was to assess the relationship between glycaemic status and prostate growth during aging.

Materials and Methods: The medical records of BPH patients who referred to surgery in our department were reviewed. Prostate morphology data were measured by transrectal ultrasound. According to the American Diabetes Association (ADA) criteria, the patients were categorised as normoglycemic, pre-diabetic, or diabetic. Glycaemic status and other variables were considered as being independent variables in an effort to evaluate any potential correlations using non-adjusted and multivariate-adjusted regression models.

Results: A total of 659 individuals were included in our study. The prevalence of pre-diabetes and diabetes in this population were 37.2% (245/659) and 23.8% (157/659) respectively. Different from men with normoglycemic, the growth rate of prostate in men with pre-diabetes and diabetes was significantly faster before the age of 70 than after the age of 70 (P <0.05). Further multiple logistic regression analysis revealed that abnormal glucose homeostasis was positively correlated with the prostate size in the non-adjusted or adjusted models. Before the age of 70 years old, compared with men of normal glucose, the adjusted odds ratio (OR) for total prostate and transitional zone enlargement for men with pre-diabetes was 2.24 (95%CI, 1.29-3.89) and 3.11 (95%CI, 1.76-5.47) respectively; for men with diabetes was 4.67 (95%CI, 2.24-9.74) and 6.41 (95%CI, 2.92-14.07) respectively. However, there was no significant difference when the age was greater than 70 years old.

Conclusion: In normoglycemic state BPH patients, the prostate growth rate is relatively stable, and the prostate volume reaches a higher level after the age of 70. However, the annual prostate volume changes are faster in BPH population combined with prediabetes and diabetes, and the prostate grows to a larger volume before the age of 70, after which prostate growth is significantly slower.

UP-079

TRUS-Guided Prostatic Biopsy: Role of an Additional Biopsy for Bacterial Culture on Treatment of Associated Chronic Prostatitis and Improvement in International Prostate Symptom Score (IPSS)

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Introduction and Objective: To investigate the impact of adding one prostatic biopsy for tissue culture, during TRUS-guided biopsy, on subsequent treatment and improvement of IPSS score.

Materials and Methods: We prospectively reviewed all cases of TRUS-guided prostatic biopsy from February to November 2018 at the Urology Department, PSMMC. The indications for biopsy were either high PSA or suspicious DRE. All patients have negative urine culture, received pre-biopsy (ciprofloxacin 500 mg twice a day started one day before biopsy then continued for five days after and at night rectal enema before biopsy. Evaluation consisted of prostate tissue culture, pre-biopsy LUTS (IPSS) and effectiveness of antibiotic treatment for those with positive tissue culture.

Results: In 25 of the 50 patients studied, a biopsy for tissue culture was taken during the procedure. The tissue culture was positive in 14 patients (28%). Out of these 14, two patients with prostate cancer were excluded. In the remaining 12, ten had LUTS with IPSS score ranging from 18 – 32, while two were not complaining of LUTS. All patients with positive culture were treated with 4-week course of antibiotics according to the bacterial sensitivity. In nine of the ten patients with LUTS, the IPSS score improved to (5-12), while one patient showed no improvement. The latter was found to have a urethral stricture and treated by VIU. Histopathological assessment of the biopsy in these patients showed evidence of BPH with or without focal prostatitis.

Conclusion: Chronic bacterial prostatitis is sometimes associated with BPH, and then it causes aggravation of lower urinary tract symptoms and IPSS score. Treatment of bacterial colonization with the

appropriate antibiotic according to culture and sensitivity made on tissue biopsy obtained at the time of TRUS, is highly associated with improvement in IPSS.

UP-080

A Prospective Randomized Study to Compare Outcomes Between Alpha-Blockers and Tadalafil 5-mg on IPSS and Prostatic Blood Flow in Men with LUTS due to Benign Prostatic Hyperplasia

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Introduction and Objective: To compare the effect of alpha-blocker versus tadalafil 5-mg on International Prostate Symptom Score (IPSS) and prostatic blood flow in men with lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH-LUTS).

Materials and Methods: After institutional ethics approval and informed consent, men > 40-years of age with bothersome BPH-LUTS for > 3-months were randomized and followed for 8-weeks. Men with urinary tract infections, neurogenic bladder, carcinoma prostate, stricture urethra and renal failure were excluded. Men in Group-1 received alpha-blockers while Group-2 received 5-mg tadalafil. Demographic data and clinical data including IPSS and resistive index (RI) were assessed at baseline and after 8-weeks.

Results: 183 men with BPH-LUTS were randomized in two groups: 86 in Group-1 and 97 in Group-2. 151-men completed the study with 76 in Group-1 while 75 in Group-2. Demographic and baseline characteristics were comparable between groups (mean ages 63.7 versus 64.1-years, p<0.31; BMI 22.5 versus 23.6, p=0.23; mean prostate volume 44.9 versus 48.1-mL, p=0.21; IPSS 16.3 versus 15.95, p=0.60). Baseline RI was different between the two groups (0.68 versus 0.72, p<0.001). In Group-1, mean IPSS improved by 3.62 (p<0.001), with significant improvement in both voiding (2.34, p<0.001) and storage sub-scores (1.28, p<0.001). However, improvement in voiding symptoms was more than storage symptoms. In Group-2, mean IPSS improved by 1.89 (p<0.001) with significant improvement in storage sub-scores (1.68, p<0.001), but, not significant for voiding sub-score (0.21, p=0.3). On intergroup comparison, mean change in IPSS-score was significantly more in Group-1 (3.62 versus 1.89, p<0.001). Mean change in RI in Group-1 was 0.0002±0.02, (p=0.90), whereas, it was 0.003 ± 0.022, (p=<0.18) in Group-2. There was no significant change in RI in both groups from baseline values.

Conclusion: Both alpha-blockers and tadalafil 5-mg are effective in BPH-LUTS. RI measurement can be potential means for objective assessment of therapeutic effect and needs further evaluation.

UP-081

Association Between Coronary Artery Calcium Score and Prostate Volume

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Introduction and Objective: Several studies suggested an association between prostatic disease and the presence of coronary artery disease (CAD). Atherosclerosis of the coronary artery is related to the obstructive CAD. The coronary artery calcium score test is a non-invasive and useful indicator of atherosclerosis. This study aimed to evaluate the correlation between coronary artery calcium score (CACS) and prostate volume in health check-up participants.

Materials and Methods: This study enrolled 125 men who underwent transrectal ultrasonography (TRUS) and coronary computed tomography angiography (CCTA) in the health promotion center at a university hospital between May 2015 and August 2017. Mean subjects age was 53.03 ± 8.61 years (range 34 to 75). We excluded patients who diagnosed prostate cancer or taken the prostate operation and known history of cardiovascular disease (myocardial infarction, angina, or stroke). We analyzed correlations between CACS and prostate volume.

Results: CACS were 195.93 ± 475.09 and 75.61 ± 172.22 in subjects with prostate volumes of ≥ 30 mL or not respectively (p = 0.044). CACS were positively correlated with total prostate volume, central volume and transitional zone index (TZI) (r = 0.201, p = 0.028 and r = 0.281, p = 0.002, r= 0.180, p = 0.050, respectively). After adjusting for covariates (age, body mass index, smoking, alcohol, exercise international prostate symptom score, prostate specific antigen), correlation of CACS with central volume still existed significantly (r = 0.291, p = 0.018).

Conclusion: There was positive correlation of CACS with prostate volume, especially with central volume. Benign prostate hyperplasia (BPH) seems to be a significant factor of atherosclerosis.

UP-082

Smoking Exacerbates Lower Urinary Tract Symptoms and Chronic Prostatic Inflammation in Patients with Benign Prostatic Hyperplasia

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Introduction and Objective: Smoking, a major public health problem worldwide, causes a variety of illnesses and exacerbates lower urinary tract symptoms (LUTS). Herein we assessed the impact of smoking on LUTS and the effectiveness of smoking cessation on LUTS in patients with benign prostatic hyperplasia (BPH).

Materials and Methods: We retrospectively analyzed the cases of 118 BPH patients who underwent transurethral prostatic surgery. Their smoking history was confirmed. We assessed the relationship between smoking history and clinical parameters: International Prostatic Symptom Score (IPSS), uroflowmetry, pressure-flow study results and the magnitude of prostatic inflammation. We evaluated the relationships between the clinical parameters and the patients' smoking duration, smoking-cessation duration and Brinkman index. We used prostatic tissue obtained from the patients' surgery to quantify the magnitude of prostatic inflammation histologically, based on the abundance ratio of high endothelial venule (HEV)-like vessels. HEV-like vessels can be detected by immunostaining with MECA-79. At the same time, we detected all vessels in the tissue by immunostaining with CD34. We then counted the number of MECA-79+ vessels and that of CD34+ vessels and calculated the MECA-79+/CD34+ vessel ratio. We previously demonstrated that the MECA-79+/CD34+ vessel ratio is a reliable marker of chronic inflammation.

Results: The IPSS straining scores of the non-smokers were significantly lower than those of the smokers (1.710 vs. 2.600, p= 0.029). In the pressure-flow study, there were negative correlations between smoking duration and strong desire to void (SDV), and between urgency and bladder volume at the initial detrusor overactivity (DO) (SDV: correlation coefficient -0.314, p= 0.013; urgency: correlation coefficient -0.349, p= 0.008; bladder volume at initial DO: correlation coefficient -0.417, p= 0.021). We next focused on the former smokers and examined the relationship between smoking cessation and clinical parameters. The smoking-cessation duration was significantly negatively correlated with the magnitude of chronic prostatic inflammation (correlation coefficient -0.253, p= 0.027). In the pressure-flow study, the smoking-cessation duration was positively correlated with urgency and MCC (urgency: correlation coefficient 0.286, p= 0.030, MCC: correlation coefficient 0.241, p= 0.050).

Conclusion: We demonstrate that smoking exacerbated LUTS and chronic prostatic inflammation and observed the effectiveness of smoking cessation on LUTS.

UP-083

Efficacy of Add on Therapy After Tamsulosin Monotherapy in Patients with Benign Prostatic Hyperplasia

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Introduction and Objective: To evaluate efficacy of add on therapy after tamsulosin monotherapy in patients with Benign Prostatic Hyperplasia (BPH) with moderate to severe IPSS.

Materials and Methods: From May 2015 to May 2017, 89 patients were analyzed, retrospectively. The patients were classified into 3 groups according to the combination of medication. Baseline characteristics (e.g. age, body weight, height, and underlying medical disease) were collected. International prostatic symptom score (IPSS), PSA, prostate volume (PV), peak urinary flow rate (Qmax), voided volume (VV) and post voided volume (PVR) before and after treatment were evaluated.

Results: We classified and analyzed the patients into 3 groups depending on the medication. And there were no significant differences between all parameters among the groups. VV at 3 months after treatment in each group was 170.54 ± 125.83, 121.55 ± 46.19 and 274.63 ± 132.30 (P= 0.019). Differences of voiding symptom score and difference of PVR among the groups before after treatment was 5.00 ± 5.42, 1.92 ± 3.92 and 0.11 ± 5.11 and 8.37 ± 34.32, 0.78 ± 14.86, -33.63 ± 28.58 (P= 0.037, P= 0.007).

Conclusion: We think tamsulosin monotherapy will be feasible as a first line therapy for the patients with

benign prostatic hyperplasia who have struggled with moderate to severe lower urinary tract symptoms.

UP-084

Clinical Outcomes of Prostatic Urethral Lift for Benign Prostatic Hyperplasia: An Asian Population Study

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Introduction and Objective: The aim of this study was to assess the clinical outcomes of prostatic urethral lift in Korean patients with bothersome lower urinary tract system due to benign prostatic hyperplasia (BPH).

Materials and Methods: A total of 32 men with symptomatic BPH were consecutively treated at a tertiary care center in Korea. To be included in the present analysis, patients had to meet the following criteria: age ≥ 50; International Prostatic Symptom Score (IPSS) > 12; and prostate volume between 30 mL and 80 mL. Patients were evaluated up to a median follow-up of 1-year post procedure. The primary outcomes included symptom relief, improvement of quality of life (QOL), and preservation of sexual function.

Results: All procedures were completed successfully with a mean of 2.2 implants without serious complication. The number of patients diagnosed with diabetes mellitus, hypertension, and ischemic heart disease were 16 (50%), 24 (75%), and 9 (28.1%), respectively. Patients experienced symptom relief by 1 week that was sustained to 12 months. Mean IPSS, QOL, and maximum flow rate (Qmax) improved 43%, 70%, and 25% by 1 week, and 41%, 60%, and 32% by 12 months (p<0.001), respectively (Table 1). There were no occurrences of early urge incontinence, retrograde ejaculation, or erectile dysfunction. Adverse events were mild and transient.

Conclusion: Prostatic urethral lift is a safe and effective treatment for BPH in Asian population. This treatment is minimally invasive, can be done under local anesthesia, and may be an appropriate method for fragile patients.

UP-085

Complications of Diode Laser Enucleation of Prostate

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Introduction and Objective: We reviewed the complications of diode laser enucleation of prostate (DIOLEP) in a single surgeon series.

Materials and Methods: Between June 2009 and December 2018, a total of 470 consecutive patients of BPH underwent Diode laser enucleation of Prostate. Mean patient age was 68 years, and the average prostate size on ultrasound was 60 g (27 to 215 g). The mean serum total PSA was 4.61 ng/mL. A database was kept prospectively for all patients. Surgery was performed under spinal anaesthesia in all patients except for those with prostate size over 90 g where combined spinal- epidural was used, anticipating a longer duration of surgery. The Storz 26 Fr continuous

UP.083, Table 1. Difference between groups in mean change at 3 months.

	Group A (n=52)	Group B (n=15)	Group C (n=17)	P-value
DQoL	1.41 ± 2.06	1.17 ± 1.75	0.00 ± 1.32	0.165
DIPSSv	5.00 ± 5.42*‡	1.92 ± 3.92	0.11 ± 5.11‡*	0.038
DIPSSs	1.30 ± 5.08	-2.00 ± 2.45	0.33 ± 6.66	0.364
DIPSS	7.82 ± 8.68	2.92 ± 8.40	1.44 ± 6.44	0.093
DVV	35.89 ± 184.84	-21.89 ± 126.68	149.50 ± 131.16	0.100
DPVR	8.37 ± 34.32*‡	0.78 ± 14.86	-33.63 ± 28.58‡*	0.007
DQmax	3.57 ± 8.20	2.07 ± 7.43	4.29 ± 4.69	0.813

Values are presented as mean ± standard deviation.

D, Changes in variables before and after treatment; QoL, Quality of Life; IPSS, International Prostate Symptom Score; IPSSv, Voiding symptom score; IPSSs, Storage symptom score; VV, Voided Volume; PVR, Post Voided Residual volume; Qmax, peak flow rate

* p<0.05 compared with Tamsulosin+solifenacin

† p<0.05 compared with Tamsulosin+mirabegron

‡ p<0.05 compared with Tamsulosin

UP.084, Table 1. Clinical outcomes after prostatic urethral lift.

	1 week	1 Month	6 months	12 months
IPSS				
Baseline	19.3 ± 2.4	19.3 ± 2.4	19.3 ± 2.4	19.3 ± 2.4
Follow-up	10.9 ± 1.9	10.8 ± 1.9	10.9 ± 1.8	11.2 ± 1.7
Change	-8.4	-8.4	-8.4	-8
% change	-43	-43	-43	-41
(95% CI)	(-47 to -40)	(-47 to -39)	(-47 to – 39)	(-45 to -37)
p value	<0.001	<0.001	<0.001	<0.001
QOL				
Baseline	4.4 ± 0.6	4.4 ± 0.6	4.4 ± 0.6	4.4 ± 0.6
Follow-up	1.3 ± 0.5	1.4 ± 0.6	1.7 ± 0.6	1.7 ± 0.6
Change	-3.1	-3	-2.7	-2.7
% change	-70	-69	-60	-60
(95% CI)	(-74 to -65)	(-73 to -64)	(-65 to -55)	(-65 to -55)
p value	<0.001	<0.001	<0.001	<0.001
IIEF5				
Baseline	18.8 ± 4.7	18.8 ± 4.7	18.8 ± 4.7	18.8 ± 4.7
Follow-up	17.9 ± 4.7	17.3 ± 4.6	17.7 ± 4.3	17.9 ± 4.5
Change	-0.9	-1.5	-1.1	-0.9
% change	-7.1	-6.6	-3.2	-3.5
(95% CI)	(-14 to -0.1)	(-13 to -0.3)	(-12.3 to 5.9)	(-9.9 to 2.9)
p value	0.159	0.019	0.041	0.129
Qmax				
Baseline	12.1 ± 2.4	12.1 ± 2.4	12.1 ± 2.4	12.1 ± 2.4
Follow-up	16 ± 1.3	15.6 ± 1.6	15.1 ± 1.4	15.3 ± 1.4
Change	3.9	3.5	3.1	3.3
% change	25	34	30	32
(95% CI)	(20 to 30)	(24 to 44)	(21 to 40)	(22 to 42)
p value	<0.001	<0.001	<0.001	<0.001

IPSS: International Prostate Symptom Score; CI: Confidence Interval; QOL: Quality of Life; IIEF: International Index of Erectile Function; Qmax: maximum urinary flow rate

irrigation resectoscope was employed, using normal saline as irritant. A two or three lobe technique was used, taking care to safeguard the sphincteric zone. Morcellation was performed using Maurmayer stone punch in smaller prostates, and Storz ™ morcellator in prostates over 60 g. Intraoperative fall of hematocrit, lasing time as well as duration of surgery were recorded in all patients. Complications were recorded in the perioperative period, at 6 weeks post-op and at one year and two-year follow-up.

Results: Mean operative time was 92 min, and average fall of haemoglobin was 0.6 g (0.4 to 1.0), average Lasing time was 46 min (4 to 141 min). Average Postoperative catheterisation time was 60 h. There was no instance of conversion to TURP or any reactionary or secondary haemorrhage; or clot retention. Re-catheterisation was necessary in 43 patients (9%), due to postoperative edema, or obstruction by necrotic tissue, sometimes due to unrecognised detrusor underactivity. 3 patients developed significant extravasation requiring extraperitoneal drainage. 65 patients (14%) had significant urge incontinence, requiring antimuscarinic medication. The incidence of stricture was 5.7%, and another 3.2% developed bladder neck contracture, these were managed endoscopically. Reoperation for resection of obstructing apical or necrotic tissue was necessary in 3 patients, and urethroplasty required in 2 patients.

Conclusion: Diode laser enucleation has high intraoperative safety with regard to hemorrhagic complications but carries a significant risk of catheterisation and urge incontinence in the short-term follow-up and of stricture and bladder neck fibrosis in the long-term.

UP-086

Efficacy of Mirabegron Addition in Benign Prostatic Hyperplasia with in Persistent Overactive Symptoms: A Prospective Study

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Introduction and Objective: This study was undertaken to investigate the efficacy of mirabegron addition after alpha-adrenergic blockade with respect to storage symptoms and overactive bladder symptom scores (OABSS) in patients with benign prostatic hyperplasia (BPH).

Materials and Methods: Fifty-eight patients that had been taking alpha-adrenergic blockade for more than 8 weeks but had an OABSS (Overactive Bladder Symptom Score) especially Q3 of greater than 3 points, were enrolled. After 1-week washout period, patients were divided into two groups. Group 1 was alpha-adrenergic blockade only (n=18), group 2 was alpha-adrenergic blockade with mirabegron (n=38) for 8 weeks. After 8 weeks treatment period, International Prostate Symptom Score (IPSS), IPSS storage symptom score, OABSS score, OABSS Q3 and Q4, maximal flow rates (Qmax), and post-void residual volumes (PVR) were checked.

Results: Mean patient ages in alpha-adrenergic blockade only group and alpha-adrenergic blockade with mirabegron group were 71.7 ± 7.1 and 69.8 ± 7.0 year old, respectively. Mean prostate volume was 30.5 ± 14.0 cc and 30.3 ± 8.7 cc in each group. Baseline characteristics were not significantly different in 2 groups. In group 1, IPSS decreased from 15.7 to 13.1 (p= 0.298), and in group 2, IPSS decreased from 19.4 to 16.5 (p= 0.024). Mean storage symptom score reduced in group 1 and group 2 from 6.3 to 5.5 (p= 0.584) and from 8.8 to 7.3 (p <0.005), respectively. Mean OABSS score reduced from 8.3 to 7.2 (p= 0.173) and from 8.8 to 7.3, respectively (p <0.005). Mean OABSS Q3 score reduced from 3.6 to 2.9 (p= 0.073) and from 3.5 to 2.7 (p= 0.002), respectively. Mean OABSS Q4 score reduced from 2.4 to 2.0 (p= 0.306) and from 2.7 to 2.0 (p= 0.016), respectively. Mean Qmax and PVR was not significantly changed in 2 groups.

Conclusion: IPSS total score, storage symptom score, OABSS, Q3 and Q4 and QoL were improved in group 2. We recommend alpha-adrenergic blockade with mirabegron in persist urgency symptom.

UP-087

International Prostate Symptom Score Voiding-to-Storage Subscore Ratio Can Predict Postoperative Outcomes of Transurethral Resection of the Prostate

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Introduction and Objective: This study has been conducted to determine whether the International Prostate Symptom Score (IPSS) voiding-to-storage subscore ratio (IPSS-V/S) before transurethral resection of the prostate (TURP) can help to predict postoperative outcomes.

Materials and Methods: We reviewed medical records of 152 patients who underwent TURP by a single urologist from July 2008 to June 2017. The TURP of men who had previous prostate surgery or procedure, palliative TURP of prostate cancer patients, and simultaneous TURP with transurethral resection of bladder tumor were excluded. The IPSS, quality-of-life score (QoL), uroflowmetry, and post-void residual volume before TURP were compared with those of 12–16 weeks after surgery. The value obtained by dividing the IPSS voiding subscore (IPSS-V) by the storage subscore (IPSS-S) was defined as IPSS-V/S. Surgical outcomes according to this ratio were analyzed.

Results: The preoperative IPSS-V/S <1.5 group had worse ΔIPSS-S (postoperative IPSS-S – preoperative IPSS-S) compared with IPSS-V/S ≥ 1.5 group (P=0.005), and the preoperative IPSS-V/S ≥ 2.0 group showed worse ΔIPSS-V compared with IPSS-V/S <2.0 group (P=0.035). The group with preoperative 1.5? IPSS-V/S <2.0 demonstrated significantly better ΔIPSS-T and ΔIPSS-S (P=0.031 and 0.023, respectively), and had better ΔIPSS-V and ΔQoL with a marginal statistical difference (P=0.090 and 0.084, respectively), as compared with the group with preoperative IPSS-V/S <1.5 or ≥ 2.0. In multivariable analyses for TURP results, preoperative IPSS-V/S (1.5–2.0 vs. <1.5 or ≥ 2.0) was the only predictor of ΔIPSS-T (P=0.026).

Conclusion: TURP helps improve the patient's symptom scores, especially when the preoperative IPSS-V/S is 1.5–2.0. The measurement of IPSS-V/S is easy and simple, suggesting that it can be a good indicator of postoperative outcomes.

UP.087, Table 1. Postoperative outcomes according to preoperative IPSS-V/S.

	1.5 ≤ IPSS-V/S < 2.0 (n=90)		IPSS-V/S < 1.5 or ≥ 2.0 (n=34)		*P*
	Median	(IQR)	Median	(IQR)	
ΔIPSS-T	-9.0	(-17.0–-2.0)	-3.0	(-11.0–0.0)	0.031
ΔIPSS-V	-7.0	(-11.0–-2.0)	-3.0	(-9.0–+1.0)	0.090
ΔIPSS-S	-4.0	(-6.0–-1.0)	0.0	(-4.0–+2.0)	0.023
ΔQoL	-2.0	(-3.0–-1.0)	-1.0	(-2.0–0.0)	0.084
ΔQmax	+9.5	(+2.0–+15.9)	+6.0	(-0.1–+11.4)	0.154
ΔPVR	-20.0	(-88.0–+17.5)	-20.0	(-52.5–+10.5)	0.656

ΔX = (postoperative X – preoperative X)

UP.087, Table 2. Multivariable analyses† for prediction of ΔIPSS-T.

Preoperative factors	B ± S.E.	t	*P*
IPSS-T	-0.17 ± 0.25	-0.69	0.501
IPSS-V	-0.03 ± 0.36	-0.08	0.940
IPSS-S	-0.73 ± 0.49	-1.50	0.156
QoL	2.64 ± 1.43	1.85	0.085
Qmax	0.61 ± 0.66	0.93	0.382
Qavg	0.74 ± 0.91	0.81	0.441
PVR	-0.00 ± 0.01	-0.33	0.752
IPSS-V/S‡	**-8.28 ± 3.33**	**-2.49**	**0.026**

† Adjusting for age, serum PSA level (log-transformed), and total prostate volume

‡ IPSS-V/S is a categorical variable (1.5–2.0 vs. <1.5 or ≥2.0).

UP-088

Pre-Operative Predictors of Outcome Following Male Sling Implant for Post Prostatectomy Incontinence

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Introduction and Objective: The male sling is an alternative to the artificial urinary sphincter, currently

UP.088, Table 1.

	Success (0-1 pads) (mean and standard deviation)	Failure (>1pad) (mean and standard deviation)	*P* value
Number of patients	73	27	
Pre-operative radiotherapy	9	4	0.747
Number of pads	2.5 (+/-1.3)	3.6 (+/-1.9)	0.003
24h pad weight	171.13 (+/-154.2)	734.4 (+/-173.1)	0.056
Detrusor Overactivity	20	14	0.024
Reduced Compliance	19	10	0.248
Capacity	441.2 (+/-109.8)	360.3 (+/-120.3)	0.005
Retrograde leak point pressure	45.7 (+/-17.3)	39.1 (+/-20.9)	0.229

gold standard, for the treatment of post prostatectomy incontinence (PPI). Variable success rates have been reported for the male sling. The likelihood of success is not well understood and the predictors of outcome poorly documented. We review the pre-operative parameters that might facilitate patient selection.

Materials and Methods: All men with PPI across two supra-regional urology centres had data collected in a prospective database. Data included previous intervention, radiotherapy, 24h pad weights and urodynamic parameters including retrograde leak point pressure.

Results: 100 men were treated with the Advance male sling system between 2012 and 2018. Mean patient age was 67 (range 47 to 88). Mean follow up time was 66 weeks (range 3 weeks to 5.5 years). 73 patients were cured of their urinary incontinence (1 or less pads for reassurance) whilst 27 patients remained significantly wet (more than 1 pad per day). The table shows pre-operative parameters in those who were dry versus those remaining wet. Differences were assessed using paired T-tests, Mann-Whitney U Test and Fisher's Exact Test as appropriate. A $p<0.05$ is considered significant. Male sling was successful in 73% of patients, of which 46% did not use any pads postoperatively. 27% of patients had ongoing residual leakage. The only significant predictors were number of pads, detrusor overactivity and bladder capacity; which were associated with poorer outcomes.

Conclusion: Male sling was a successful treatment in the majority of patients irrespective of pre-operative parameters. The only predictors of significance were number of pads, detrusor overactivity and bladder capacity on preoperative video urodynamics. Patients should be carefully counselled but not be excluded from male sling treatment on pre-operative parameters alone.

UP-089

Nocturia May be a Predictive Factor for Restart of Dutasteride

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Introduction and Objective: It was reported that if dutasteride was discontinued, 60% of patients were restarted within one year and baseline intraprostatic architecture was associated with restart of dutasteride. The aim of this study was to clarify the predictive factors for restart of dutasteride for long follow up.

Materials and Methods: Between September 2010 and December 2016 at a single center, 39 patients in who were treated with dutasteride (0.5mg/d) by the diagnosis of benign prostatic hypertrophy and discontinued dutasteride were included in this retrospective study. In the groups of restarting and discontinuing dutasteride, patient's age, body mass index (BMI), International Prostate Symptom Score (IPSS), QOL score, Overactive Bladder Symptom Score (OABSS), the duration of medication, prostate volume, the reduction rate of prostate volume, post-void residual urine volume (PVR) using transabdominal ultrasound, concomitant medication and comorbidities were evaluated. Although patients were followed for 24 months after cessation, patients were allowed to restart dutasteride during the follow-up period by their desire and judgement of the attending physician. Statistical analysis was carried out to identify clinical covariates significantly between restarting group and discontinuing group.

Results: Overall, 35 patients were analyzed at 24 months and 12 patients (12/35, 34%) restarted dutasteride. The mean nocturnal event before discontinuation of dutasteride (2.8 vs 1.8; p= 0.005) was more in restarting group than discontinuing group. The mean duration of medication before discontinuation of dutasteride (37 vs 25; p= 0.0261) was longer in restarting group than discontinuing group. No significant differences in the patient characteristics were observed between restarting group and discontinuing group in other factors. Multivariate analysis revealed that nocturia and duration of medication before discontinuation of dutasteride were independent predictive factors for restart of dutasteride.

Conclusion: Our study clarified that nocturia and longer medication might prompt restart of dutasteride. Therefore, the possibility of the discontinuation or intermittent medication of dutasteride was suggested in the patients that were recognized nocturnal voiding frequency < 2.

UP-090

Prospective Multicenter Open Label Trial Investigating a Neutraceutical Complex Novex® in LUTS/BPH

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Introduction and Objective: The aim was to assess the efficacy of "Novex®" (a neutraceutical complex made of Pumpkin Seed Extract 550mg, Soy Germ Isoflavonoids 50 mg and Cranberry 50mg) in the management of male patients suffering from mild to moderate LUTS/BPH.

Materials and Methods: This is a prospective multicenter open-label trial with a duration of 6 months. Male patients aged between 40 and 80 years, who had had mild to moderate LUTS for > 6 months at screening, with an International Prostate Symptom Score IPSS <18, with no previous therapy or who are still symptomatic despite alpha-blockers, were recruited. "Novex" was administered orally, daily, for 3 months. Patients were evaluated at 3 visits (baseline, and after 30 and 90 days of treatment) by means of history, clinical examination, IPSS, urological Quality-of-Life (uQoL) index, and International Index on Erectile Function IIEF-5. A longitudinal IPSS, uQoL and IIEF-5 analysis across time was evaluated.

Results: There were 128 patients (61.8 ± 9.9y) included in the study. IPSS score was 15 [Q1:12-Q3:17] in visit 1, 11 [Q1:8-Q3:14] in visit 2, and 9 [Q1:6-Q3:12] in visit 3, with a significant difference ($p<0.001$) between the values of the three visits. Concerning uQoL score: respectively 54.2% of patients in visit 1, 17.9% in visit 2 and 10.9% in visit 3 had a low quality of life, with a significant difference ($p<0.001$) between the values of the three visits. IIEF-5 score was 15 [Q1:12-Q3:18.7] in visit 1, 15 [Q1:12-Q3:18] in visit 2, and 17 [Q1:13-Q3:19] in visit 3, with a significant difference only between visit 1 and visit 3 ($p=0.001$) and between visit 2 and visit 3 ($p=0.004$) (Figure 1).

Conclusion: Using Novex seems to have a positive effect on urological symptoms, quality of life and erectile function in patients with mild to moderate LUTS/BPH symptoms, after one and three months of treatment.

UP-091

The Long-Term Efficiency of Transurethral Bipolar Plasma Enucleation of the Prostate "Through the Looking Glass" of a Clinical Parallel to Open Prostatectomy – An Eight Years' Prospective, Randomized-Controlled Comparison in Large Prostate Cases

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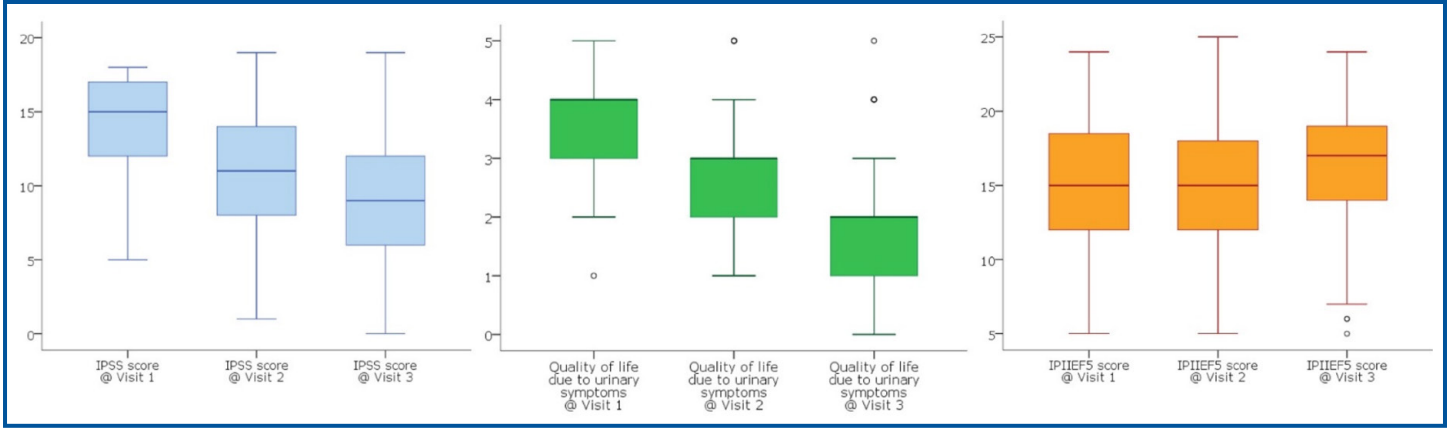
Introduction and Objective: A long-term, prospective, randomized-controlled clinical trial assessed the viability of the transurethral bipolar plasma enucleation of the prostate (BPEP) by comparison to open transvesical prostatectomy (OP) in cases of benign

UP.090, Figure 1.



prostatic obstruction (BPO) due to large size benign prostatic hyperplasia.

Materials and Methods: 140 BPO patients with prostate volume >80 mL, maximum flow rate (Q_{max}) <10 mL/s and International Prostate Symptom Score (IPSS) >19 were equally randomized for BPEP and OP. The BPEP technique was based on the retrograde stepwise prostatic bulk enucleation using bipolar energy followed by the adenoma lobes' morcellation. Patients were evaluated preoperatively and every 6 months after surgery for a period of 8 years by IPSS, Q_{max}, quality of life score (QoL), abdominal ultrasound measuring the post-voiding residual urinary volume (PVR) and postoperative prostate volume as well as PSA level evolution.

Results: The 2 series displayed similar mean preoperative prostate volume (132.6 versus 129.7 mL). The BPEP and OP techniques emphasized equivalent mean operating times (91.4 versus 87.5 minutes) and resected adenoma tissue weights (108.3 vs. 115.4 grams). The postoperative hematuria rate (2.9% versus 12.9%), mean hemoglobin level drop (1.7 versus 3.1 g/dl), catheterization period (1.5 versus 5.8 days) and hospital stay (2.1 versus 6.9 days) were significantly reduced in the BPEP group. Re-catheterization for acute urinary retention was more frequent after OP (8.6% versus 1.4%), while the early irritative symptoms' rates were similar subsequent to BPEP and OP (11.4% versus 7.1%). The calculated mean prostate volume decreases (82.7-84.7% vs. 81.0-83.9%, respectively) and PSA level reductions (90.2-92.5% vs. 89.8-92.6%) were statistically equivalent in the BPEP and OP study arms. During the 8 years' follow-up, no statistically significant differences were determined in terms of mean IPSS, Q_{max}, QoL, PVR and PSA between the 2 series.

Conclusion: Bipolar plasma enucleation was confirmed as a feasible therapeutic approach in large BPO cases based on the improved surgical safety related to the diminished hemorrhagic risks. BPEP patients benefited from a significantly shorter postoperative recovery and fewer complications. BPEP and OP emphasized statistically similar adenoma tissue removal capabilities and long-term functional outcomes as well as symptom scores.

UP-092

Ejaculation Preserving Trans-Urethral Bipolar Prostatectomy: Assessing Procedural Aspects and Comparing Resection Versus Enucleation Approaches

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Introduction and Objective: To assess the feasibility and safety of a novel Ejaculation Preserving Trans-Urethral Bipolar Prostatectomy (ep-TUBP) and compare the resection technique versus the enucleation technique.

Materials and Methods: After obtaining local ethics approval, a total of 100 consecutive patients with Benign Prostatic Obstruction (BPO) and normal sexual activity were enrolled from June 2015 to June 2016. These patients were selectively randomized into two groups; 50 patients in each group. Group (1) underwent ejaculation preserving transurethral bipolar enucleation of prostate (ep-TUBEP) and group (2) underwent ejaculation preserving transurethral bipolar resection of prostate (ep-TUBRP). All patients were evaluated pre- and post-operatively using the maximum flow rate (Q-max), post-void residual urine (PVR), international prostate symptom score (IPSS) and the International Index of Erectile Function (IIEF-5) including two additional questions evaluating ejaculation and orgasm. All patients were followed-up at 1, 3, and 6 months.

Results: Overall, 100, 98 and 97 patients were evaluated at 1, 3 and 6 months, respectively. All pre-operative parameters were comparable between the two groups (Table 1). At 1-month follow-up, antegrade ejaculation was preserved in 88 of 100 (88%) (45 patients in group (1) and 43 patients in group (2)). In addition, there was significant improvements in the Q-max (from 6.54 ± 1.72 mL/sec to 15.38 ± 3.02 mL/sec), and PVR (from 94.4 ± 41.85 mL to 25.04 ± 32.72 mL), and IPSS (from 21.7 ± 6.6 to 11.72 ± 2.39) compared with the preoperative measurements. Moreover, these improvements were maintained at 3- and 6-months follow-up visits (all p-values were <0.001). No serious adverse events were reported.

Conclusion: The ep-TUBP seems safe and effective for preservation of antegrade ejaculation with either the resection or the enucleation technique.

UP-093

Vaporesection of the Prostate with Thulium (Tm:YAG) Laser: The Oyster Technique

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Introduction and Objective: To evaluate clinical and functional parameters of an anatomical technique on Thulium (Tm:YAG) laser transurethral prostatectomy.

Materials and Methods: The study included 122 men diagnosed of benign prostatic Obstruction (BPO) with IPSS score > 15, Q-max < 15 mL/s, prostate volume > 60 mL in absence of prostate cancer. The operation was performed using a 200 W Tm:YAG laser (Revolix 200) and included partial enucleation of the prostatic lobes followed by vapo-resection (Oyster technique). After six weeks, follow up (IPSS, Qmax, and PVR) took place.

Results: The average duration of the operation was 53.62 min (range: 20-85) and the bladder irrigation was stopped on the first postoperative day to all patients. The urethral catheter was removed after a median of 1.55 days (range 1-5). The median duration of hospitalization was 3.03 (range: 1-7) days. Moreover, the median hemoglobin drop was found to be 0.96 g/dL (range: -0.4 to 3.1). Six weeks postoperatively, there was significant improvement in all clinical and functional outcomes (Table 1).

Conclusion: The Oyster technique seems a safe approach for Tm:YAG laser prostatectomy with significant improvement in the clinical and functional outcome parameters and with negligible hemoglobin drop. Randomized controlled trials would further strengthen the above results and confirm the efficacy of this technique.

UP.093, Table 1. Patients' characteristics and operative outcomes (n= 122).

Age (years old)	69.049 (54-84)
Operative time (min)	53.62 (20-85)
Hemoglobin drop (g/dL)	0.96 (-0.4 to 3.1)
IPSS improvement	-14.44 (-6 to -33)
Q-max improvement (mL/sec)	7.11 (-1.7 to 19.4)
Post void residual (mL)	73.52 (0-250)
Catheterization period (days)	1.55 (1-5)
Length of hospital stay (days)	3.03 (1-7)

UP-094

Gait Speed, but Neither Muscle Mass nor Strength, Were Associated with Overactive Bladder in Community-Dwelling Elderly Adults: The Sukagawa Study

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Introduction and Objective: Muscle mass and strength, and physical performance are well-known indicators of age-related vulnerabilities in elderly adults. However, evidence for the associations of these with overactive bladder (OAB) is scarce, especially in healthy subjects. This study aimed to assess the associations of muscle mass, grip strength, and gait speed with OAB in community-dwelling elderly adults.

Materials and Methods: A cross-sectional study involving 350 Japanese community dwellers aged ?75 years was conducted in 2017. Body composition was measured with bioelectrical impedance, and grip strength and gait speed were measured by performance testing. Muscle mass and grip strength were corrected for body mass index (BMI). The primary outcome was the presence of OAB evaluated using the Overactive Bladder Symptom Score. The secondary outcome was the presence of each of four main symptoms of OAB: daytime frequency, nocturia, urgency, and urgency incontinence.

Results: Of 314 participants (mean [SD] age: 80.1 [3.4] years) analyzed, 146 (47%) were men and 88 (28%) had OAB. The mean (SD) muscle mass corrected for BMI, grip strength corrected for BMI, and gait speed were 1.7 (0.3), 1.2 (0.4), and 1.2 (0.2) m/s, respectively. Multivariable logistic regression analysis revealed that slower gait speed was associated with a greater likelihood of having OAB (adjusted OR [aOR] per -1SD 1.47, 95%CI 1.11–1.95) whereas there were no significant associations of either muscle mass or grip strength with OAB (aOR per -1SD 0.75 and 1.03, 95%CI 0.41–1.37 and 0.62–1.72, respectively). Furthermore, slower gait speed was associated with greater likelihoods of having urgency and urgency incontinence (aOR per -1SD 1.35 and 1.40, 95%CI 1.04–1.74 and 1.06–1.84, respectively). On the contrary, no significant associations were observed between gait speed and either daytime frequency or nocturia (aOR per -1SD, 1.01 and 1.08; 95%CI 0.78–1.30 and 0.75–1.55, respectively).

Conclusion: Among community-dwelling elderly aged ≥ 75 years, gait speed was associated with OAB as well as both urgency and urgency incontinence. In contrast, no associations of either muscle mass or grip strength with OAB were observed. Further longitudinal studies are warranted to examine significance of slow gait speed as predictor for incidence of OAB.

UP-095

Impact of Permanent Catheterisation and Medical Therapy in the Perioperative Results of Patients Undergoing a Holmium-Laser Prostatic Enucleation

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Introduction and Objective: Several factors such as medication and permanent catheterisation can influence the results of holmium laser enucleation of the prostate (HoLEP). We aimed to analyse which of those factors have an impact on the perioperative results of a HoLEP procedure.

Material and Methods: Prospective study analysing the 324 HoLEP procedures performed in our centre between December 2015 and December 2017. Patient's characteristics such as age, prostatic volume, permanent catheterisation, preoperative haemoglobin, and PSA levels were recorded. Medication recorded included alfa-blockers, 5-alfa reductase inhibitors (5-ARI), anticoagulants and antiplatelets. Haemogram was performed 24 hours after surgery. A multivariant analysis was performed to determine the impact of each of those factors in the following perioperative outcomes: Surgical time, hospitalization time, catheterisation time, haemoglobin (Hb) loss and complications in the first 30 days after surgery.

Results: Preoperative patient characteristics and medication taken are described in table 1. Mean time of surgery was 59.3 minutes, mean hospitalization time was 35.23 hours and the catheter was maintained after surgery for a mean time of 80.53 hours. Mean Hb after surgery was 13.26 g/dL, with a mean Hb loss after surgery of 1.36 g/dL. The use of alpha blockers alone/with 5-ARI and antiplatelets didn't show any impact on the perioperative outcomes. Patients under anticoagulation therapy had longer hospital stay (56.54 vs 33.39, p= 0.01) and higher complication rates after surgery due to haematuria (23.1% vs 8.7%; p= 0.031). Mean Hb for patients with and without permanent catheter was similar (14.4 vs 14.8 g/dL respectively); but mean postoperative Hb was almost 1 g/dL lower in patients with a permanent catheter (12.7 vs 13.56; p= 0.0278). No difference was observed for the other outcomes studied.

Conclusion: Anticoagulation predisposes to longer hospital stays and higher complication rates. Permanent catheterisation impacts negatively on perioperative blood loss. No differences were seen for BPE medication or antiplatelet therapy.

UP.095, Table 1. Preoperative characteristics.

Median age (range)	71 (65-78)
Prostatic volume	94 (61-114)
PSA	4.5 (1.8-6)
Preoperative Hb	14.6 (13.8-15.6)
Permanent catheterisation	114 (35.2%)
Antiplatelets	57 (17.6%)
Anticoagulation	27 (8.3%)
Alfa-blockers	123 (38%)
Alfa-blocker + 5-ARI	120 (37%)

UP-096

Prostatic Urethral Lift Treatment for Acute Urinary Retention

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Introduction and Objective: Acute urinary retention (AUR) patients nonresponsive to alpha blockade have limited options to restore voiding. The objective was to assess the safety and feasibility of the Prostatic Urethra Lift (PUL) in patients with AUR secondary to benign prostate hyperplasia (BPH).

Materials and Methods: BPH subjects age ≥ 50 with prostate volume ≤ 100 cc and ≥ 1 failed voiding trial without catheter (TWOC) were enrolled. PUL implants were placed to retract the prostatic lobes. Symptom response (International Prostate Symptom Score, IPSS), quality of life (QoL), BPH Impact Index (BPHII), peak flow rate (Qmax), post void residual (PVR), Sexual Health Inventory for Men (SHIM), and Incontinence Severity Index (ISI) were assessed through 6 months. Void trials were performed after 3 days (± 1 day). Results were compared with the L.I.F.T. study.

Results: 52 men catheterized an average of 132.4 days pre-operatively underwent PUL with 4.8 average implants each. 69% stopped alpha blockade pre-procedure and remained medication-free. 58% achieved successful TWOC at 3 days and 79% were catheter-free by 1 month. Mean IPSS (10.6 ± 7.8), QoL (1.6 ± 1.5) and BPHII (2.3 ± 2.8) at 6 weeks were superior to L.I.F.T. results at 6 months ((IPSS (5.9 ± 4.0 vs 11.2 ± 7.3, p= 0.002), QoL (1.2 ± 1.2 vs 2.2 ± 1.6, p= 0.01) and BPHII (0.6 ± 1.5 vs 2.7 ± 2.8, p= 0.002). Qmax (11.8 ± 6.6 mL/s) and PVR (110.8 ± 84.6 mL) were similar to L.I.F.T. at 3 months. Most did not have incontinence at baseline (ISI 1.4 ± 0.9) and 6-month results were stable (ISI 1.3 ± 0.6). SHIM improved slightly (16.0 ± 8.7 baselines vs. 18.7 ± 7.8 at 3 months). 89.5% returned to normal in 7.4 days. 94.7% were "much or very much better" and 84.2% would recommend PUL at 6 months. Most adverse events

were mild-moderate, resolving within two weeks. 3 subjects underwent surgery (2 HoLEP, 1 TURP) and 2 had repeat PUL.

Conclusion: PUL can safely and quickly restore normal voiding and significantly improve LUTS and quality of life in patients with AUR.

UP-097

Male Lower Urinary Tract Symptoms in Correlation with Age, Quality of Life Scores, Parameters of Uroflowmetry and Prostate Size, A Single Institution Study

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Introduction and Objective: The study aims to correlate male lower urinary tract symptoms described using the IPSS which is categorized into mild, moderate and severe, with age, Quality of life scores, objective parameters of Uroflowmetry and prostate size. It hopes to provide local data and reference in handling Filipino male patients with lower urinary tract symptoms.

Materials and Methods: 208 males were included in this study. Uroflowmetry parameters, age, International Prostate Symptom Score, Quality of life scores and Prostate size was gathered. For correlation, distribution of Age, Uroflowmetry parameters and Prostate size was first compared to IPSS. Analysis of variance was used to compare Age of patients, while Kruskall-Wallis test was used to compare the Quality of life, Uroflowmetry parameters, and Prostate size on each IPSS groups. Ordinal logistic regression analysis was used to correlate IPSS to Age, Quality of life, Uroflowmetry parameters, and Prostate size both for multivariate and univariate analysis. Null hypotheses were rejected at 0.05 α-level of significance.

Results: In correlating age with IPSS, it was non-significant, however on profile distribution, it revealed that the age distribution between symptom scores was statistically similar. On Quality of life scores, it showed a directly proportional relationship between IPSS, patients with a worse quality of life score are more likely to have higher IPSS scores. Alternatively, Qmax scores decrease as IPSS severity increases, in correlation with Qmax to IPSS, there was a significant difference, which indicates that patients with higher Qmax scores is likely to have higher IPSS scores. As per voided volume, it decreases as IPSS severity increases, conversely there was no significant correlation documented. Post void residual was significant, meaning patients with higher post void residual scores are more likely to have higher IPSS scores. On Prostate size, there was also no significant correlation.

Conclusion: In conclusion, there were no significant correlations between IPSS and age, voided volume and prostate size. On the other hand, patients with a worse quality of life score and a high post void residual will most likely have a higher IPSS, and patients with a high Qmax, will less likely have an elevated IPSS.

UP.097, Table 1: Profile of 208 patients.

	Frequency / Mean / Media	Percentage / SD / Range
IPSS Scores	10.00	1.00 to 35.00
Mild	81	39.1%
Moderate	93	44.9%
Severe	33	15.9%
Age	66.59	9.11
Quality of life	1.00	0.00 to 6.00
Qmax	13.50	2.60 to 37.80
Voided volume	246.00	15.80 to 792.00
Post void residual	15.00	0.00 to 417.00
Prostate size	33.00	16.00 to 167.00

UP-098

Direct and Indirect Costs Associated with Benign Prostatic Obstruction Treatment in a Tertiary Referral Center in North of Tunisia Analytic Study About 495 Patients

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Introduction and Objective: Although BPH is the most common condition in elderly males, limited cost analysis were reported. The purpose of this study was to analyze and compare direct and indirect costs of BPH treatment.

Materials and Methods: Multi-institutional retrospective review was performed on patients followed for BPH from April 2014 to February 2017. Inclusion criteria were male patients greater than 55 years of age who presented for LUTS due to BPH with no history

UP.097, Table 2: Distribution of profile on IPSS.

	IPSS Scores			*P*-value
	Mild	Moderate	Severe	
Age	65.30 ± 8.69	67.04 ± 9.78	68.52 ± 7.87	0.189
Quality of life	1.00 (0 – 3)	2.00 (0 – 5)	4.00 (2 – 6)	0.000
Qmax	19.60 (7.60 – 37.80)	11.6 (7.5 – 24.7)	6.6 (2.6 – 15.5)	0.000
Voided volume	269.0 (15.8 – 645.0)	246.0 (125 – 792.0)	164.0 (125.0 – 463.0)	0.001
Post void residual	12.0 (0 – 240)	16.0 (0 – 390)	23 (0 – 417)	0.093
Prostate size	31 (16 – 167)	35 (17 – 91)	30 (10 – 62)	0.258

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Prostate size	31 (16 – 167)	35 (17 – 91)	30 (10 – 62)	0.258

UP.097, Table 3: Correlation Analysis.

	Univariate Analysis		Multivariate Analysis	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Age	1.030 (0.976 – 1.087)	0.277		
Quality of life	5.079 (2.875 – 8.971)	0.000	4.953 (2.834 – 8.656)	0.000
Qmax	0.822 (0.736 – 0.918)	0.001	0.815 (0.738 – 0.900)	0.000
Voided volume	1.000 (0.996 – 1.004)	0.909		
Post void residual	1.010 (1.001 – 1.019)	0.026	1.010 (1.001 – 1.019)	0.028
Prostate size	1.000 (0.976 – 1.025)	0.976	1.004 (0.980 – 1.028)	0.760

of prior surgical intervention for BPH. Direct costs were categorized into the following categories: outpatient clinic visit, radiology, laboratory costs, nursing, operating room, operating room staffing, anesthesia supplies, anesthesia staffing, hospital room costs and complications. Additionally, length of stay was evaluated too. Indirect costs were categorized into the following categories: transportation and food costs, absence from work for the patient and eventual companion(s). They were 495 patients with a mean age of 63.4 ± 6.1 years. They were followed for at least 24 months.

Results: More than half of patients remain under pharmacotherapy (alpha1-selective adrenergic receptor antagonists or 5-alpha-reductase inhibitors) with regular follow-up (n= 277) for more than 2 years. Transurethral resection of the prostate (TURP) was initially indicated for 129 patients and secondary after medical treatment failure in 89 patients. Initial investigations costs were 70$ ± 10.6. Direct cost for pharmacotherapy was 480$ ± 16.4. Direct cost for TURP including anesthesia supplies and nursing/staffing was 210.8$ ± 11.3 plus 20 to 80$/day for adding days in case of complication. Post-operative complications were reported: sepsis (n= 11), bleeding (n= 7), urinary retention (n= 4), orchitis (n= 8) and urinary infection (n= 25). The average length of stay for TURP group was 2.1 ± 1.3 days (1-14 days). Pharmacotherapy for BPH (for a period of 24 months) was significantly more costly than TURP (p<0.001). Indirect cost ranges from 290 to 780$ in pharmacotherapy group and from 40 to 220$ in TURP group (p<0.04).

Conclusion: Direct and indirect costs of pharmacotherapy were higher than TURP. When compared to direct cost, indirect cost in treating BPH was significantly higher, especially with additional hospital stay.

UP-099

Do Old Patients Really Understand LUTS Assessment Questionnaire? International Prostate Symptom Score as an Example About 260 Patients

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Introduction and Objective: Validated symptom score questionnaire assessing LUTS bother is recommended in benign prostatic obstruction (BPO) evaluation. Currently, the International Prostate Symptom Score (IPSS) is the most used score. To assess what old patients with LUTS due to BPO really understand by different questions of IPSS.

Materials and Methods: A retrospective study was performed on patients with LUTS secondary to BPO. We included old patients (age ≥ 70 years) with no history of neurologic disorder or prostate surgery. They were asked at their first visit about LUTS severity IPSS. After that they were asked separately by a senior urologist and senior nurse about the meaning of every question and if he gives right answers. Period of study: June 2014 - November 2018. We included 260 men with an average age of 76.6 ± 4.2 years.

Results: Table 1 resumes mean different misunderstanding IPSS questions for old patients: Overall, 138 patients (53%) make at least one mistake to correctly answer

Conclusion: Although IPSS is a useful tool to evaluate TUTS severity and decide management, it is often misunderstood and time-consuming test. We need really more than just asking old patients. We really need feedback. We have to be sure that they fully understand the question and give us the right answers.

UP-100

Urodynamic Analysis and Therapeutic Efficacy Evaluation in Patients with Detrusor Hyperactivity with Impaired Contractility

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Introduction and Objective: We analyzed the urodynamic characteristics of bladder detrusor hyperactivity with impaired contractility (DHIC) and evaluated the efficacy of medical and surgical treatment.

Materials and Methods: Sixty-eight cases of male patients were diagnosed as DHIC by urodynamic examination. Patients with BOO were treated by TURP, and non-BOO patients were given medication according to the symptoms. IPSS and QoL scores, Q_{max} and PVR were used as prognostic indicators to evaluate the therapeutic efficacy for 3 months of follow-up.

Results: The overall efficacy of combined therapy with α-blockers and anticholinergics was better than that of the single drug group. The average IPSS and QoL scores were significantly improved after treatment in each group. In addition to the anticholinergic group, Q_{max} increased significantly in all groups after treatment, and PVR reduced significantly in the combined pharmacologic and surgical group.

Conclusion: It was safe and effective for male patients with DHIC to receive combined pharmacologic therapy using α-blockers and anticholinergics, but the anticholinergics should be used carefully for patients with detrusor contraction coefficient (DECO) less than 0.5. Surgical treatment of BPH could be chosen for patients with obstruction coefficient (OCO) greater than 1.5.

UP-101

Correlation Study Between Post-Void Residual with Bladder Outlet Obstruction and Detrusor Contractility in Benign Prostatic Hyperplasia

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Introduction and Objective: We identified the correlation between post-void residual (PVR) and severity of bladder outlet obstruction (BOO) and detrusor contractility decreased in benign prostatic hyperplasia (BPH) patients.

UP.099, Table 1: Misunderstanding patients' answers to IPSS questions.

IPSS Question	Misunderstanding patients' answer
1. Incomplete Emptying	Too different from day to day (n=48), can't answer (n=73)
2. Frequency	Two hours when they feel full bladder (n=39)
3. Intermittency	Confused it with dripping (n=105)
4. Urgency	I can't, not more than 30 min (n=81)
5. Weak Stream	It's not the same 20 or 30 years ago (n=17)
6. Straining	I can push any time (n=16)
7. Nocturia	Include urination before sleeping (n=53), at morning (n=68) and when they weak up not really for urination but for "Fajr prayer" (n=77).
	Night workers (n=9).
	Sleeping trouble (n=21)

UP.100, Table 1: Characteristics of 68 men diagnosed with DHIC, by clinical presentation.

Variable	BOO (n=29)	non-BOO (n=39)			*P-value*
		Storage (n=11)	Voiding (n=8)	Mixed (n=20)	
Age (yr)	75.69±6.67	65.27±8.05	76.25±7.29	70.20±8.36	0.001
IPSS	28.66±2.35	28.18±1.94	26.63±2.67	27.75±2.53	0.178
QoL	4.21±0.49	4.27±0.47	4.25±0.46	4.25±0.44	0.977
Cystometric volume (mL)	330.66±41.26	303.18±34.88	328.13±40.88	317.85±41.39	0.258
PdetQmax (cmH_2O)	74.00±6.45	28.09±9.78	39.88±10.12	37.40±8.43	0.000
Qmax (ml/s)	4.03±1.24	9.73±2.57	5.74±1.10	6.82±2.65	0.000
PVR (ml)	175.55±30.70	71.00±15.32	193.38±53.90	118.35±33.42	0.000
Reduced compliance	3 (10.3%)	1 (9.1%)	1 (12.5%)	3 (15.0%)	0.946
Urge incontinence	2 (6.9%)	1 (9.1%)	0 (0.0%)	3 (15.0%)	0.711
Abdominal straining	5 (17.2%)	1 (9.1%)	2 (25.0%)	4 (20.0%)	0.852

UP.100, Table 2: Comparison of symptoms and urodynamic parameters before and after treatment in each group.

Group	Variable	Pre-treatment	Post-treatment	t-value	*P-value*
Anticholinergic	IPSS	28.30±1.86	22.14±5.56	20.883	0.000
	IPSS-S	13.18±1.08	8.55±3.14	5.487	0.000
	IPSS-V	15.00±1.67	13.45±3.05	1.741	0.112
	QoL	4.20±0.40	3.12±0.99	17.507	0.000
	Qmax (ml/s)	9.73±2.57	10.45±5.12	-0.837	0.422
	PVR (ml)	71.00±15.32	143.45±168.26	-1.508	0.163
α- blocker	IPSS	26.86±2.60	21.18±6.50	17.078	0.000
	IPSS-S	9.13±1.81	9.50±3.78	-0.363	0.728
	IPSS-V	17.38±1.06	11.25±3.58	5.297	0.001
	QoL	4.28±0.45	2.95±1.21	17.138	0.000
	Qmax (ml/s)	5.74±1.10	9.00±3.06	-3.482	0.010
	PVR (ml)	193.38±53.90	134.50±47.51	2.350	0.051
α- blocker plus anticholinergic	IPSS	27.97±2.46	18.90±3.80	69.635	0.000
	IPSS-S	11.80±1.20	7.50±1.54	13.932	0.000
	IPSS-V	16.05±1.50	11.20±2.55	11.256	0.000
	QoL	4.27±0.45	2.43±0.76	52.896	0.000
	Qmax (ml/s)	6.82±2.65	10.48±2.64	-12.336	0.000
	PVR (ml)	118.35±33.42	61.45±49.78	8.314	0.000
Surgical treatment	IPSS	28.84±2.29	20.35±4.99	54.659	0.000
	IPSS-S	10.24±1.57	8.48±2.67	3.970	0.000
	IPSS-V	18.34±1.11	11.69±2.59	15.665	0.000
	QoL	4.23±0.49	2.90±0.86	43.146	0.000
	Qmax (ml/s)	4.03±1.24	11.95±2.74	-12.195	0.000
	PVR (ml)	175.55±30.70	76.59±46.41	10.909	0.000

UP.100, Table 3: Comparison of characteristics of men with and without symptomatic improvement.

Characteristic	Better (n=55)	Same or worse (n=13)	t-value	*P-value*
Age (yr)	73.33±8.69	73.73±5.69	-1.756	0.079
Cystometric volume (mL)	327.04±39.89	327.91±46.82	-1.111	0.267
PdetQmax (cmH_2O)	62.35±18.85	48.39±17.61	16.464	0.000
Qmax (ml/s)	7.38±3.18	6.90±2.17	1.597	0.112
PVR (ml)	163.61±51.10	162.38±45.84	1.031	0.303
DECO BOO	0.95±0.03	0.93±0.07	0.577	0.597
non-BOO	0.79±0.13	0.61±0.15	2.595	0.015
OCO BOO	1.64±0.11	1.19±0.11	9.074	0.000
non-BOO	0.74±0.18	0.61±0.26	1.256	0.222

UP.101, Table 1: Correlation when PVR ≤ 150 mL (n=101)

Pearson Correlation	PV	Qmax	BOOI	BCI	PVR
PV	-	-0.147	0.407**	0.361**	0.040
Qmax	-0.147	-	-0.269**	0.134	-0.039
BOOI	0.407**	-0.269**	-	0.672**	0.074
PVR	0.040	-0.039	0.074	0.041	-

**P<0.01.

Materials and Methods: 152 cases of BPH underwent ultrasound and urodynamic examination to measure the volume of prostate, PVR, free Q_{max}, bladder outlet obstruction index (BOOI) and bladder contractility index (BCI). The correlations between ultrasound and urodynamic parameters were analyzed by SPSS 20.0.

Result: There is positive correlation between prostate volume and BOOI and BCI (r = 0.432 and r = 0.343, P < 0.01). Qmax was correlated negative with BOOI, but there is no significant correlation with BCI (r = 0.123, P > 0.05). When PVR?150 mL, there is no significant correlation between PVR and BCI (r = 0.041, P > 0.05). When PVR> 150 mL, PVR and BCI have significantly negative correlation (r = -0.490, P < 0.01). When PVR > 300 mL, this correlation is particularly noticeable (r = -0.717, P < 0.01).

Conclusion: PVR could somehow predict the detrusor function. We should pay attention to evaluate of detrusor function for PVR > 150 mL cases, especially when PVR > 300 mL, it is suggested to perform urodynamic examination to exactly evaluate BOO severity and detrusor contractility.

UP-102

Clinical Efficacy of Transurethral Surgery on Patients of Benign Prostatic Hyperplasia with Detrusor Underactivity

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Introduction and Objective: Detrusor underactivity (DU) usually affects decision making whether surgery is necessary for patients with benign prostatic hyperplasia (BPH). We investigated the surgical efficacy in patients of BPH with non-neurogenic DU who underwent Bipolar transurethral plasmaKinetic prostatectomy (TUPKP).

Materials and Methods: A total of 66 men with urodynamic DU and voiding dysfunction who underwent TUPKP from 2014 to 2017 were retrospectively analyzed for the treatment outcome after follow-up for at least 1 year. Fifty cases of BPH patients with normal detrusor contractility in the same time period were set as control group. DU was defined as urodynamic evidence of detrusor pressure < 40 cmH_2O, Q_{max} < 10 mL/s, post-void residual (PVR) > 300 mL, and voiding efficiency (VE) < 33%. All patients had been excluded neurogenic diseases. Satisfactory outcome was defined as improved IPSS, QoL and having a PVR < 50mL, VE > 50% after surgery. Independent t test and chi square test were performed by SPSS 20.0. P-value < 0.05 was considered to indicate statistical significance.

Results: There was no significant difference of age, illness course, IPSS, QoL, prostate volume, operation time and weight of the resected prostate tissue between cases with and without DU. The mean IPSS, QoL, Q_{max}, PVR and VE at 3months, 6months and 12 months after surgery were significantly improved in both of the two groups compared with those before surgery. At the follow-up of 12 months, 58 (87.8%) patients in DU group and 49 (98.0%) patients in non-DU group had achieved satisfactory treatment outcome. The satisfactory group had significantly higher detrusor pressure at baseline than the unsatisfactory

UP.101, Table 2: Correlation when PVR > 150 mL (n=51)

Pearson Correlation	PV	Qmax	BOOI	BCI	PVR
PV	-	0.272	0.378**	0.225	0.064
Qmax	0.272	-	-0.317*	0.241	-0.250
BOOI	0.378**	-0.317*	-	0.384**	0.007
PVR	0.064	-0.250	0.007	-0.490**	-

*P<0.05,**P<0.01.

UP.101, Table 3: Correlation when PVR > 300 mL (n=26)

Pearson Correlation	PV	Qmax	BOOI	BCI	PVR
PV	-	0.330	0.294	0.069	0.052
Qmax	0.330	-	-0.457*	0.206	-0.097
BOOI	0.294	-0.457*	-	0.239	-0.172
PVR	0.052	-0.097	-0.172	-0.717**	-

*P<0.05,**P<0.01.

group. Forty-eight (72.7%) patients with DU had recovery of detrusor contractility within 3 months.

Conclusion: BPH with preoperative DU could achieve significant improvement in voiding function after TUPKP. Most patients with detrusor dysfunction due to BPH could recover after relief of obstruction.

UP-103

Bladder α1-Adrenoceptor Subtype Change in Rat Bladder Following Bladder Outlet Obstruction and Subsequent Relief

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Introduction and Objective: Many patients with benign prostatic hyperplasia need treatment for remaining storage symptoms after transurethral resection of prostate surgery, even if the obstruction was successfully relieved. But there is no consensus on the cause of detrusor instability after relief of bladder outlet obstruction (BOO). We investigated the alteration of bladder α1-adrenoceptor subtype after relief of partial bladder outlet obstruction in a rat urothelium and detrusor muscle.

Material and Methods: A total of 60 female Sprague–Dawley rats were randomly divided into three groups: the sham-operated group (Sham, n= 20), the partial BOO group (BOO, n= 20) and the partial BOO relief group (BOO+R, n= 20). PBOO rats were induced for 2 weeks, the obstruction around the urethra has relived by removal of ligation after 2 weeks. The bladder tissue was carefully separated into urothelium and detrusor muscle layer under a dissecting microscope by cutting in through the lamina propria. The expression of α1-adrenoceptor subtype (α1A, α1B, α1D) in the urothelium and smooth muscle tissues was examined by Western blot assay.

Results: In the urothelium of the BOO group, the expression of α1D-adrenoceptor was significantly higher than the sham operated group. The expression of α1D-adrenoceptor was also significantly higher in the BOO group in the muscle. After relief of partial BOO, α1D-adrenoceptor expression was significantly decreased as compared to the partial BOO group but was still significantly increased than sham operated group. Alpha1D-adrenoceptor predominated over other subtypes in both urothelium and bladder muscle. In addition, α1A-adrenoceptor was predominant in the sham operated group but was significantly decreased in the urothelium in the partial BOO group, and there was no statistical difference in muscle and total bladder. The expression of α1B-adrenoceptor was not statistically significant among the three groups in muscle and urothelium.

Conclusion: Our findings indicate a remarkable increase in bladder α1D-adrenoceptor expression after relief of partial bladder outlet obstruction. This finding suggest that urothelial α1D-adrenoceptor plays an important role in the persistence of storage symptoms in the partial BOO relief group. These results may also imply that selective α1D-adrenoceptor antagonists such as naftopidil may be effective in persistent post-operative storage symptoms of BPH patients.

UP-104

Metabolic Syndrome is Predictive of Lower Urinary Tract Symptom Improvement After Holmium Laser Enucleation of the Prostate for Benign Prostatic Obstruction

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Introduction and Objective: To investigate the effect of metabolic syndrome (MS) on patient outcomes who underwent holmium laser enucleation of the prostate (HoLEP) for benign prostatic obstruction.

Materials and Methods: Data from 151 patients who underwent HoLEP by a single surgeon between March 2012 and March 2016 were retrospectively analyzed. Patients with MS were assigned to group A (n= 33) and patients without MS in group B (n= 118). Clinical characteristics and the International Prostate Symptom Score (IPSS), including quality of life (QoL), maximal urinary flow rate (Qmax), and postvoid residual urine (PVR), before surgery and 3 months afterward were compared between groups. Additionally, predictors of total IPSS improvement after HoLEP were assessed.

Results: Compared with group B patients, group A patients were older (70.3 vs. 65.2 years old, p= 0.001). Preoperative data, which included prostate volume, QoL, Qmax, and PVR, were not different between groups. For all patients, both the storage subscore and voiding subscore significantly decreased after surgery ($p < 0.001$). Postoperative total IPSS and voiding subscore improvement in group A were lower than in group B (total IPSS improvement 9.2 vs. 12.5, p= 0.042; voiding subscore improvement 6.6 vs. 8.8, p= 0.048). Multivariate analysis showed preoperative total IPSS (β= 0.79, CI 0.71-0.94, $p < 0.001$) and number of MS components (β= -0.15, CI -2.04 to -0.29, p= 0.009) were independently associated with total IPSS improvement.

Conclusion: We found that MS was associated with decreased postoperative symptom improvement. Thus, lower urinary tract symptoms after surgery may be a systemic disorder due to multiple metabolic risk factors.

UP-105

Patient Bother from Anejaculation After Transurethral Resection of the Prostate

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Introduction and Objective: Retrograde ejaculation has been accepted as a common but harmless side-effect after transurethral resection of the prostate (TURP). The objective of this study was to determine the level of bother in benign prostatic hyperplasia (BPH) patients who experienced de novo anejaculation after TURP.

Materials and Methods: 80 subjects (45 prostatic urethral lift, PUL; 35 TURP) were enrolled in a prospective, randomized trial (BPH6 study). Male Sexual Health Questionnaire for Ejaculatory Function (MSHQ-EjD) outcomes was assessed through 12 months. TURP cohort data were analyzed to evaluate bother from de novo anejaculation. Subjects who answered 1-5 to the MSHQ-EjD function question 3 were defined as having ejaculatory volume while those who answered 0 were defined as having anejaculation. At the earliest report of anejaculation, the corresponding response to the MSHQ-EjD bother question was assessed and results were compared to subjects with volume. To determine if bother was sustained, the same assessment and comparison were performed at the last report of anejaculation.

Results: 35/35 TURP subjects had ejaculatory volume at pre-procedure baseline. 65.7% (23/35) experienced anejaculation during follow up. At the earliest report of anejaculation (mean 126 days), the MSHQ-EjD bother score was significantly higher in subjects with

UP.105, Table 1: MSHQ-EjD Bother Score Comparison of Subjects with De Novo Anejaculation and Subjects with Ejaculatory Volume after TURP.

MSHQ-EjD Bother Score	Subjects with De Novo Anejaculation, n=23	Subjects with Ejaculatory Volume, n=12	*P*-value
Earliest report of anejaculation (mean 126 days)	2.6 ± 1.3	1.6 ± 1.3	0.03
Latest report of anejaculation (mean 310 days)	2.4 ± 1.3	1.4 ± 1.1	0.03

anejaculation (2.61± 1.27) compared to those with ejaculatory volume (1.58 ± 1.31, p= 0.0318). These results were sustained with similar results (2.39 ± 1.31 anejaculation versus 1.42 ± 1.08 volume, p= 0.0338) at the latest time anejaculation was reported (mean 310 days), demonstrating that losing all ejaculatory volume is bothersome to patients early on and almost a year after surgery. Loss of ejaculation was reflected in declining MSHQ-EjD function scores for TURP subjects that were significantly worse compared to PUL subjects who maintained stable ejaculatory function (7.7 TURP vs 12.3 PUL at 1 month, p= 0.03; 5.6 TURP versus 11.9 PUL at 12 months, p <0.0001).

Conclusion: Completely losing ejaculatory volume after TURP is bothersome to patients especially compared to those who maintain some ejaculatory volume. Clinicians must be aware of the deleterious effects of ejaculatory dysfunction when counseling patients on BPH treatment options.

UP-106

Safety and Efficacy of Bipolar Plasmakinetic Enucleation of Prostate in Men with Benign Prostatic Hyperplasia and Receiving Anticoagulants and/or Platelet Aggregation Inhibitors: A Tertiary Care Centre Experience

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Introduction and Objective: To evaluate the safety and efficacy of bipolar plasmakinetic enucleation of the prostate (BPEP) for patients on oral anticoagulants (OA) and/or platelet aggregation inhibitors (PAI) with symptomatic benign prostatic hyperplasia (BPH).

Materials and Methods: Data was analysed for patients who required surgery for BPH and were on oral anticoagulants and/or platelet aggregation inhibitors and were treated by bipolar enucleation using the button electrode between April 2013 and September 2018. The operative duration, enucleation time, resected tissue weight, amount of irrigation fluid used, the decrease in intra-operative haemoglobin level, haematocrit, serum sodium levels, and the blood loss were recorded. The follow-up data were analysed.

Results: During the study period eighty such patients were managed by BPEP. Mean prostate volume was 89.84 + 14.78 cc, and resected tissue weight was 52.11 + 17.92 g. The mean operative time was 78.48 + 29.63 min, and the catheter time was 2.03 + 1.78 days. There were no perioperative thromboembolic events. Two patients (2.5 %) required a second-look operation in the immediate postoperative course (hemorrhage, n= 2) and six required (7.5 %) blood transfusions. Complications within the first 30 days included urinary tract infections (2.5%), urinary retention (1.25 %), and delayed bleeding (2.5 %). The follow-up data indicates a significant improvement in the IPSS, QoL, PVR and Q-max at all stages of follow up.

Conclusion: BPEP seems to be a safe and efficacious procedure for the treatment of symptomatic BPH in patients at high cardiopulmonary risk on OA and or PAIs'.

UP-107

Development of Machine Learning Based Risk Calculator for Postoperative Complication of BPH Surgery

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Introduction and Objective: Machine learning is a promising tool in the diagnostic field. In this study, we aim to development postoperative risk calculator for BPH surgery using deep-learning methods.

Materials and Methods: We used 989 patients BPH surgery data, which collected pre- and post-operative patients' history, uroflowmetry, voiding diary, urodynamic study and questionnaires were used for development and validation. The database contained patient's data from 2008 to 2018, and diverse kind of BPH surgery; TURP, HoLEP, HPS and TUEB. Acute complication was assessed within 3 days after BPH surgery. We are using pre-operative UDS, UFM, VD and history and operation type as variables for the prediction model. We spliced databased 7:3 for training and testing, 10 folds-cross validation was performed in each model development for generalization. We made generalized linear model (GLM), gradient boosting model (GBM), distributed random forest (DRF) and deep-learning (DL) based prediction model. For the increasing accuracy, grid search for hyperparameter tuning was performed to each model.

Results: We founded 161 acute complications and hematuria, AUR is most common. We successfully made each machine learning models with high accuracy. We choose best of best (BOB) model from 15 GBM models, 15 DRF models, 6 DL models, we developed by hyperparameter tuning. The AUC in the ROC curve of each BOB models was 0.986, 0.953, 0.952 and 0.965 for GLM, GBM, DRF and DL model in 10-folds cross-validation matrix. In the test dataset, the AUR of each model was 0.943, 0.938, 0.927 and 0.945.

Conclusion: We successfully made ML based acute complication prediction models of BPH surgery. We need improvement of models by more accurate variable selection and multicenter validations.

UP-108

Peri-Prostatic Vascular Dilatation Associates with Lower Urinary Tract Symptoms Due to Benign Prostatic Hyperplasia and Predicts Efficacy of Dutasteride Treatment

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Introduction and Objective: Little has been known about possible relationships between peri-prostatic anatomical structure and severity of lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH) as well as effectiveness of medical treatment for BPH. We investigated whether peri-prostatic vascularity was related with pre-treatment LUTS severity, and if so, whether it could predict efficacy of dutasteride treatment in BPH patients.

Materials and Methods: Subjects of this retrospective analysis were 97 men with BPH that had underwent baseline prostatic magnetic resonance imaging (MRI) and treatment with dutasteride 0.5 mg daily for at least 6 months at our institution between 2009 and 2015. Sixty-seven of the subjects (69%) also received α1-blockers concomitantly. Peri-prostatic vascular area (PPVA) was measured on axial T1-weighted MRI images at the level of prostatic base by tracing the outer circumference of the bilateral vascular bundles. Baseline characteristics including age, prostate-specific antigen (PSA) level, prostate volume, intravesical prostatic protrusion (IPP), PPVA along with International Prostate Symptom Score (IPSS) before, 12, and 24 months after dutasteride treatment were recorded.

Results: Median (range) values of age, total IPSS, PSA, prostate volume, IPP and PPVA were 71 (59–94) years, 15 (8-32), 7.08 (2.57–44.5) ng/mL, 54 (22–145) mL, 8.7 (0–30.5) mm and 615 (89–1353) mm^2, respectively. Median (range) follow-up duration was 33 (6 –74) months. After 12 and 24 months of dutasteride treatment, median (range) change in total IPSS were -6 (-23 to 10) and -6 (-20 to 6) respectively. Logistic regression analyses revealed that PPVA was most strongly associated with pre-treatment total IPSS (r = 0.213, p = 0.045) among the factors analyzed. We also confirmed that PPVA was the sole significant predictor of percent total IPSS change in both 12 and 24 months after dutasteride administration (r = -0.295, p = 0.038, and r = -0.368, p = 0.046, respectively).

Conclusion: Peri-prostatic vascular dilatation was associated with severe LUTS and better subjective improvement under dutasteride therapy in BPH patients. Further prospective studies are warranted to clarify possible mechanisms underlying between peri-prostatic blood congestion and LUTS as well as relief of LUTS by dutasteride.

UP-109

Ambulatory Uroflowmetry: An Insight into Patient's True Voiding Patterns

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Introduction and Objective: Uroflowmetry permits an indirect measure of bladder outlet obstruction through a simple non-invasive test. However, uroflowmetry performed in the hospital provides only a single measure of a biological parameter which tends to fluctuate according to time of day, bladder fullness, position, psychological factors, etc. Ambulatory flowmeters allow patients to easily record multiple flows in their normal environment. We hypothesize that ambulatory uroflowmetry is more representative of the patient's habitual urine flow and may differ when compared to hospital uroflowmetry.

Materials and Methods: All patients presenting to our department in March 2018 for a uroflowmetry which fulfilled the inclusion/exclusion criteria were invited. Participants performed a flowmetry at the hospital and received a Flowtaker, an ambulatory flowmeter intended to record flows at home during three consecutive days, and a questionnaire to fill out afterwards.

Results: With Flowtaker, nineteen patients recorded an average of 22±8 flows (range: 10-39) at home for 2.9 days. When compared to hospital flowmetry, average Qmax recorded with Flowtaker was slightly higher (11.2 vs. 10.4 ml/s) while average volume of urine voided (UVol) was lower (150 vs. 191 mL) When comparing the patient's hospital results with his median values from Flowtaker, 31% of patients had Qmax and/or UVol that were extremely different (i.e., a UVol much higher than maximum UVol at home); no tendency towards systematically higher/lower values of Qmax/UVol during hospital flowmetry was apparent. 16% of patients classified as "obstructed" (Qmax <10 ml/s) based on hospital flowmetry were classified as "equivocal" or even "unobstructed" based on ambulatory values, all of whom received surgical treatment. The questionnaire showed 75% of patients preferred ambulatory flowmetry and all patients considered this modality "more representative" of his normal urine flow.

Conclusion: Hospital uroflowmetry, based on limited number of measurements in an artificial environment, added to the normal fluctuation of Qmax, may not always reflect the patient's average urine flow and does not express nocturia. This may have important interference with treatment decisions. Ambulatory uroflowmetry may be useful in equivocal cases, when patients are unable/unwilling to perform the exam at the hospital or when a bladder diary is deemed necessary.

UP-110

Open Prostatectomy for Large Benign Prostates: Assessing Benefit of Post-Operative Epidural Analgesia on Outcomes

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Introduction and Objective: There is convincing body of evidence that epidural anaesthesia and analgesia improves post-operative recovery and outcomes following major surgery. Thus, this study aims to assess benefits of postoperative epidural analgesia on some postoperative parameters commonly encountered following open prostatectomy for large prostates.

Materials and Methods: We retrospectively studied 35 patients who had open prostatectomy under epidural anaesthesia followed by post-op epidural analgesia (Group A - 17 patients) and those who had other forms of anaesthesia without post-op epidural analgesia (Group B - 18 patients) within a 3-year period (January 2016 and December 2018) in a tertiary health facility in Nigeria. Health records of the patients were retrieved and reviewed for demographic characteristics, number of pints of blood transfused both intra- and post-op, number of bladder spasms per day felt by the patient, pain scores, total irrigation fluid volume, incidents of blocked catheters, and weight of prostatic adenoma enucleated.

Results: The age incidence of the patients in both groups were similar. There were no reports of bladder spasms or blocked urethral catheter amongst group A patients, whereas this was constantly reported among group B patients. Post-operative blood loss as estimated by need for transfusions and total volume of irrigation fluid was significantly higher for group B than A patients (P <0.001). Post-operative pain scores were also significantly higher for B patients. Average weight of enucleated adenoma for both groups was 119 g (range 70-300) and 128 g (range 70-280) respectively. There was no significant difference in hospital stay for both groups.

Conclusion: Post-operative epidural analgesia is highly beneficial for open prostatectomy patients as it has abolished the pain, the spasm, the bleed, the blockage and the flush commonly encountered in the post-operative period following this procedure.

UP-111

Cross-Sectional Association of Non-High-Density Lipoprotein-Cholesterol to High Density Lipoprotein-Cholesterol Ratio and Testosterone Deficiency in Aging Chinese Male with Benign Prostatic Hyperplasia

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Introduction and Objective: The non-high-density lipoprotein-cholesterol (HDL-c) to HDL-c ratio is reportedly associated with metabolic syndrome and insulin resistance. Benign prostate hyperplasia (BPH) and testosterone deficiency (TD) are common in aging male. More and more evidence has supported these two conditions are related to metabolic factors. In this paper, we performed a retrospective study and discussed the possible relationship between non-HDL-c to HDL-c ratio and TD in aging Chinese men with BPH.

Materials and Methods: The medical records of 795 BPH patients who referred to surgery were evaluated. We reviewed the clinical data by age, body mass index (BMI), medical history, serum prostate-specific antigen (PSA) levels, serum total testosterone (TT) levels, biochemical analysis and transrectal ultrasound. TD was defined as a serum value of TT less than 10.4 nmol/L (300 ng/dL).

Results: 216 (27.2%) BPH patients we examined had TD. Univariate analysis showed low testosterone has a possible correlation with age, BMI, hypertension, diabetes mellitus, PSA, HDL-c, non-HDL-c to HDL-c ratio, serum creatinine, uric acid, albumin, fasting plasma glucose, glycated hemoglobin A1c and total prostate volume. We then applied multiple regression models to evaluate the independent relationship between non-HDL-c to HDL-c ratio and TD. Results revealed that non-HDL-c to HDL-c ratio is correlated with TD (odds ratio= 1.3, 95% CI: [1.1, 1.5], P= 0.007). After adjusted age, BMI, hypertension, diabetes mellitus, PSA, albumin, fasting plasma glucose, glycated hemoglobin A1c and total prostate volume, the odds ratio was 1.2 (95% CI: [1.0, 1.5], P= 0.049).

Conclusion: Nearly one-third of aging Chinese BPH patients we studied had TD. Clinicians should be aware of the high prevalence of low testosterone in these patients. Non-HDL-c to HDL-c ratio has a positive correlation with TD. It may be a good index that could well reflect the status of TD.

UP-112

100 TURPs: Retrospective Analysis of Blood Loss to Guide Preoperative Risk Stratification and Group & Save Sampling

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Introduction and Objective: Rates of transfusion following TURP in literature is less than 2%. We present a Quality Improvement project which assesses local TURP blood loss and rate of transfusion to formulate preoperative Group and Save (G&S) policy in order to prevent excessive preoperative sampling and delays in theatre start time.

Materials and Methods: 100 sequential TURP operations over 16 months, from 22/06/17 to 26/11/18, were retrospectively analysed. Data was collected on preoperative and day 1 postoperative haemoglobin (Hb), length of stay, prostate size, resection weight, G&S sample dates, and transfusion prevalence.

Results: Median patient age was 70. Prostate volumes ranged from 55-212 mL. Mean preoperative Hb was 138 g/L. Mean change in postoperative day 1 haemoglobin was -9.3 g/L, with a range of +10 to -44 g/L. Median length of stay was 2 days. Mean resection weight was 11.3 g, ranging 0.5-39.5 g. 96% (96/100) patients had 1 preoperative G&S sample, and 62% (62/100) patients had at least 2 samples. 4% (4/100) of patients did not have a preoperative G&S. 0% (0/100) of patients were transfused day 1 postoperatively, and 1% (1/100) received transfusion within 30 days of op-

eration. This patient was transfused postoperatively after non-elective operative management for intractable haematuria from a large vascular prostate.

Conclusion: There are no current guidelines regarding this issue. However local hospital policy recommends that 2 G&S samples are available at operation in order to minimise time needed for cross-matched blood to be issued, if transfusion were to be needed. This led to situations where patients require sampling on morning of operation and caused delays in operative start time. Policy change is proposed so that only 1 G&S sample, taken at pre-assessment clinic, would be sufficient on day of operation. This means that if transfusion were necessary intra- or postoperatively, a 2nd sample would be required. Cross-matched blood would be issued within 45 minutes of the 2nd sample being received in the transfusion lab.

UP-113

Constipation Can Affect the Voiding Dysfunction of Old Hospitalized Patients

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Introduction and Objective: Voiding and defecation are known to be controlled by nerve systems located nearby each other in sacral nerve nucleus. Therefore, pelvic floor dysfunction may evoke both voiding dysfunction and defecation disorders. It is unclear the defecation disorder can affect the voiding dysfunction of hospitalized patients. In this study, we investigated the relationship between constipation and voiding dysfunction in old hospitalized, especially, female patients.

Materials and Methods: Among Patients who were consulted for voiding problems during hospitalization from 2016 to 2017, female were collected retrospectively. Patients who received brain and spinal and colorectal surgery, who expired during hospitalization, and who received radiation therapy on pelvic area were excluded. And in this study, we analyzed the patients over 60 years old. Patients were divided into two groups by the presence of constipation. Current voiding problems including retention, lower urinary tract symptoms (LUTS; e.g. frequency, straining, incomplete emptying sense), urinary flow rates, post void residuals (PVR). Almost patients who were underwent retention or voiding difficulty received alpha blocker for symptom relief. Patients who showed Furthermore, the recovery from the retention was investigated.

Results: Fifty-five patients were analyzed to this study. Patients mean age was 68.3 (± 5.6, SD). Eighteen patients showed constipation and received anti-constipation medication (oral, rectal, or enema). Retention patients were 7 (38.8%) in constipation group (C group) and 12 (30%) in non-constipation group (N-C group) ($p = 0.56$). Mean periods of recovery from retention were 8.4 days (± 7.7) and 5.8 days (± 4.3) ($p < 0.05$). Except retention patients, patients with LUTS showed like this. Frequency was shown in 8 (44.4%) of C group and 14 (35%) of N-C group with $p > 0.05$, urgency in 5 (27.7%) and 8 (20%) with $p > 0.05$, nocturia over 2 times in 6 (33.3%) and 6 (15%) with $p < 0.05$, straining in 6 (33.3%) and 5 (12.5%). Among non-retention patients, peak flow rates were 19.7 mL/s (± 15.5) in C group and 24.8 mL/s (± 21.9) with $p > 0.05$. PVR were 53 mL (± 118) and 30 mL (± 76) with $p < 0.05$.

Conclusion: Patients in hospital showed various voiding dysfunction. Patients with defecation dysfunction also show the trend of voiding dysfunction. Recovery from retention tends to be more rapid in patient without constipation. Voiding symptoms rather than storage symptoms are shown in more frequently in constipation patients. However, larger population should be investigated.

UP-114

Association Between Daily Temperature Difference and Severity of Symptoms in Patients with Benign Prostatic Hyperplasia: A Nationwide Population-Based Study Using the National Health Insurance Service Database

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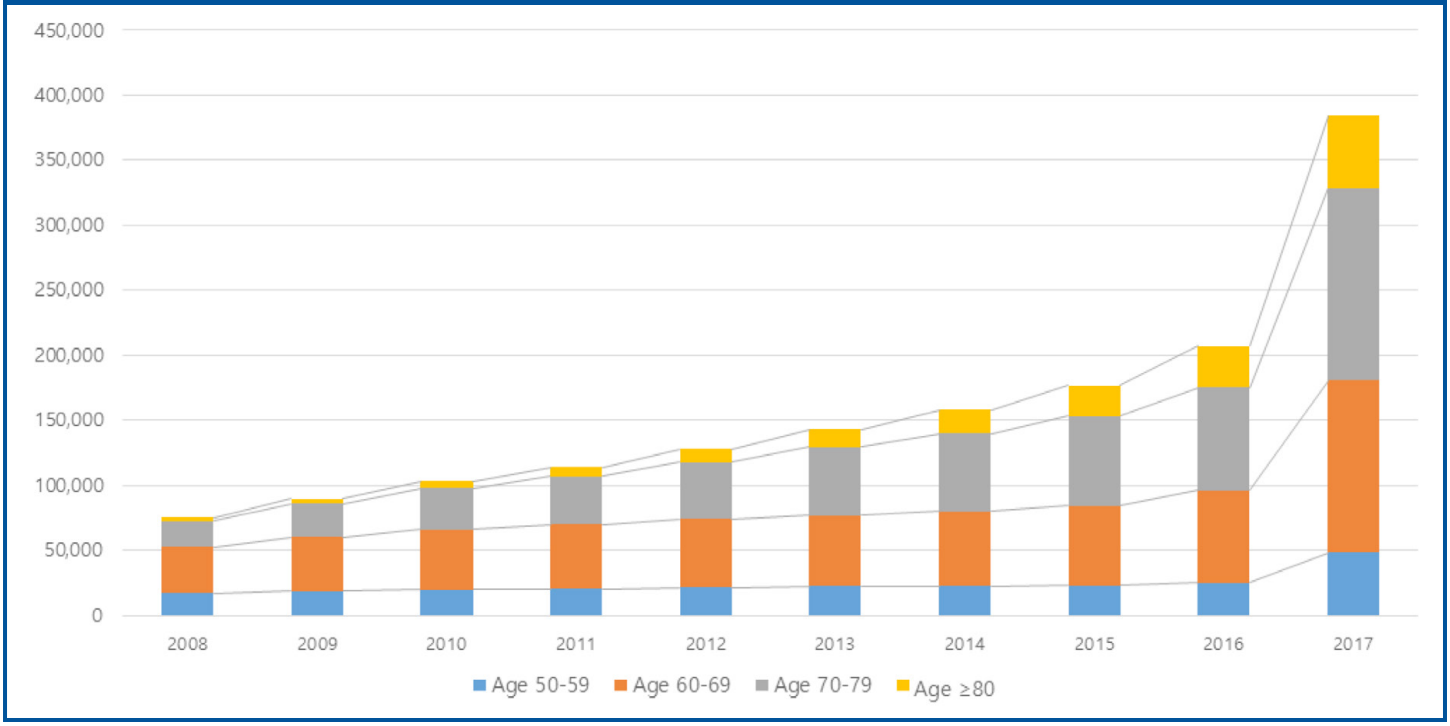
Introduction and Objective: We investigated the symptom deterioration of patients with BPH according to the daily temperature difference.

Materials and Methods: From the National Health Insurance Service database, we collected and analyzed data on patients with benign prostatic hyperplasia (BPH) patients in six major metropolitan areas in Korea between January 2008 and December 2017. We investigated the rate occurrence of emergency room visit, rate of urethral catheter insertion, rate of hospitalization, and rate of BPH surgery.

Results: A total of 1,446,465 patients were enrolled in this study. 7955 patients visited the emergency room when the daily temperature difference was below 4 degrees and 38985 patients visited the emergency room when the daily temperature difference was more than 10 degrees. When the daily temperature difference was more than 10 degrees, about 4.9 times more patients visited the emergency room than when the daily temperature difference was below 4 degrees. After visiting the emergency room, there were 3,309 patients who inserted the catheter at the daily temperature difference below 4 degrees. When the daily

UP.114, Figure 1.



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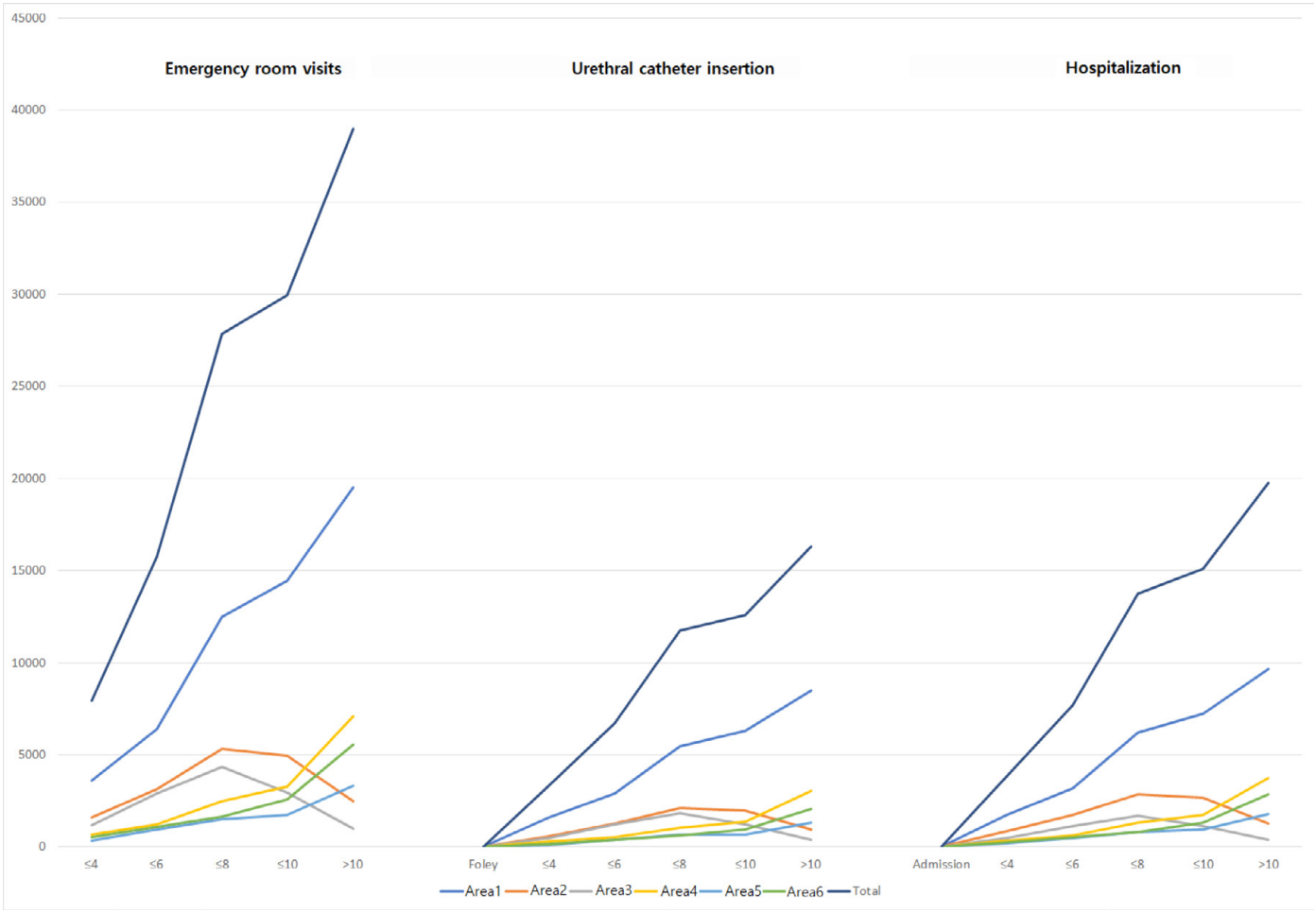

temperature difference was more than 10 degrees, the number of catheter insertion cases was 16,303, which was 4.9 times higher than that of below 4 degrees. The greater the daily temperature difference, the greater the number of patients undergoing BPH surgery after visiting the emergency room. By time, surgery was most frequently performed within three months after visiting the emergency room.

Conclusion: The deterioration of LUTS symptoms in patients with BPH is associated with daily temperature differences.

UP-115

Two-Year Outcomes after Aquablation Compared to TURP: Results from a Blinded Randomized Trial

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Introduction and Objective: To compare two-year safety and efficacy outcomes after Aquablation or TURP for the treatment of lower urinary tract symptoms related to BPH.

Methods and Materials: 181 patients with BPH were assigned at random (2:1 ratio) to either Aquablation or TURP. Patients and follow-up assessors were blinded to treatment. Assessments included International Prostate Symptom Score (IPSS), Male Sexual Health Questionnaire (MSHQ), International Index of Erectile Function (IIEF) and uroflow. The focus of analysis was two-year outcomes.

Results: At two years, IPSS scores improved by 14.6 points in the Aquablation group and 15.0 points in TURP (p= 0.7361, 95% CI for difference -1.9 to 2.7 points). Two-year improvements in maximum flow rate (Qmax) were large in both groups at 11.2 and 8.6 cc/sec for Aquablation and TURP, respectively (p= 0.1902, 95% CI for difference -1.3 to 6.4). Sexual function as assessed by MSHQ was stable in the Aquablation group and decreased slightly in the TURP group. At two years, PSA was reduced significantly in both groups by 0.7 and 1.1 points, respectively; the reduction was similar across groups (p= 0.3930). Surgical retreatment rates after 12 months for Aquablation were 1.7% and 0% for TURP. Over two years, surgical BPH retreatment rates were 4.3% and 1.5% (p= 0.4219), respectively.

Conclusion: Two-year outcomes after TURP and Aquablation were similar and the rate of surgical retreatment was low.

UP-116

Assessment of Minimally Invasive Surgery for Stress Urinary Incontinence on Quality of Life in Women

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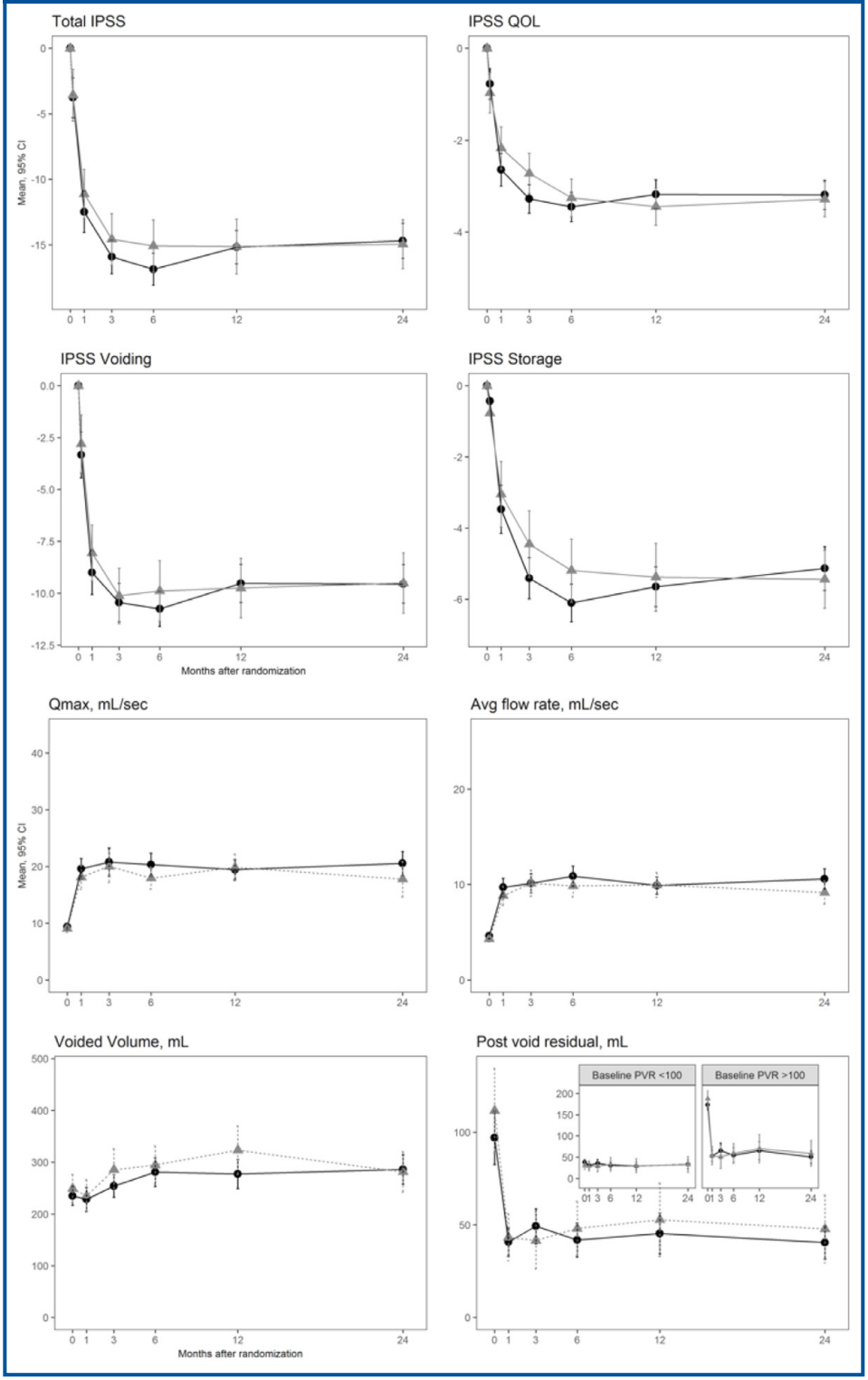
Introduction and Objective: The aim of our study was to assess subjective success of transobturator tape procedure (TOT) for stress urinary incontinence and its impact on quality of life in women.

Materials and Methods: 50 patients with stress urinary and mixed urinary, older than 18 years, with no previous pelvic surgery or radiotherapy and with no pelvic prolapse were assessed in order to estimate impact of TOT procedure on life quality. Patients were assessed with physical examination, cough stress test and fill out questionnaires (Australian pelvic floor questionnaire, Beck's depression inventory and SF36), preoperatively and six months after procedure. The

UP.115, Figure 1.



questionnaires were filled by the patients themselves. Subjective success was assessed from analyzed data from questionnaires.

Results: Our study found that objective success of TOT procedure 45 patients (90%), while subjective success was found in 43 patients (86%). Analyzing data from Australian pelvic floor questionnaire we found three times lower score in question about urgency ($p < 0.001$). Analyzed data from questionnaire about pelvic prolapse showed three times lower score after procedure ($p < 0.001$). Our study demonstrated significantly better sex life after procedure in sexually active women before and after procedure (N= 26, 52%) (p= 0.001). Analyzed data from the questionnaire demonstrated significant improvement of coital incontinence ($p < 0.001$). Our data demonstrated significantly lower score of the whole Australian pelvic floor questionnaire after procedure ($p < 0.001$). Data from Beck's depression inventory demonstrated significantly lower score after the procedure ($p < 0.001$). Data from SF 36 demonstrated significantly better general health after the procedure ($p < 0.001$).

Conclusion: Our study demonstrated slightly greater objective success rate compering to the subjective success rate. We demonstrated that TOT procedure improves in great measure symptoms of urgency voiding, coital incontinence and generally the quality of life. We also found improvement in general health and lower depression rate after the procedure.

UP-117

Open Transvesical Repair of VVF - Single Center Experience

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Introduction and Objective: To share our experience of open transvesical repair of vesicovaginal fistula.

Materials and Methods: Between January 2014 and January 2019, a total of 120 patients underwent open transvesical repair of vesicovaginal fistula. Mean patient age was 32 years (range 20 to 50). 77 were post hysterectomy, 28 post C section and 15 after prolong obstructed labour. All repairs were done after 12 weeks of initial injury. A database was kept prospectively for all patients.

Results: Mean operative time was 90 minutes (range 75 to 150), and average surgical bleeding was 150 mL (range 50 to 1000). It was found that 79 (65.8%) had high lying, 31 (25.8%) had low lying and 10 (8.3%) were combined fistulae while 12 (10%) had more than one opening on pan-endoscopy; 7 (5.8%) cases were recurrent. Mean size of fistula was 2 cm (range 1.5 to 5 cm). Ureteral stent was placed in 17 (14.1%) patients, which were removed after 6 weeks. Mean hospital stay was 12 days (range 10 to 14). 111 (96.5%) patients were completely dry at 6 and 12 weeks follow up; 2 (1.7%) had urge incontinence while 2 (1.7%) had persistent leakage. Five patients were lost to follow up, though they were dry at the time of discharge from hospital.

Conclusion: Open transvesical repair of vesicovaginal fistula is the tried, easy and tested method of VVF repair with less complications and more than 95% success rate especially if there is no previous intervention, do the best procedure first.

UP-118

A Novel Approach to Management of Small Persisting Vesicovaginal Fistulas

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Introduction and Objective: Vesicovaginal Fistulas are often iatrogenic complications of surgery or sequalae of protracted child birth. The management is often complicated and distressing for the both doctor and patient. Minimally invasive techniques of repair are gaining popularity in efforts to adequately repair

the fistula with minimal burden to the patient. The literature has previously described use of fibrin sealants to close urological fistulas and furthermore synthetic glues have been widely used in vascular surgery as an embolic agent. Such Synthetic glues like Glubran2, work by rapidly polymerizing when in contact with living tissues. This study describes a cases series using a minimally invasive cystoscopic approach to treat small uncomplicated vesicovaginal fistulas through injection of a synthetic glue into the fistula tract.

Materials and Methods: Retrospective review of patients who were symptomatic of VVF and had small but persisting fistulas confirmed on cross sectional imaging. Following failed conservative management with IDC, these patients underwent repair of the VVF through injection of Glubran2 directly into the fistula tract via cystoscopic approach. A 16Fr IDC was left in situ post operatively for 2 weeks. Patient symptoms were reviewed in outpatient clinic to assess leakage and a retrograde cystogram was performed to confirm closure of fistula tract.

Results: A total of 6 patients were treated with cystoscopically with injection of synthetic glue. One case of this method has failed with patent fistula on cystogram and associated symptomatology. The remaining 5 patients had successful treatment of fistula via Glubran2 injection with complete resolution of symptoms.

Conclusion: We describe a novel method of treating repair of VVF via minimally invasive method. Injection of synthetic glue into the fistula tract has been proven effective with nephrocutaneous fistulas and this study postulates that its use could be extended to treat small fistula tracts successfully. Failure associated with this technique has been associated with larger fistula size and poor patient healing factors. In this small series, it suggest this new method of minimally invasive repair may adequately treat fistulas with minimal patient burden. Further randomised studies would be required to further assess long term efficacy of this method.

UP-119

Complex Female Panurethral Stricture Disease Managed with Dorsal and Ventral Dual Buccal Mucosal Graft Onlay Urethroplasty

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Introduction and Objective: Panurethral stricture disease in women is considered a surgical challenge, which involves the complexity of the anatomical involvement and the limited amount of local tissues that can be mobilized for reconstruction. We present a novel surgical approach of dorsal and ventral dual buccal mucosal graft (BMG) onlay urethroplasty, including an evaluation of the intermediate-term surgical outcomes.

Materials and Methods: All cases of female urethroplasty performed at our institution between 2014 and 2017 were reviewed. Cases of panurethral stricture managed with the dual dorsal and ventral BMG procedure were identified. Patient demographic, clinical and perioperative data were collected and summarized. All patients had an office cystourethroscopy performed at 6 to 7 months post-operatively then yearly to asses urethral lumen size and patency. Successful outcome was defined as absence of need for further instrumentation (including self-catheterization, dilation, urethrotomy or further surgical repairs) at last recorded clinic follow-up. Post-operative complications were also reviewed.

Results: A total of three patients with a median 33-month (range 7-45) follow-up period were identified and reviewed for peri-operative characteristics and intermediate-term surgical outcomes. Median patient age at time of surgery was 61 years old (range 50-62), and median body mass index was 34 (range 32-34.1). All patients had at least one failed urethral dilation prior to definitive reconstruction. Other intraoperative variables included: median BMG surface area harvested of 12 cm^2 (range 10-12.5), median estimated blood loss of 150 mL (range 150-200), and median total procedure time of 152 minutes (range 145-165. Length of stay was 48 to 72 hours, and an indwelling urethral catheter was left in place for 3 weeks. All patients were found to have a patent urethral lumen – able to accommodate an 18 to 20 Fr caliber – and no patient required further urethral instrumentation by their last clinic follow-up visit. The only reported morbidity was BMG harvest site tightness, which did not require further intervention.

Conclusion: We present a case series of successful intermediate-term outcomes for female panurethral stricture disease managed with novel approach of dorsal and ventral dual buccal mucosal graft onlay urethroplasty. Considering results are promising and complication rates are low. Larger studies must be performed to confirm efficacy of this procedure.

UP-120

Anterior and Apical Prolapse Treatment with a Novel Uterine-Sparing Transvaginal Mesh Procedure

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Introduction and Objective: The aim of this study is to evaluate efficacy and safety, using a novel uterine-sparing transvaginal mesh for treatment of anterior and apical prolapse (POP).

Materials and Methods: Retrospective, nonrandomized, multicentre study. From July 2015 to March 2019, 37 patients underwent apical POP correction with this technique. Polypropylene mesh with U-form was implanted, anchored anteriorly to cervix and posteriorly to both sacrospinous ligaments, as new uterosacral ligaments (BSC mesh®, AMI GmbH, Austria). For anterior POP repair, we used anterior colporrhaphy. Data collection of clinical charts, clinical interview, exploration of patients and urodynamics were performed. Outcomes, complications and evolution were registered during follow-up.

Results: 27 patients were included. Median age was 58.7 years and median follow-up was 20.8 months. 15% had received hysterectomy. Median BMI was 28.1. In physical examination, all the patients had anterior POP, 81.5% apical POP and 22% posterior POP. BSC Mesh was placed in anterior surface of the cervix (51.9%) or in posterior surface (48.1%). Overall success rate was 92.6%. Objective cure at overall compartments was 74.1%, and subjective cure was 92.6%. 7 patients presented anatomical POP recurrence (25.9%) and 2 patients presented clinical POP recurrence, referred as bulking symptoms (7.4%). Laparoscopic colposacropexy was performed in both. Low rate of complications was observed: 1 hematoma, 1 transient voiding dysfunction and 1 vaginal granuloma. No mesh complications have been detected. Continence was assessed. Of 10 patients (37%) with preoperative stress urinary incontinence (SUI), 5 patients who received a mild urethral sling were dry. 4 patients were cured with colporrhaphy and 1 patient is still with SUI. 3 patients developed SUI (11%) postoperative. Of 12 patients (44%) with urge urinary incontinence (UUI), 5 patients were cured after surgery (42%). No patients developed UUI de novo.11 patients had recurrent UTI (40.7%). 5 patients had no more UTI (45%) after surgery. Patient satisfaction was assessed with visual analogical scale: 7.6.

Conclusion: Uterine-sparing surgery is an effective and safe procedure, with low rate and grade of complications. This technique offers good anatomical correction with significant improvement in symptoms and high patient satisfaction.

UP-121

Bladder Pain Syndrome/Interstitial Cystitis in Contemporary United Kingdom (UK) Practice: Outcomes of Phenotype-Directed Management

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Introduction and Objective: Bladder pain syndrome/interstitial cystitis (BPS/IC) is a heterogeneous disorder with considerable variation in management worldwide due to divergent guideline recommendations, leading to delayed diagnosis. Investigating the prevalence of different BPS phenotypes and the outcomes of phenotype-directed management would enable optimisation and standardisation of therapy and inform future research efforts. We describe the management of a contemporary cohort of patients with BPS/IC in the UK.

Materials and Methods: Retrospective analysis of all patients with BPS/IC from Jan 2015 - Nov 2018. Data on demographic details, investigation and treatments were collected. Outcomes of patients who underwent phenotype-directed management with laser ablation to Hunner's lesions were collected using the Global Response Assessment (GRA) tool.

Results: There were 163 patients (mean age of 43 years (20 – 85)) included; 78% were female and patients had experienced symptoms for an average of 6 years (1 – 30). 83% of patients had pelvic imaging – 44% ultrasound, 42% MRI and 14% CT. Imaging was abnormal in 5 patients (4%). 14% had Hunner's lesions and 55% were moderately/markedly improved after laser ablation with a mean duration of effect of 10 months. ESSIC findings and outcomes of laser ablation are summarised in Table 1.

UP.121, Table 1.

	N (%)	Mean bladder capacity under GA (ml)	ESSIC C on histopathology, N (%)	Markedly/moderately improved at 3 months, N (%)	Mean duration of efficacy (months)	Number of patients having repeat treatments, N (%)
ESSIC 1	91 (59%)	709 (100-1800)	5 (5%)			
ESSIC 2	41 (26%)	607 (180-1000)	10 (24%)			
ESSIC 3 (Hunner's lesions)	22 (14%)	373 (175-650)	17 (77%)			
Laser ablation of Hunner's lesions	22 (100%)			12 (55%)	10 (3-36)	6 (27%)

Conclusion: The presence of Hunner's lesions in patients with BPS/IC is not uncommon. Pelvic imaging rarely identifies any cause for pain and so cystoscopy under anaesthesia is essential for accurate phenotyping. Phenotype-directed management with Holmium laser ablation to Hunner's lesions has good short-term efficacy in improving pain, but patients often require repeat treatments.

UP-122

Long Term Urinary Continence and Sexual Outcomes Following Successful Vesicovaginal Fistula (VVF) Repair

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Introduction and Objective: Various repairs have been described for vesicovaginal fistula (VVF); however, there is a paucity of information on long term continence and sexual function outcomes following successful VVF repair. We set out to analyse the long-term urinary continence and sexual outcomes in patients with successful VVF repair at our institute.

Materials and Methods: We retrospectively analyzed women who underwent VVF repair between 2011 and 2018. Preoperative, operative and postoperative details were recorded from electronic data software. The individual couple were called in person for the follow-up. Sexual satisfaction score was assessed using a verbal rating scale (Score: 0-not satisfied; 1-partially satisfied; 2-satisfied and 3-very satisfied).

Results: A total of 83 patients underwent VVF repair with a mean age of 37 years (range 19 to 58 years). The most common cause of VVF was hysterectomy 67.5% (56 patients) followed by obstetric cause in 27.7% (23 patients). Thirty-eight patients (45.8%) had previous failed VVF repairs. The fistula diameter ranged from 0.3 to 3 cm with a mean size of 1.2 cm. The fistulae were found at supra-trigonal and trigonal regions in 84.3% (70 patients) and 15.7% (13 patients) respectively. Forty-eight patients (57.8%) underwent a transvaginal approach, 26 patients (31.3%) had an abdominal approach and 6 patients (8.4%) had laser welding. Two patients underwent minimally invasive approach (1 patient laparoscopic-assisted and other robotic-assisted). Two patients required ureteric reimplantation. The mean follow-up duration was 34.9 months (range 3 to 84 months). VVF repair was successful in 67 patients (80.7%). Postoperative de novo stress and urge incontinence were noted in 12% (10 patients) and 8.4% (7 patients) respectively. Sixty-six patients (79.5%) completed the sexual satisfaction score in the follow-up. Seven patients (10.6%) reported sexual dysfunction (3 patients-not satisfied and 4 patients-partially satisfied). The factors affecting sexual function included vaginismus, fear of recurrence, decreased vaginal sensation and urine leakage during coitus.

Conclusion: Although a subset of patients developed de novo urinary incontinence and sexual dysfunction, our data on VVF repair suggests comparable long-term continence and sexual function outcomes.

UP-123

Outcomes of Artificial Urinary Sphincter in Women with Neurologic Stress Urinary Incontinence: Long-Term Follow-Up

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Introduction and Objective: Artificial Urinary Sphincter (AUS) in neurologic women patients are known to give good satisfaction rates and good functional outcomes but its democratization remains hard due to the technical difficulty of its implantation. To report the outcomes of AUS in women with neurologic stress urinary incontinence resulting from intrinsic sphincter deficiency since the first implantation in 1994.

Materials and Methods: The charts of female patients with moderate to severe stress urinary incontinence who underwent open artificial urinary sphincter implantation between November 1994 and December 2018 were reviewed retrospectively. All patients were operated on by a single experienced surgeon through an open retropubic approach with systematic bladder incision until 2007 and then laparoscopically. Primary endpoint was postoperative continence categorized as complete continence (no pads used), improved incontinence or unchanged incontinence.

Results: Twenty-four women (mean age: 55 years, range: 18-77) underwent AUS implantation. At the last follow-up (mean follow-up: 11 years; range: 0-22), 8 (33.3%) initial AUS remained in situ and 9 (37.5%) patients had at least one revision or reimplantation. Thirteen patients (54.2%) were fully continent, nine (37.5%) had improved incontinence and 2 (8.3%) had unchanged continence. Of the 17 patients with an AUS remaining at the last follow-up, 13 patients (76.4%) were fully continent, 3 (17.6%) had improved incontinence and 1 (5.9%) had unchanged continence. Seven explanations (29.1%) and two revisions (8.3%) occurred. The average time without explanation or revision was 9.1 and 8.5 years, respectively.

Conclusion: In our experience, AUS is a good option for women with moderate to severe neurologic stress urinary incontinence, with good long-term outcomes.

UP-124

Examination of Mid-Urethral Sling (MUS) for Elderly Patients Over 75 Years Old

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Introduction and Objective: Stress urinary incontinence (SUI) is more common in elderly women and MUS is a gold standard procedure for SUI. We conducted a clinical study on MUS for elderly people over 75 years of age.

Materials and Methods: We included 82 SUI patients who underwent MUS (81 TOT, 1 TVT) between August 2009 and January 2019 at our hospital and followed up more than 1 month. The subjective symptoms and lower urinary tract function before and after surgery were evaluated by 56 people under the age of 75, and 26 over the age of 75.

Results: The preoperative ICIQ-SF, OABSS, and QOL scores were not significantly different between the two groups. The difference was not seen in the preoperative maximum urinary flow rate either, but there was significantly much residual urine volume in 75 years old or more (2.97 ± 5.46 vs. 19 ± 29.6 mL, $p<0.05$). Although there was no difference in the operation time, there was a significant increase in blood loss before age 75 (22.31 ± 26.8 vs 10.9 ± 18.4 mL, $p<0.05$). Postoperative ICIQ-SF, maximum urine flow rate and residual urine volume did not differ between the two groups. Urinary urge incontinence was 15 (26.8%) under age 75 and 11 (42.3%) over age 75 ($p= 0.16$) and dysuria was 8 (14.3%) and 4 (15.3%), and there was no difference ($p= 0.89$). Postoperative urinary tract infections were similar in both groups ($p= 0.78$). Limitations include retrospective design and data from single institute.

Conclusion: The elderly patients had more residual urine before surgery, but the rate of postoperative dysuria did not differ from those under the age of 75. Mid-urethral sling is also indicated for elderly patients with stress urinary incontinence.

UP-125

Review of Clinical Experience on Biomaterials and Tissue Engineering of Urinary Bladder

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Introduction and Objective: In recent pre-clinical studies, biomaterials and bladder tissue engineering has shown promising outcomes when addressing the need for bladder tissue replacement. To date, multiple clinical experiences have been reported. Herein, we aim to review and summarize the reported clinical experience of biomaterial usage and tissue engineering of the urinary bladder.

Materials and Methods: A systematic literature search was performed on Feb 2019 to identify clinical reports on biomaterials for urinary bladder replacement or augmentation and clinical experiences with bladder tissue engineering. We identified and reviewed human studies using biomaterials and tissue engineered bladder as bladder substitutes or augmentation implants. The studies were then summarized for each respective procedure indication, technique, follow-up period, outcome and important findings of the studies.

Results: An extensive literature search identified 25 studies of case reports and case series with a cumulative clinical experience of 222 patients. Various biomaterials and tissue engineered bladder were used, including plastic/ polyethylene mold, preserved dog bladder, gelatine sponge, Japanese paper with Nobecutane, lyophilized human dura, bovine pericardium, amniotic membrane, small intestinal mucosa, and bladder tissue engineering with autologous cell seeded biodegradable scaffolds. However, overall clinical experiences including the outcomes and safety reports were not satisfactory enough to replace enterocystoplasty.

Conclusion: To date several clinical experiences of biomaterials and tissue engineered bladder have been reported; however, various studies have reported non-satisfactory outcomes. Further technological advancements and a better understanding is needed to advance bladder tissue engineering as a future promising management option for patients requiring bladder drainage.

UP-126

Evaluation in Management of Renal Stone from Inches to Millimeters and From High Mortality to Day Care Surgery

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Introduction and Objective: First description of stones are found in Hindu writing in Sushrut Sanhita from ancient India. Since than evaluation in stone management goes in parallel with civilization and incision become any of few millimeters from time honored incisions of inches along with reduced mortality and morbidity.

Results: History: Gustav Simon perform first nephrectomy for fistula with stone disease in 1869. In 1873 first pyelotomy was done by Heinecke. In 1881 first nephrolithotomy was done by Le Denta. Czerny advised to suture nephrectomy incision in 1887. Bardenheur was the first to perform partial nephrectomy for stone disease. In early 1900 Max Brodel proposed avascular plan in kidney, and on basis of that in 1965 Smith & Boyce performed first anatrophic nephrolithotomy for staghorn stones. Until now which is considered as standard method for huge staghorn calculus. In 1967 Gilvenate performed first extended pyelolithotomy. In 1941 Rupel & Brown doing first nephrostomy by using rigid cystoscope. 1955 Goodwin from UCLA put first nephrostomy. In 1976 Fernstom and Johansen removed stone percutaneously and made the foundation of modern-day renal stone surgery. Kurt Amplatz and Arthur Smith strengthened the foundation for PCNL. Wickham performed tubeless PCNL which was popularized by Balmen in 1987. Then miniperc with small tract and small orifice was performed. In 2013 Dr. Janak Desai from India popularized ultraminiperc by doing PCNL with 12 Fr. Dilation, and later on Dr. Desai performed the first miniperc with 18 gauze needle and laser.

Conclusion: With the advancement of optics, energy and miniutunsation of instruments in last few decades major evolutionary changes have done in management of renal stone disease and it can be performed now with only of few mm invasion and without significant morbidity as day care surgery.

UP-127

Percutaneous Nephrostomies in Advanced Pelvic Malignancies Causing Ureteric Obstruction: Prolonging Life or Delaying Death?

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Introduction and Objective: The optimal management of patients with ureteric obstruction in advanced malignancy is unclear. The treatment is associated with complications and frequent readmissions. How the patients' quality of life is affected by a nephrostomy and how many of these patients undergo further oncological treatment remains uncertain. The objective of this retrospective multicentre study was to look at the outcomes of patients who had percutaneous nephrostomy for malignancy.

Materials and Methods: We identified patients who had a nephrostomy inserted for ureteric obstruction due to malignancy at our institution from Jan 2015 to Dec 2018. We obtained data retrospectively from our electronic patient record system. Patients who had nephrostomy insertion for other causes such as ureteric calculi or injury were excluded from the study.

Results: 105 patients (55 male and 50 female) underwent nephrostomy insertion during this time interval. Average age was 68.8 (range 30-93) years. 51.42% patients (n=54) had urological malignancies (bladder and or prostate cancer) and 40.97 % (n=43) had non-urological pelvic malignancies (colorectal, gynaecological) and the rest 7.61% (n=8) other malignancies (testis, pancreatic, haematological). The median LOS was 14 days (range 1-104 days) post procedure and 39.04% (n=41) had at least one 30-day readmission to hospital. The average starting Creatinine levels was 348 mmol/L (range 49-1133) and the average creatinine at discharge was 170 mmol/L (range 44-651). Although the average change in the creatinine (190 mmol/L) is statistically significant ($p<0.001$) it did not seem to prolong life of the patients. Only 24.76% (n=26) patients were alive (all-cause mortality) at the end of the 4-year period with an average life expectancy of 139 days, in those who died following nephrostomy. Interestingly after nephrostomy insertion only 30.47% (n=32) patients underwent further oncological treatment as the rest were too frail to undergo any chemotherapy.

Conclusion: In our series most patients who had nephrostomy insertion for ureteric obstruction due to malignancy had no further oncological treatment following insertion. Percutaneous nephrostomy is a procedure not without associated morbidity and does not always prolong survival. Given the associated poor prognosis in cases of advanced malignancy, we advocate multi-disciplinary approaches to decision-making in terms of nephrostomy insertion.

UP-128

Whole-Body MRI vs Bone Scan in Staging Prostate Cancer: A District General Hospital Experience

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Introduction and Objective: Most district general hospitals (DGHs) in the UK have MRI facilities; fewer have a nuclear medicine department that can perform bone scans (BS). On a background of several recent meta-analyses that have shown whole-body MRI (WB-MRI) performs better than BS in the detection of metastatic prostate cancer (PCa), we examine whether an advantage exists in performing (WB-MRI) instead of (BS) for staging PCa in a DGH.

Materials and Methods: We conducted a retrospective review of patients that had both a BS and WB-MRI between for the purpose of detecting prostate cancer metastases. The metastatic disease detection rate for each modality was compared and the impact of the WB-MRI on clinical management was assessed. The cost and time taken to perform the different scans was also evaluated.

Results: 12 patients had a WB-MRI within 17 days (median time) of a BS. BS detected metastases in 4 patients (33%). WB-MRI detected metastases in 10 patients (83%). In the 4 cases, where both BS and WB-MRI detected metastases, WB-MRI identified more numerous lesions in 2 patients. The multidisciplinary team management plan was changed in 6 cases (50%) by the results of a WB-MRI. WB-MRI was performed in 1 hour in all cases. BS was performed in 4-6 hours. The cost of the two scans was comparable.

Conclusion: WB-MRI was more sensitive than BS in detecting metastatic PCa, consistent with the published data. WB-MRI not only has superior diagnostic performance but takes less time to perform and does not involve any radiation exposure. This data suggests there may be value in performing WB-MRI instead of BS as part of 'single-step detection' of metastatic PCa. We do not know of any other UK data that has been obtained in this setting.

UP-129

PSMA for the Surgical Oncologist: Interpreting Expression Beyond the Prostate

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Introduction and Objective: The use of prostate-specific membrane antigen (PSMA) radiotracer in positron emission tomography (PET) has been successfully incorporated into the clinical management of prostate cancer. However, PSMA tracer uptake is not limited to prostate cancer tissue.

Materials and Methods: We present studies exploring PSMA expression beyond the prostate gland using techniques of ^{68}Ga-PSMA PET imaging. These studies demonstrate potential utility for uptake of PSMA tracer in patients with non-prostatic cancers.

Results: PSMA has been detected in other normal and neoplastic organs, as well as the vasculature associated with many other solid tumours. Its expression has been found on normal cells in varying concentrations, for example in benign fractures. Immunohistochemistry studies have shown PSMA to be expressed in the kidney, testis, ovary, brain, salivary gland, small intestine, colon, liver, spleen, breast and skeletal muscle, as well as malignancies of these tissues.

Conclusion: These findings are important for the surgical oncologist assessing a patients ^{68}Ga-PSMA PET imaging for metastatic prostate cancer.

UP-130

Scrotal Ultrasonography in the Management of Male Infertility – The Experience in a South-Western Nigerian Hospital

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Introduction and Objective: Male factor infertility accounts for 40% of the causes of infertility of a couple. Due to its accessibility and superficial location of its contents, the scrotum lends itself to splendid ultrasonographic evaluation. Scrotal ultrasound (USS) may be useful in the evaluation of male factor infertility. We present a one-year review of the scrotal ultrasound scans performed at the tertiary center in Ibadan, Southwestern region of Nigeria.

Materials and Methods: All scrotal ultrasound scan reports between April 2017 and May 2018 were retrieved from the electronic records of the institution. The data was analyzed and presented with simple percentages and means.

Results: One hundred and seventy (68%) of 248 scans performed in the period were available for review. The mean age of 35.9 ± 14.1 years, the most frequent indication for a scrotal ultrasound scan was infertility (59%). The testicular sizes showed small volume testes in 35% and 41% of the adults (n=151) on the right and left respectively. The mean peri-testicular vein diameters on the right were 2.597±0.92mm pre-Valsalva and 2.936±1.03mm post-Valsalva; while on the left, they were 2.797±0.92mm and 3.142±1.02mm pre- and post-Valsalva respectively. There was a diagnostic rate of 49% of varicoceles. There was no consensus cut-off diameter for the diagnosis of varicoceles.

Conclusion: Scrotal ultrasonography may play a central role in the evaluation of male factor infertility. We recommend that a consensus cut-off vein diameter of 3.0mm for diagnosing varicoceles to avoid over-diagnosis. However, this should be done in collaboration with the urologists.

UP-131

Initial Experience of Tc-PSMA SPECT in Prostate Cancer

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Introduction and Objective: PSMA-PET has rapidly emerged as a critical element in the assessment of prostate cancer. Tc-PSMA-SPECT offers a lower cost, more readily available alternative to PSMA-PET, given that SPECT scanners are widely available, while PET scanners may not be. In New Zealand PSMA-PET is not funded by the public health system and is beyond the financial reach of many patients. SPECT scanners are available within the public funded system, but despite this Tc-PSMA SPECT is not yet widely utilised. In addition, Tc-PSMA offers the opportunity for radio-isotope guided salvage surgery. We sought to review our units experience of Tc-PSMA-SPECT, including indications for and impact of the study on patient treatment pathway.

Materials and Methods: Data was collected prospectively as part of an ongoing audit into the effectiveness of PSMA-SPECT between June 2018 and April 2019. Indications varied but broadly fell into assessment prior to A) Definitive curative therapy in high risk localised prostate cancer B) Recurrence after definitive therapy C) Recurrence after salvage radiotherapy D) Atypical cases and E) Radio-guided salvage nodal dissection.

Results: Nineteen patients underwent a 99Tc-PSMA-SPECT. PSA at study varied from 0.1 to 200. A) Prior to definitive curative therapy n =8. PSA 4.5-27. Nodal metastatic disease was identified in 5/8 including in the patient with PSA =4.5. In 1/8 a false positive node was identified. Subsequent Radical Prostatectomy was node negative and patient is biochemically cured. B and C) Post-therapy n= 6. PSA ranged from 0.1-21. The lowest PSA with a positive scan was at PSA=0.1 with local recurrence in the prostatic bed. 5/6 results of SPECT affected therapy decisions. D) 4 atypical cases were evaluated. These included patients with indeterminate radiology (MRI, bone scan and CT) in whom SPECT clearly identified metastatic disease and allowed appropriate therapy choices (stereotactic salvage radiotherapy). One patient presented with a P.E, PSA of 80 and only osteolytic lesions on CT. His Tc-PSMA-SPECT was extremely positive, clarifying diagnosis and treatment choices. E) radio-guided salvage nodal dissection was performed on n=1 patient using Tc-99-PSMA ligand to direct surgery using intraoperative Geiger counter; 1-year post surgery patient remains biochemically cured.

Conclusion: Tc-PSMA -SPECT is a valid, extremely useful tool to guide rational treatment in men with high risk prostate cancer, who can harbour unexpected nodal disease, in men with recurrent disease and in atypical presentations. It was successfully used in radio-guided salvage nodal surgery and provides an affordable alternative to PSMA-PET. Uptake of PSMA-SPECT should be encouraged.

UP-132

Treatment of Severe Hemorrhage After Percutaneous Nephrolithotomy by Selective Renal Artery Embolization

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Introduction and Objective: Summarize renal angiographic manifestation and data about selective renal artery embolization (SRAE) of severe hemorrhage after percutaneous nephrolithotomy (PCNL), to evaluate the efficiency and safety of SRAE applied for severe hemorrhage after PCNL.

Materials and Methods: We retrospectively reviewed the clinical data of 35 patients who suffered severe hemorrhage after underwent PCNL and received SRAE from January 2005 to December 2015.

Results: 36 bleeding kidneys of 35 patients received renal angiography and subsequent SRAE. 44 person-time results of renal angiography show 20 pseudo, 16 patching, 6 arteriovenous fistula, 2 negative angiographies. Bleeding of 28 patients ceased after once SRAE; 6 patients after twice embolization; 1 patient after thrice embolization. Patients were followed up after SRAE, the results show slightly increased creatine in 5 patients and subsequently come back to the normal or the preoperative level within 3 weeks. The renal function of the other patients remains normal.

Conclusion: The common reason for severe hemorrhage after PCNL is pseudoaneurysm. SRAE is a safe and effective treatment for severe hemorrhage after PCNL, which has little influence on renal function. Timely and effective SRAE is essential for the reservation of nephron.

UP-133

Reproducibility and Interobserver Variability of the R.E.N.A.L. Nephrometry Score: Senior Versus Junior Radiologists

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Introduction and Objective: To assess the reproducibility and interobserver variability for applying R.E.N.A.L. nephrometry scoring system.

Materials and Methods: Two senior consultant radiologists (10 years of experience) and 2 junior radiologists (experience less than 5 years) were given task to retrospectively analyze 50 consecutive patients with renal masses, between 2017 and 2018, using the R.E.N.A.L. nephrometry score (RENAL-NS), which is a complexity scoring tool based on the evaluation of five anatomical factors of the renal tumor, as evaluated on computed tomography imaging: Radius(R), Exophytic/endophytic properties (E), Nearness to the collecting system (N), Anterior or posterior descriptor (A), and Location relative to the polar line (L). Tumor complexity had to be graded as low, intermediate, or high. The interobserver variability was calculated for the total score as well as for the score for each fac-

tor. Surgical excision of the tumors was used as the standard of reference.

Results: The interobserver variability for each of the RENAL-NS parameters, respectively, a hilar location, and the total score was 96%, 81%, 97%, 85%, 82%, 83%, and 91% of patients, corresponding to kappa values of 0.92, 0.64, 0.98, 0.74, 0.71, 0.75, and 0.84, respectively. The Nearness, Radius, and total score had shown the best agreement. For the cases that were discordant in terms of the final score, no major implications were seen in surgical planning.

Conclusion: The RENAL-NS is a useful systematic tool for assessment of the anatomical features of the renal tumors. It is easily reproducible and applicable by different radiologists of different durations of experience.

UP-134

Which One is the Easiest and Quickest Scoring System to Predict Percutaneous Nephrolithotomy Outcomes by Junior Surgeons? A Comparison Among Guy's Stone Score, S.T.O.N.E Score, And CROES Nomogram

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Introduction and Objective: To compare the time taken by young urologists for application and the capacity of the nomograms to predict the success of S.T.O.N.E. Nephrolithometry (STONE), Guy's Stone Score (GSS) and Clinical Research Office of the Endourological Society nephrolithometric nomogram

(CROES) of percutaneous nephrolithotomy (PCNL).

Materials and Methods: We studied 50 patients who underwent PCNL by 2 senior surgeons (experience 0f 10 years in endourology) between 2017 and 2018. A radiologist calculated STONE and CROES based on preoperative non-contrast computed tomography (CT) images and clinical data. Then 10 junior surgeons were given task to review all images and assigned scores. We compared the application time of each nomogram. We used ANOVA t test to compare the time taken for scoring the by different methods describe an analysis of variance ford above.

Results: The stone free rate was 82.7% and complications occurred in 8.7% of cases (mostly clavien grades 1-2). The average operative time was 109 minutes. Mean application time was significantly lower for the GSS (34.5 seconds) when compared to 236.2 seconds for STONE and 245.4 seconds for CROES ($p<0.001$). There was no significant difference among the GSS (AUC=0.653), STONE (AUC=0.563) and CROES (AUC=0.641) in the ability to predict immediate success of PCNL.

Conclusion: All three nomograms had shown similar ability to predict success of PCNL, however the GSS was the quickest to be applied, what is an important issue for routine clinical use when counseling patients who are candidates to PCNL.

UP-135

Accuracy of Multi-Parametric Magnetic Resonance Imaging in Diagnosing Clinically Significant (≥Gleason3+4) Prostate Cancer – Our Experience of a UK, District General Hospital

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Introduction and Objective: Prostate multi-parametric resonance imaging (mp-MRI) is an essential imaging modality used to investigate suspected prostate cancer (CaP). EAU guidelines recommend the combined use of both mp-MRI and prostate biopsy. We present our results of mp-MRI accuracy in diagnosing clinically significant (Gleason≥3+4) CaP.

Materials and Methods: Data was collectively prospectively from 1st January 2016 to 31st December 2017 from all patients who had mp-MRI followed by either transrectal ultrasound-guided prostate biopsy (TRUS-biopsy) or TransPerineal Template biopsy of prostate (TPT-biopsy). Electronic patient records, histology and radiology imaging software were used to collate data.

Results: A total of 170 patients were identified. n-131 mp-MRIs were reported as abnormal, of which n-80 (61.1%) had clinically significant CaP confirmed on biopsy. n-51 (38.9%) patients with mp-MRI reported as abnormal, had either clinically insignificant CaP (Gleason? 3+3) n-8 or benign prostatic histology n-43. A total of n-39 patients had a mp-MRI reported as no suspicious lesion. However, n-19 (48.7%) of these patients had clinically significant CaP detected on biopsies.

Conclusion: Our study shows mp-MRI has a high sensitivity of 80.8% and low specificity of 28.2% in diagnosing clinically significant CaP. This is comparable with findings of PROMIS trial (sensitivity 93% and specificity 41%). Having dedicated uro-radiologists, Prostate Imaging - Reporting and Data System (PI-RADS) and access to 3 TESLA MRI scanners will help increase diagnostic accuracy.

UP-136

Diagnostic Performance of Diffusion-Weighted Whole-Body Imaging with Background Body Signal Suppression for Detecting Oligoprogressive Prostate Cancer in Patients Undergoing Androgen Deprivation Therapy

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Introduction and Objective: In prostate cancer (PCa) patients receiving androgen deprivation therapy (ADT), disease progression occurs not necessarily in a systemic manner but in only a limited number of regions, what is called oligoprogression, in certain cases. Several reports have suggested that metastases-directed therapy for oligoprogressive PCa can delay the start of subsequent systemic therapy such as cytotoxic chemotherapy or androgen receptor axis-targeted agents. To depict oligoprogressive disease, prostate-specific membrane antigen positron emission tomography/computed tomography (PSMA-PET/CT) has been demonstrated with much higher diagnostic sensitivity compared to the conventional imaging, such as CT or bone scintigraphy. In countries, including Japan, where PSMA-PET/CT is currently unavailable, diffusion-weighted whole-body imaging with background body signal suppression (DWIBS) may offer an alternative choice to detect oligoprogressive PCa. We evaluated diagnostic performance of DWIBS for de tecting oligoprogressive disease among PCa patients receiving ADT.

Materials and Methods: A total of 41 asymptomatic PCa patients under ADT with suspicion of progression underwent DWIBS between 2015 and 2018. DWIBS findings and prostate-specific antigen (PSA) levels at the time of DWIBS were collected retrospectively.

Results: A total of 72 DWIBS studies were performed with median (range) number of studies per patient 2 (1 to 3) and median (range) PSA at the time of DWIBS 2.95 (<0.01 to 251) ng/mL. DWIBS revealed active sites more than 5, 5 or less and no active site in 27 (38%), 34 (47%) and 11 (15%) studies, respectively. The highest PSA at the time of negative DWIBS was 2.4 ng/mL, while DWIBS depicted progressive sites even in patients with undetectable PSA. When limited to PSA 2 ng/mL or above, DWIBS was positive in 41 of 42 (98%) studies. Among the patients with 5 or less progressive sites, progressive site-directed therapy was given to 13 of the 34 DWIBS-depicted progressive sites, and clinical response was achieved in 8 sites.

Conclusion: In the presence of suspicion of disease progression regardless of PSA level, DWIBS can be used to detect oligoprogression in some asymptomatic PCa patients undergoing ADT. Further studies are warranted to reveal organ-specific diagnostic performance of DWIBS in these patients.

UP-137

Computer Generated Tumor Volume and Surface Area as Predictors of Pathological Tumor Grade and Stage in Renal Cell Carcinoma

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Introduction and Objective: Pre-operative decision making for renal cell carcinoma (RCC) has traditionally relied on tumor size as a predictor of pathological and long-term oncological outcomes. We aimed to assess the performance of computer generated (CG) tumor volume and surface area on CT in predicting presence of RCC on final pathology, high grade tumor (Fuhrman 3-4) and high stage tumor (pT3-4), compared to manually generated (HG) tumor diameter alone.

Materials and Methods: Retrospective review of 544 patients who underwent nephrectomy following

late arterial phase CT imaging for suspected RCC at a single institution between 2010 and 2018. Patients with angiomyolipoma, tumor thrombus, non-oncological indications for nephrectomy and incomplete or missing imaging were excluded. After manually delineating tumors on CT, we developed an algorithm to calculate CG tumor volume and surface area. Tumor diameter was manually measured (HG) on CT by five medical professionals, independently. We used receiver operating characteristic curve (ROC) analysis to quantify discriminative ability of each parameter.

Results: CT imaging was available for 195 patients. 183 (94%) had malignant tumor, including 60 (31%) with high stage (pT3 or greater) disease. CG volume (AUC 0.68) and CG surface area (0.67) showed moderate discrimination for cancer, compared to HG diameter (0.71). CG volume (0.79) and CG surface area (0.79) were good predictors of high stage tumor, along with HG diameter (0.82). CG volume (0.74) and CG surface area (0.73) were also good predictors of high-grade tumor, comparable with HG diameter (0.75).

Conclusion: CG tumor volume and surface area offer good discrimination of high grade and high pathological stage RCC, at rates comparable with HG measured tumor diameter. Deep learning automatically segments tumor and kidney, calculating these parameters without human capital. These are promising findings which may improve with refinement of our algorithm.

UP-138

Efficacy of MRI and Targeted Biopsy in Detecting Clinically Significant Prostate Cancer in Everyday Clinical Practice: A Comparison with Radical Prostatectomy Histology

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Introduction and Objective: Multiparametric MRI (MP-MRI) is widely accepted as the key imaging modality for detection, facilitation of image-guided biopsy and staging of prostate cancer with a high sensitivity for clinically significant disease. The introduction of the Prostate Imaging Reporting and Data System (PIRADS) classification for MRI reporting has further standardised MRI reporting. Whilst MP-MRI improves the diagnostic accuracy of targeted biopsy for prostate cancer, it is not without its limitations. Much of the published literature on this topic comes from specialised centres - we report a snapshot of clinical experience at a single centre routinely using pre-biopsy MP-MRI.

Materials and Methods: 112 consecutive cases over 16 months at a single centre were analysed. Only cases for which a complete dataset was available were included for analysis; pre-biopsy MP-MRI with PIRADS score, image-guided biopsy (TRUS or template), and final radical prostatectomy (RP) specimen histology. Targeted template biopsies were performed with approximately 2-3 cores from the target lesion followed by systematic sampling of the rest of the prostate with 3-4 cores per quadrant.

Results: PIRADS 4/5 lesions had a positive predictive value for high grade prostate cancer (98.7%). 14 (12.5%) clinically significant lesions did not have a target identified on pre-biopsy MP-MRI. The lesions with no target had a mean PSA density of 0.21 (0.07-0.4). MRI staging was correct in 40% of cases (under-staged in 32% and over-staged in 8%), with 11 cases (9.8%) of T3b disease not identified on initial imaging. Overall positive biopsy concordance with MRI target was 91%, as was location of disease on MRI when compared with final RP histology (79%). Upstaging on final RP histology compared with image-guided biopsy histology occurred in 26%.

Conclusion: MP-MRI has a high positive predictive value for clinically significant disease. Biopsy/MRI concordance rate is high for PIRADS 4/5 lesions. Caution should be taken if considering the use of MR-MRI to rule out the need for biopsy, as clinically significant lesions did not have a target identified on MRI in 12.5%. Even when employing the gold-standard approach of target biopsy plus systematic sampling on biopsy, upstaging from biopsy histology to final RP histology specimen still occurs in over a quarter of patients.

UP-139

Pushing the Margins: A Case Series on Tumescent Magnetic Resonance Imaging for Local Staging of Penile Tumours

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Introduction and Objective: To assess the validity of using magnetic resonance imaging (MRI) combined with artificial erection for predicting local staging of penile tumours.

Materials and Methods: Ten patients with primary penile lesions underwent prospective evaluation. Tumescence was achieved by injecting 10 ug of prostaglandin E1 into the corpora cavernosa. T1/T2 weighted MRI with and without contrast was performed using a 3 Tesla magnet. Two experienced uro-radiologists independently reviewed the imaging and predicted a tumour grade. Surgical excision was performed based on clinical and MRI findings and a comparison was made between MRI predictions and histopathological staging of the tissue.

Results: The histological diagnosis was squamous cell carcinoma (SCC) in 7 patients, transitional cell carcinoma (TCC) in 2 patients, and penile intraepithelial neoplasia (PeIN) in 1 patient. The MRI and pathological staging coincided in 3/10 patients. The remaining patients had discordant MRI and pathological staging, with MRI over-staging T2 lesions in 2 cases, one with pT1 and PeIN disease. MRI lesions were under-staged in 5 cases, with all tumours being reported as T1 and pathological staging of pT2 in 3 cases and pT3 in 3 cases. All cases with MRI under-staging had clear margins upon histopathological review.

Conclusion: This is the first Australian study exploring the role of tumescent MRI to stage primary penile tumours prior to excision. In this cohort, MRI predictions resulted in under-staging of tumours in 50% of cases. Further studies and radiological experience is needed to evaluate the utility of this technique for predicting the stage of penile and urothelial tumours. In the future, tumescent MRI may be used to inform penile preserving surgery.

UP-140

Spontaneous Resolution of Renal Pseudo Aneurysm Following Percutaneous Nephrolithotomy

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Introduction and Objective: Iatrogenic renal pseudoaneurysm is one of the rarest and most serious complications following percutaneous nephrolithotomy. We report a case of lower polar pseudoaneurysm that leads to one episode of severe hematuria following the surgery and resolved spontaneously.

Materials and Methods: A 55 years old gentleman, with multiple lower pole calyceal stones; underwent uneventful prone percutaneous nephrolithotomy, through a lower posterior calyceal puncture. Patients were discharged on the next day of surgery following removal of the nephrostomy tube. Ten days later, the patient was readmitted for severe gross hematuria that was conservatively managed. A CT angiography revealed a 9 mm pseudoaneurysm at the site of the puncture. We decided to perform angio-embolization but was postponed due to technical difficulty due to severe tortious Aorta that necessitates a special angiography catheter.

Results: On the 20th day, angiography was done, that showed resolution of the pseudo-aneurysm and embolization were aborted. 6 months following surgery, the patient didn't manifest any other attack of hematuria.

Conclusion: Although iatrogenic pseudo-aneurysms after PCNL are managed by angio-embolization, still, some cases may resolve spontaneously. A careful follow-up and a ready angiography facility may allow for a save conservative trial.

UP-141

Fine Errors of Bladder Wall Thickness Measurement Have a Significant Impact on the Calculation of Ultrasound-Estimated Bladder Weight

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Introduction and Objective: Over the past decade, the interest in bladder wall thickness (BWT) and detrusor wall thickness (DWT) measurements has grown rapidly. Their potential use as add-ons to uroflowmetry and conventional ultrasonography (U/S), has initiated a quest for their diagnostic validity in different types of lower urinary tract problems in both genders. Due to lack of a consensus in BWT and DWT measurement, ultrasound-estimated bladder weight (UEBW) concept has been advocated as a more reliable measure of bladder wall hypertrophy, because it can be calculated regardless the degree of bladder filling. At

present, there are two acknowledged UEBW calculation methods, the Kojima spheroidal and the Chalana 3-dimensional models. Both rely on the accurate measurement of BWT. We aim to identify if subtle errors in BWT measurement have a significant impact on UEBW calculations.

Materials and Methods: Twenty patients were randomly selected from an overactive bladder patient cohort. The primary endpoint was to identify the range of false BWT measurements outside, which significant changes in UEBW calculation occur. We used the Kojima method and a semi-automatic 3-D model that is based on Chalana's principle. Measurements were performed using the correct BWT and a series of faulty calculations from +0.5mm to -0.5mm using steps of 0.05mm from true BWT. The effect of a fixed 0.5mm BWT error was checked in bladder volumes above and below 250mL and in three UEBW groups (< 35 gr, 36-50 gr, > 51 gr).

Results: BWT measurement errors above 0.25mm cause statistically significant changes in UEWB calculation when a 3-D model is used and errors above 0.15mm when Kojima's method is used. At a fixed BWT error of 0.5mm and bladder volume < 250mL, there is a 23.76% deviation from true UEBW, while at volumes > 250 mL the deviation is 32.72%. The deviation is inversely proportional to the UEBW result, and heavier bladders deviate less.

Conclusion: UEBW is a promising diagnostic tool, but small errors in BWT measurement might cause significant deviation from the true values. A 3-D calculation model appears to minimize such risks.

UP-142

Urologists Awareness of the Microbiome of the Ileum, is it Actually Sterile?

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Introduction and Objective: Urinary diversion using distal ileum has come with the assumption that the contents of the terminal ileum are sterile and consequently bowel preparation is not routinely used preoperatively. Due to this assumption, spillage of ileal contents into the abdominal cavity is no perceived to be a major issue intraoperatively nor is the washout of the conduit perceived as a required step prior to urinary anastomosis. However, if the content of the ileum is not truly sterile, do urologist need to be more cautious about handling the content of the small bowel to prevent post-operative complications? The purpose of this study was twofold; firstly, to establish as microbiome of terminal ileum in cystectomy patients and then to cross reference the microbiome of any post-operative infections to ascertain a causal route.

Materials and Methods: A retrospective review was performed on 23 cystectomy patients. These patients who, at the time of operating the distal ileum was divided and a bacterial swab was taken and sent to the laboratory for culture. A retrospective review of the patient notes was performed to identify any evidence of sepsis. The respective septic screens were reviewed and compared with the intraoperative terminal ileum swab.

Results: The terminal ileum microbiome was consistent with the literatures. Swabs from 3 out of 23 patients grew pathogens. One out of the 23 patients developed post-operative sepsis, which it was identified as urinary source and culture of the urine and swab correlated suggesting the primary source originating in the terminal ileum. No signs of sepsis was identified in the remaining 22 patients.

Conclusion: This study largely supports the concept that the gastrointestinal contents of the terminal ileum are sterile. However, in a small percentage of patients that harbour pathogens in the ileum there are associated negative clinical outcomes. These pathogens were identified on swab after 72 hours, which also correlates with development of many UTIs as described in the literature. This study postulates that swabs taken intraoperatively would allow early identification of pathogens and thus targeted rather than empirical antibiotic therapy.

UP-143

Surgical Management and Outcomes of Adult Acquired Buried Penis with and Without Lichen Sclerosus: A Comparative Analysis

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Introduction and Objective: Adult Acquired Buried Penis (AABP) can present with concomitant Lichen Sclerosus (LS), which is a chronic dermatosis that may affect surgical outcomes. We herein present our institutional management of AABP and evaluate the comparative surgical outcome of patients with or without LS.

Materials and Methods: An IRB approved non-concurrent cohort study was performed for AABP patients who underwent surgical management at our institution from January 1991 to December 2017. Baseline characteristics, clinical variables, associated conditions, surgical and peri-operative outcomes, including success (defined as no further surgical reconstruction required for AABP), satisfactory post-operative erectile function, overall surgical complications (early [< 30 days] and late [> 30 days]) were collected. Patients with and without LS were compared using Fisher-Exact and T-tests to evaluate the statistical differences between the two groups.

Results: A total of 67 AABP patients aged 19 to 79 years old with mean follow-up duration of 16.1 + 20.4 months were included for analysis. Overall surgical success rate was 91%. Overall surgical complication rate was 50.7% (23.9% Clavien-Dindo > 3). Forty-two (62.7%) patients had concomitant LS. Hygiene issues were significantly more common among patients with LS (52% vs 81%, p= 0.026). A higher proportion of patients with LS required STSG procedure as part of their surgical management (60% vs 90%, p= 0.005). There was no difference in surgical success (92% vs 90.5%, p= 1.0), overall complication rate (40% vs 57.1%, p= 0.212), Clavien-Dindo > 3 complications (24% vs 23.8%, p= 1.0) or occurrence of early complications (32% vs 35.7%, p= 0.797) between patients without and with LS, respectively. However, a significantly higher proportion of patients with LS experienced late complications (8% vs 33.3%, p= 0.02), which were mainly related to wound healing. Furthermore, satisfaction with post-operative erectile condition satisfaction was significantly higher among patients with LS (32% vs 59.5%, p= 0.043).

Conclusion: AABP patients with LS seem to behave somewhat differently than their non-LS counterparts. They experience more hygiene issues at baseline and are more likely to require skin graft during surgical treatment. Though overall surgical success and complications rates are similar, they do experience a higher rate of late post-operative complications, mostly related to impaired wound healing. Work on improving wound healing in this population –such as post-operative use of corticosteroid creams – should be pursued.

UP-144

Epididymo-Orchitis as the First Presentation of Brucellosis in an Endemic Area

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Introduction and Objective: Brucellosis, which is also called Mediterranean or Malta fever, is an endemic enzootic disease and can involve various organ systems. It is commonly endemic in the Mediterranean countries and the Middle East. Epididymo-orchitis is a focal form of human brucellosis. Brucella species cause granulomatous orchitis usually presenting as an acute or chronic unilateral swelling of the testis. Patients rarely present to the clinicians with acute scrotum due to Brucellosis Epididymo-Orchitis (BEO) as an initial finding. Our aim is to estimate the prevalence of the BEO among the cases diagnosed with Epididymo-orchitis in our hospital over the last four years.

Materials and Methods: Retrospective study from 2015-2018 involving all cases diagnosed with Epididymo-orchitis in our hospital. A total of 92 cases of Epididymo-orchitis were diagnosed during this period. These cases presented to ER complaining of severe unilateral scrotal pain, swelling, fever and sweating. Local examination showed swollen enlarged testis and epididymis with marked tenderness. Brucella serologic test for both B abortus and B melitensis were requested routinely for all cases of epididymo-orchitis. Scrotal Doppler ultrasonographic examination was requested at initial diagnosis and after 2 weeks to exclude abscess formation.

Results: Out of 92 cases, 8 were diagnosed to have brucellosis (8.7%). The median age of patients was 32 years (range, 18–41 years). All patients had positive history of consuming unpasteurized dairy products, which is a risk factor for brucellosis. The diagnosis of brucellosis was made via positive serological testing results (Brucella abortus and melitensis). One case showed testicular abscess formation. All cases were given combination of tetracycline and rifampicin for 6-12 weeks. Two cases required prolonged hospital stay due to testicular abscess formation in one and development of Brucellosis spondylitis in the other. Gentamycin was added for one week in such cases.

Conclusion: In endemic regions for brucellosis, we have to consider it in the workup of all cases of epididiymo-orchitis. The diagnosis is easy by positive serology tests. Positive cases need special antibiotic combination protocol for longer time and close monitoring for development of local complications or other systemic brucellosis manifestations.

UP-145

Could Platelet to Leucocytic Count Ratio (PLR) Predict Sepsis and Clinical Outcomes in Patients with Emphysematous Pyelonephritis?

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Introduction and Objective: To study risk factors for sepsis and mortality evaluating the role of platelet to leucocytic count ratio (PLR) as a marker for urosepsis and clinical outcomes in cases of emphysematous pyelonephritis (EPN).

Materials and Methods: Patients with EPN were retrospectively reviewed. Patients' age, sex, diabetes mellitus (DM), Body Mass Index (BMI), hydronephrosis, types of EPN, air locules volume, serum creatinine, leucocytic count, and platelet count, PLR, albumin, INR and the line of treatment were analyzed as a risk factor of sepsis. Correlation between PLR and other variables was done using Pearson correlation coefficient. Univariate and multivariate analyses for sepsis and mortality were performed.

Results: Of fifty-four patients, 38 patients had SIRS ≥ 2 criteria on admission. Twenty patients developed sepsis requiring ICU admission. In univariate analysis, male gender, lower BMI, higher INR, higher WBCs count, and lower PLR were associated with sepsis (p= 0.0001, 0.009, 0.04, 0.003 and 0.001, respectively). In multivariate analysis, PLR ≤ 18.4, male sex and BMI ≤ 24.2 were independent risk factors. Lower PLR directly correlated with serum albumin (p= 0.01) and inversely correlated with serum creatinine and random blood glucose level and klebsiella infection (p= 0.001, 0.007 and 0.005, respectively). Also, it was correlated with a higher total score of qSOFA and SOFA (P= 0.02 and 0.04). Lower PLR was independent risk factors for death in EPN patients with (p= 0.003).

Conclusion: EPN is associated with sepsis development. Lower PLR is an independent simple predictor for sepsis and mortality in patients with EPN.

UP-146

Urinary Human Papilloma Virus Infection and Bladder Cancer Risk: A Systematic Review and Meta-Analysis

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Introduction and Objective: Association between human papilloma virus (HPV) infection and risk of bladder cancer (BlCa) remain inconclusive. We carried out a systematic review with meta-analysis of the available case-control studies in order to verify possible differences in the occurrence of HPV infection in urine samples in patients with BlCa and normal subjects.

Materials and Methods: PubMed was used to search for articles published from January 1965 to August 2018 using the key words "bladder cancer" and "HPV". No restrictions to date, language, or article type were applied. Case-control studies reporting Odds Ratio (OR) for HPV infection in urine samples in patients with BlCa and normal subjects were analyzed. The quality of the studies was evaluated by the New Castle Ottawa scale. Data were combined using random effect models. The Cochrane Chi-square (Cochrane Q) statistic and the I-square test were used to analyze heterogeneity. The publication bias was graphically explored through funnel plot, and Duval and Tweedie's "trim-and-fill" test was used to correct possible publication bias.

Results: The selection process yielded only three studies with eligibility criteria for analysis, that gave information on 278 patients with HPV infection in urine and 903 patients without HPV infection in urine. The pooled OR estimated showed that patients with HPV infection in urine exhibit a significantly higher prevalence in BlCa than patients without HPV infection (OR= 2.602, 95%CI: 1.484, 4.56; P= 0.001). We obtained a heterogeneity chi-squared value Q exp= 1.573 (p= 0.456) (I-square= 0%). Funnel plot non suggested a possible publication bias in the analysis. Only one study compared the incidence of HPV infection in urine with HPV infection at the tissue level. A higher incidence of HPV infection was observed in the urine of patients with bladder cancer than in tumor tissue.

Conclusion: The pooled OR value showed a moderate relationship between urinary HPV infection and BlCa. HPV infection in the urine may have a role in carcinogenesis of the bladder tumor. Further well-conducted studies could be useful to confirm this conclusion, and thus be able to identify if the determination of HPV in urine can be considered useful in clinical practice for its use in the diagnosis and follow-up of patients with BlCa.

UP-147

Blood Stream Infections Following TRUS Prostate Biopsy: A 20-Year Analysis of Bacteriology and Antibiotic Sensitivities

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Introduction and Objective: Transrectal ultrasound (TRUS) guided prostate biopsy remains the most common method of prostate cancer diagnosis. Current Australian therapeutic guidelines recommend a single dose of oral ciprofloxacin 1 hour prior to biopsy, however, there still remains a significant risk of post-TRUS sepsis, ICU admission, and death. We aimed to analyse the bloodstream infections following TRUS prostate biopsy in the Australian Capital Territory (ACT) with a focus on bacteriology and antibiotic sensitivities.

Materials and Methods: Analysis of a prospective database of bloodstream infections following TRUS biopsy in the ACT, Australia from 1998 to 2018 was performed. Australian MBS (Medicare Benefit Schedule) database was used to calculate the number of TRUS biopsies performed in the ACT during this period. Data were analysed using SPSS 24.0.

Results: There were 6728 TRUS biopsies performed in the ACT, with 58 culture proven bloodstream infections following biopsy resulting in a 0.08% sepsis rate. The bacteria cultured were E. coli (89%), Klebsiella pneumoniae (5%), Pseudomonas aeruginosa (2%), Morganella morganii (2%) and S. aureus (2%). Bacterial multi-resistance saw an increasing trend in the last 20 years, with 100% of bloodstream pathogens displaying multi-resistance. Cephazolin and gentamicin resistance was 22% and 26% respectively. Ciprofloxacin resistance was present in 36% of cases. There were 3 patients that required ICU care and no resultant mortality.

Conclusion: Bloodstream infections post TRUS biopsy remains low in our Australian centre, however, multi-resistance blood organisms are becoming more prevalent. To adequately account for the emergence of resistance, additional antibiotics administration on top of ciprofloxacin may provide better coverage for prophylaxis. Despite these, our experience suggests that TRUS biopsy could be a safe method for prostate biopsy if done in the controlled hospital setting.

UP-148

Does the Use of Povidone-Iodine Suppository Decrease the Infective Complications of TRUS Guided Prostate Biopsies? A Randomized Prospective Study

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Introduction and Objective: Transrectal ultrasound guided prostate biopsy can lead to urinary tract infections in 3% to 11% and sepsis in 0.1% to 5% of patients. We investigated the prevalence of different organisms among rectal flora in our community, the virulence of the most prevalent one and the effect of combined standard antibiotic prophylaxis with the use of povidone-iodine suppository prior to TRUS guided biopsy of the prostate in decreasing post-biopsy infectious complications.

Materials and Methods: Between December 2016 and September 2017, 50 men were prospectively randomized to povidone-iodine rectal cleansing (50) or no cleansing (50) before transrectal ultrasound guided prostate biopsy. Rectal swab cultures, urinalysis, urine cultures, total leukocytic count and CRP were obtained before transrectal ultrasound guided prostate biopsy. Patients received ciprofloxacin prophylaxis and attended at 1 week follow up visit. Urinalysis, urine cultures, total leukocytic count and CRP were obtained at follow up visit and asked about fever, UTI symptoms and examined for prostatitis and epididymo-orchitis.

Results: Infectious complications were observed in 5 (10%) patients, including 2 (8%) in the treatment group and 3 (12%) in the control group (p= 0.0001). No cases of sepsis were recorded. Mean increase of CRP was higher in control group (P= 0.011). 17 patients among study population had Ciprofloxacin resistant rectal organisms on rectal swab cultures (34%).

Conclusion: Usage of pre TRUS-Bx intrarectal povidone iodine suppository together with standard antibiotic prophylaxis with ciprofloxacin helps decrease post procedure infectious complications and proved to decrease incidence of infection among patients having ciprofloxacin resistant rectal organisms.

UP-149

BCGosis: A Case Report of Delayed Renal Tuberculosis from Intravesical Bacillus Calmette-Guerin

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Introduction and Objective: Intravesical Bacillus Calmette-Guerin (BCG) is a live attenuated vaccine produced from Mycobacterium bovis that is effectively used for the treatment of high-grade non-invasive urothelial carcinoma (UCC). A very rare complication of BCG instillation includes disseminated disease. We report a case of delayed "BCGosis" in a form of renal tuberculosis.

Materials and Methods: A case study of a 75-year-old man was undertaken and relevant background history, examination, and investigative results were reviewed.

Results: A 75-year-old man presented with recurrent fevers up to 39.7°C after maintenance BCG therapy 2 years ago for recurrent high-grade stage T1 UCC. His blood showed acute on chronic renal failure, elevated inflammatory markers with a high C-reactive protein of 140-150, leukocyturia without isolated pathogen and negative blood cultures. Initial CT intravenous pyelogram showed subtle hypoperfusion of left renal cortex suggestive of pyelonephritis. However, despite multiple antibiotic agents, his fevers continued, and further investigations were organised to exclude occult infection. A gallium scan was performed that showed intense focal activity in left renal parenchyma with positive cultures for acid-fast bacilli confirmed renal BCGosis. He was commenced on triple therapy and was discharged home on day 50 of admission. He is being planned for nephroureterectomy as a definitive treatment.

Conclusion: Renal tuberculosis is a rare complication of BCG therapy. This case highlights rare but potential systemic complication of BCG in a patient presenting with pyrexia of unknown origin. A low index of suspicion is required in patients with prior exposure to intravesical BCG to prevent delayed diagnosis and to initiate prompt treatment.

UP-150

Association Between Surgical Site Preparation Agent and Infection Following Flexible Cystoscopy: A Pilot Study

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Introduction and Objective: As per institution protocol, CAUTI and 'Adult Urethral Catheterisation for Acute Care Settings' guidelines were implemented where saline was used as skin preparation agent for flexible cystoscopy. Therefore, we tested for an association between surgical site preparation agents and post cystoscopy infection rates.

Materials and Methods: All patients who underwent flexible cystoscopy in a single institution between January 2017 and July 2018 were classified by skin preparation agents used (saline vs chlorhexidine). Patients who were re-admitted within 7 days following procedure with urinary infection with a pathogen were identified. Contingency tables were analysed using the chi-squared statistic and $p < 0.05$ was considered statistically significant.

Results: A total of 719 patients underwent flexible cystoscopy during the study period; Saline preparation was used in 355 patients (49.4%). There was no difference in mean age (68.6 years vs 68.0 years, p= 0.66) and gender (p= 0.12) in chlorhexidine and saline groups. Post-procedure infection was observed in 8 patients (1.1%); 6 were urosepsis as defined by Sepsis-23 criteria and 2 were urinary tract infection (UTI). Significantly more post-procedure infections occurred in the saline group than the chlorhexidine group (7 vs 1, p= 0.03). There was an increased trend towards urosepsis in saline group (5 vs 1), but this was not significant (p= 0.09). There was no difference in infection rate by operators (p= 0.51) or if stent removal was performed during flexible cystoscopy (p= 0.21).

Conclusion: Post-flexible cystoscopy infection was more common when saline skin preparation was used. A larger randomised study is needed to validate these findings.

UP-151

Prevalence and Clinical Outcome of Extended-Spectrum Beta-Lactamase Pathogen Acute Cystitis

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Introduction and Objective: Acute cystitis is a common infectious disease in women. Acute cystitis with extended-spectrum beta-lactamase pathogen (ESBL) causes an increase of medical cost, an increase of treatment period, changing antibiotics regimen and aggravating of infection to acute pyelonephritis which needs admission treatment. Unlike ESBL in acute pyelonephritis, only a few studies have focused on the prevalence and clinical outcomes of acute cystitis with ESBL. We investigated the prevalence and clinical characteristics of acute cystitis with ESBL in women for out-patients department (OPD).

UP.151, Table 1.

	mean±SD
uncomplicated cystitis (n=44)	
age(year)	63.16±19.17
gross hematuria	8(18%)
uropathogen	E. coli (43, 97.8%)
	K. pneumoniae (1, 2.2%)
antibiotics	PO fosfomycin (15)
	PO cefpodoxime (12)
	PO quinolone (7) (ciprofloxacin:4, levofloxacin:2, moxifloxacin:1)
	none(5)
	ertapenem IV (4)
	ceftriaxone IV (1)
clinical cure	20(45.45)
period for clinical cure (weeks)	7.29±7.77
complicated cystitis (n=9)	
age(year)	60.11±13.39
gross hematuria	0
uropathogen	E. coli (9)
antibiotics	none(5)
	quinolone (4) (ciprofloxacin:3, levofloxacin:1)
clinical cure	1(11.11)
period for clinical cure (weeks)	9

Materials and Methods: We reviewed charts of OPD patients who were diagnosed as acute cystitis between September 1, 2017, and July 31, 2018. We check the presence of complicated cystitis, the presence of hematuria, types of uropathogen, types of treatment, and clinical outcome.

Results: A total of 394 patients who had a diagnostic code for acute cystitis visited OPD and urine culture was performed for 76 patients. 53 patients were diagnosed as acute cystitis with ESBL and confirmed by urine culture. The overall prevalence of acute cystitis with ESBL in OPD patients among OPD acute cystitis patients was 13.45 percentages. 44 patients were diagnosed as uncomplicated cystitis and 9 patients were diagnosed as complicated cystitis. Gross hematuria was recorded in 8 patients who had uncomplicated cystitis. Most of uropathogen were Escherichia coli (E. coli), except Klebsiella pneumoniae in only one patient. Oral Fosfomycin, oral cefpodoxime, oral quinolone, intravenous ertapenem, intravenous ceftriaxone and conservative care were used for cystitis treatment. The clinical cure rate was 45 percentages in uncomplicated cystitis, 11 percentages in complicated cystitis. The average period of clinical cure was 7.29 ± 7.77 weeks in uncomplicated cystitis and 9 weeks in complicated cystitis.

Conclusion: Prevalence of acute cystitis with ESBL is not low. Treatment patterns including choosing antibiotics and follow up strategies are diverse and inconsistent. Further larger studies in community level and multicenter level are needed.

UP-152

Efficacy of Intravesical Botulinum Toxin A as a Treatment to Relieve Symptoms in Adult Patients with Interstitial Cystitis: A Systematic Review

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Introduction and Objective: Interstitial cystitis/bladder pain syndrome (IC/BPS) is an inflammatory condition of unknown aetiology associated with supra-pubic pain and other urological symptoms. Many treatments have shown limited efficacy in this difficult to treat condition. However, botulinum toxin A (BTX-A) given by intravesical sub-mucosal injection has been used as an unlicensed treatment for IC/PBS. It has been suggested that BTX-A has an effect on afferent neurons in addition to its well-known effects on the neuromuscular junction thereby improving both the urinary symptoms and pain seen in IC/PBS. The aim is to review the published data relating to the efficacy of BTX-A used in IC/PBS with respect to pain and symptom relief and to assess whether the pattern of intravesical injection (bladder wall vs. trigonal injection) impacts outcomes.

Materials and Methods: A comprehensive search was done on six databases including: Embase, Medline OVID, Scopus, CINAHL, Web of science and the Cochrane library. Risk of bias analysis on included papers was carried out using the appropriate CASP checklist and the Cochrane collaboration tool.

Results: Of the 1438 papers found, 17 papers were included after screening. Results shown in table 1. Analysis of the RCTs suggests BTX-A improves pain control as well other symptoms compared to either placebo or alternative treatments such as hydrodistension and pentosan polysulfate (PPS). One paper compared trigonal and non-trigonal injections and found no significant difference between the two groups but both improved symptoms compared to baseline. Analysis of cohort studies found that BTX-A improved pain and other symptoms when compared to patient's baseline readings.

Conclusion: BTX-A injection in the bladder has shown to be a safe and relatively effective treatment for patients with IC/BPS who have failed other conventional therapies. However, more detailed research is needed to determine the efficacy of BTX-A in IC/BPS especially when considering doses used, outcomes measured, and injection protocols.

UP.152, Table 1. Summary of findings.

Study	Study type	Comparator	Botulinum toxin for pain relief
Pinto R et al 2018	RCT	Botulinum toxin VS Placebo (normal saline)	Favours BTX group
Ismail A et al 2016	RCT	Botulinum toxin VS Placebo (normal saline)	Favours BTX group
Tasha Rasheed M et al 2010	RCT	Botulinum toxin VS Pentosan Polysulfate instillation	Favours BTX group
Kasyan et al 2012	Abstract RCT	Botulinum toxin VS Hydrodistension	No significant difference
Manning et al 2014	RCT	Botulinum Toxin + Hydrodistension VS hydrodistension + Normal saline	Favours BTX group
Kuo H.C et al 2009	RCT	Botulinum Toxin + Hydrodistension VS hydrodistension alone	Favours BTX group
Kuo H.C et al 2016	RCT	Botulinum Toxin + Hydrodistension VS hydrodistension + Normal saline	Favours BTX group
Lee C et al 2014	RCT	Botulinum Toxin + Hydrodistension VS hydrodistension + Normal saline	Favours BTX group
Jiang Y.H et al 2018	RCT	Trigonal injections VS bladder body injections	Shows improvement but No significant difference
A.K. Ramsay et al 2007	Cohort	Compared to Baseline reading prior to injection	Significant improvement
Chung SD et al 2012	Cohort	Compared to Baseline reading prior to injection	Significant improvement
Giannantoni A et al 2008	Cohort	Compared to Baseline reading prior to injection	Significant improvement
Kuo HC et al 2005	Cohort	Compared to Baseline reading prior to injection	Significant improvement
Shafik M et al 2010	Cohort	Compared to Baseline reading prior to injection	Significant improvement
Pinto R et al 2010	Cohort	Compared to Baseline reading prior to injection	Significant improvement
Shimpi R 2014	Cohort	Compared to Baseline reading prior to injection	P-value not given but shows improvement
Maeda Y et al 2014	Cohort	Compared to Baseline reading prior to injection	Significant improvement

UP-153

Should Nephrectomy Be Done for Non-Functioning Kidneys due to Genitourinary Tuberculosis After Receiving Anti-Tubercular Therapy? Results of a Prospective Cohort Study

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Introduction and Objective: To evaluate the role of nephrectomy for non-functioning kidney (NFK) due to genitourinary tuberculosis (GUTB) after receiving anti-tubercular therapy (ATT) by demonstrating whether live tubercle bacilli persists in nephrectomy specimens after treatment or not.

Materials and Methods: Symptomatic patients with tubercular NFK who underwent nephrectomy after completion of at least 6 months of ATT, were included in this study. We sent tissue from the nephrectomy specimen and pus, wherever present, for acid fast bacilli (AFB) staining, polymerase chain reaction (PCR) and culture to look for live bacilli. Bacilli were considered alive only if AFB culture was positive. Only those patients were included for final analysis where histopathology of nephrectomy specimen was consis-

tent with features of GUTB to avoid diagnostic misclassification.

Results: Twenty-seven patients underwent nephrectomy for NFK due to GUTB within 30 months duration. Nine of them had microbiological evidence of tuberculosis (either urine or pus for AFB positive or urine GeneXpert positive) before starting ATT. Remaining 18 patients were treated on clinical and radiological basis alone in absence of microbiologic evidence. Three of them were excluded because histopathology of nephrectomy specimen was not consistent with tuberculosis. The remaining 24 patients (18 females and 6 males) were included for analysis. Two patients showed persistent live bacilli in pus obtained from nephrectomy specimen, while one patient with concomitant renal and epididymal involvement, showed persistent AFB positivity in epididymal aspirate even after completion of ATT. Drug sensitivity testing showed multi-drug resistant (MDR) strain in all three patients and they were treated with second line ATT for 18 months. All of them improved significantly after therapy and showed no evidence of recurrence after one year of follow up.

Conclusion: Nephrectomy in tubercular NFK may not be required in all cases, but symptomatic patients with hydronephrotic or pyonephrotic kidneys should undergo nephrectomy as they are more likely to harbour live bacilli. AFB culture from operated specimen must be done to identify drug resistant cases so that they may be treated with second line therapy if required.

UP-154

Granulomatous Prostatitis: About 12 Cases

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Introduction and Objective: Granulomatous prostatitis is a rare and benign inflammatory process. But in the absence of specific clinical signs and given the great similarity with a malignant tumor process, this diagnosis remains based on the anatomopathological examination. Our study focuses on the anatomopathological profile and aims to highlight its clinical character and treatment specificities.

Materials and Methods: Our work includes 12 patients aged between 47 and 91 years followed in Sfax Urology Department, including 8 cases of xanthogranulomatous prostatitis and 4 cases of non-specific granulomatous prostatitis.

Results: The average age of our patients was 66 years old. The most common reasons for consultation are dominated by voiding disorders including dysuria, pollakiuria, and acute urine retention with renal failure in one case. The digital rectal examination revealed an indurated hypertrophy of the pseudotumor-like deceitful prostate in 2 cases and a homogeneous hypertrophy not suspected in 10 cases. The PSA assays performed in 6 patients were >4 ng / mL in 4 cases. Hyperleukocytosis is observed in 6 cases. Cytobacteriological urine examination was positive in 3 cases. Ultrasonography performed in 8 patients visualized adenomatous prostatic hypertrophy in all cases. One of our patients underwent a prostate biopsy to make the diagnosis of xanthogranulomatous prostatitis, and then treated medically. In other cases, diagnosis was made after histological examination of the prostate resection.

Conclusion: Xanthogranulomatous prostatitis is a rather rare benign inflammatory condition that often confuses with a malignant prostatic process. In view of the non-specificity of the clinical, radiological and biological signs, the diagnosis remains histological. Prostatic biopsies contribute to earlier diagnosis and more appropriate conservative treatment.

UP-155

Retroperitoneal Ascariasis: A Case Report

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Introduction and Objective: Infection with adult Ascaris primarily include the gastrointestinal system, but physical migration has been reported in a number of case reports. To date, only a small number of cases are available which involve the urinary system and no report of Ascariasis migration to the retroperitoneal space.

Materials and Methods: This is a case of a 38-year-old female admitted as a case of right flank pain secondary to perinephric abscess, renal mass right, initially managed conservatively with IV antibiotics and percutaneous drainage. However, patient did not improve hence an emergency exploratory laparotomy, with retroperitoneal exploration done. During exploration, no colonic fistula was noted and upon opening the retroperitoneum, a 1 cm opening at the mid lateral pole associated with purulent discharge was noted. Interestingly, a 16x1 cm wax-like, moving structure was found in the retroperitoneal space. The object was removed with Debakey forceps and was sent to pathology for review. Histopathology revealed to be Ascaris Lumbricoides. The patient then had an uneventful recovery. Fecal analysis was negative for Ascaris. She was then discharged from the hospital with an improved condition.

Results: This report is a unique and extremely rare case of Ascaris Lumbricoides presenting as perinephric abscess that has caused fistulation from the urinary tract to the retroperitoneal space

Conclusion: Ascariasis of the genitourinary tract is a rare condition. This is the first reported case of ascariasis in the retroperitoneum.

UP-156

What is the Factor Influencing Erectile Dysfunction After Acute Myocardial Infarction?

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Introduction and Objective: Erectile dysfunction (ED) is a common problem whose relation to cardiovascular diseases has been scientifically proven, but it has not been studied sufficiently in patients recovering from acute myocardial infarction (AMI). We evaluated the prevalence of ED and the predictive risk factors affecting erectile function after AMI.

Materials and Methods: Seventy men (mean age, 60.8 ± 10.2 years) with AMI, who underwent coronary angiography, were evaluated for ED using a 5-item version of the international index of erectile function (IIEF-5) questionnaire. All examinees filled up the questionnaire twice at the beginning of the treatment and at least 6 months after the initial erectile function assessment. Risk factors for AMI were also reviewed. The correlation between ED and the number of involved coronary vessels, age, the number of accompanying cardiovascular risk factors and their current antihypertensive medications were analyzed, prospectively.

Results: Among patients who recovered from AMI, 75% suffered from ED, of which were mild in 22%, moderate in 25% and severe ED in 53%. The prevalence of severe ED was significantly higher than other ED types (P<0.021). Risk factors of patients with AMI for ED were hypertension (48%), smoking (67%), coronary artery disease (55%), and diabetes (19%). On multivariate analysis, age and the number of involved coronary vessels were independent risk factors associated with prevalence of ED (P=0.034; Odds ratio=0.912, P=0.044; Odds ratio=0.281, respectively). None of the antihypertensive drugs were independently associated with the presence of ED. Self-reported reasons for decreased frequency of sexual activity were experiences of ED (40%), decreased libido (31%) and fear of recurrent heart attack (29%).

Conclusion: This study provides data on the prevalence of ED and the significant correlation of ED with old age and the number of involved coronary vessels in patients with AMI. Although it is a well-known fact that AMI is associated with ED, most physicians do not inquire about ED, and most patients are too embarrassed to discuss it. Therefore, routine ED workup should be recommended for every patient included in the program of cardiac rehabilitation.

UP-157

Risk Stratification and Prediction of Major Morbidity in Septic Patients with Upper Urinary Tract Obstruction Using the Sepsis-1 Definition

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Introduction and Objective: Patients with infected and obstructed upper urinary tracts are often dangerously ill with major morbidity rates ranging from 6 to 21%. There are no known clinical predictors of major morbidity for such patients. Sepsis-1, commonly used for sepsis definition, involves the use of 4 Systemic Inflammatory Response Syndrome (SIRS) criteria. Patients fulfil the definition of sepsis if they meet at least 2 SIRS criteria and are suspected to have an infection. This study aimed to evaluate the performance of Sepsis-1 for prediction of in-hospital major morbidity for patients with infection from upper urinary tract obstruction. This study hypothesised that Sepsis-1 would be able to risk-stratify patients' pre-intervention for urinary drainage, identifying patients at higher risk of morbidity.

Materials and Methods: We performed a retrospective cohort study over a 2-year period at our tertiary centre. All patients with infection from upper urinary tract obstruction were included. Primary outcome was all-cause in-hospital major morbidity (Clavien-Dindo Classification III-V). Patients were assessed for SIRS criteria from presentation until the time of interventional procedures for urinary drainage. We evaluated the test characteristics of Sepsis-1 as a predictor of major morbidity.

Results: We identified 104 patients with infected and obstructed upper urinary tracts. 65 met the Sepsis-1 definition of at least 2 SIRS criteria, while 39 had 1 or 0 SIRS criteria. The overall major morbidity rate was 11.5% (0% Clavien III, 10.6% Clavien IV and 0.96% Clavien V morbidities). The major morbidity rate for patients who fulfilled the Sepsis-1 criteria was 18.5%, with a sensitivity of 100% (95% CI: 73.54-100%) and specificity of 32.4% (95% CI: 32.2-53.1%) to predict morbidity. The positive predictive value of the Sepsis-1 criteria to predict major morbidity was 18.46% (95% CI: 16.0-21.2%) and negative predictive value of 100%. There were no major morbidities among all 39 patients with 1 or 0 SIRS criteria.

Conclusion: The Sepsis-1 definition performed well in risk stratification of patients with infected and obstructed upper urinary tracts. The high sensitivity and negative predictive value of Sepsis-1 demonstrated its clinical effectiveness as a screening assessment for patients at higher risk of major morbidity.

UP-158

Fungal Scrotal Abscess in the Immunocompromised Diabetic

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Introduction and Objective: We review a case of the rare complication of a fungal scrotal abscess in immunocompromised patient following multiple Urological procedures.

Materials and Methods: Retrospective case report of a patient's journey through initial investigation, treatment and adjuvant therapies and review of the literature surrounding these rare abscesses and their risk factors.

Results: We present a case if a 71-year-old man with multiple presentations to our service with progressive urological pathologies over a 3-month period, likely as a consequence of his poorly controlled type 2 diabetes. He initially presented with proteus mirrabilis prostatitis, which transformed into an abscess, which was de roofed. He represented with unilateral epididymo-orchitis and what appeared to be a radiolucent stone on that side for which he received antibiotics and a stent. After settling he was discharged on antibiotics, but further represented with bilateral epididymo-orchitis which transformed into a right scrotal abscess. Scrotal ultrasound defined a likely right testicular abscess and concurrent CT abdomen ruled out any other focus of infection for his ongoing fevers. Urine microscopy showed budding yeast forms on gram stain and he was commenced on fluconazole in addition to meropenem. Scrotal exploration proceeded and resulted in a right orchiectomy for a necrotic focus and a multiloculated abscess. Intraoperative microscopy demonstrated a candida albicans for which he received antifungals. Histology was benign, revealing epididymal necrosis and disseminated abscess formation. His repeat CT also did not demonstrate the radiolucent stone for which he was previously stented, and his stent was removed 2 days following.

Conclusion: This case highlights the need to consider implications of poorly controlled diabetes and its secondary immunosuppression in recurrent urological infection. A review of the literature found only limited reports of fungal scrotal abscess, but consistently within the immunosuppressed and poorly controlled diabetic patient. Incidence of urinary candidiasis has a widely reported range of incidence dependant on multiple factors. In the outpatient setting incidence is reported as low (under 3.3%) versus inpatient incidence ranging between 11 to > 40%. Treatment recommendations continue to be antifungals and surgical source control.

UP-159

Emphysematous Pyelonephritis: Management with Urinary Derivation versus Nephrectomy, A Multicentric Study

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Introduction and Objective: To determine morbidity and mortality in patients with emphysematous pyelonephritis subjected to urinary derivation versus nephrectomy with associated risk factors.

Materials and Methods: A multicentre, observational, retrospective and comparative study was conducted in a period from June 2013 to December 2018 in 12 hospital centers in patients with tomographic diagnosis of emphysematous pyelonephritis according to the HUANG classification and were divided based on the treatment offered in two groups: early nephrectomy versus urinary diversion (JJ catheter, open or percutaneous nephrostomy).

Results: A total of 182 patients were included, in whom the age of greatest incidence was between 50 and 59 years, with a greater predominance of females (73.53%), where more than 55% of the patients had a history of DM2 and CKD, as well as renal lithiasis, occurred in more than 60% of the population studied. Clinical and biochemical conditions were evaluated at hospital admission and 48 hours after performing a surgical intervention (urinary diversion versus early nephrectomy) and the response to it was evaluated. Morbidity and mortality were evaluated at 30 days according to the treatment offered. The main risk factors were identified during their illness, which was: Dm2, CKD, Renal lithiasis, Leukocytosis, neutrophilia, medial arterial pressure. In addition, a sub analysis was performed on early nephrectomy versus delayed nephrectomy (previously treated with urinary derivation), finding an advantage in survival in early nephrectomy.

Conclusion: Early nephrectomy in patients diagnosed with PE in advanced stages Huang III improved significantly survival versus percutaneous drainage and urinary derivation only and improves survival versus delayed nephrectomy.

UP-160

Calciphylaxis and Fournier´s Gangrene – A Bad Combination

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Introduction and Objective: Calciphylaxis is a very rare disease with limited therapeutic options. There are only 24 to 35 documented cases/year. Due to a sclerosis of the media of small arteries and arterioles it comes to wound healing disorders. If superinfections occur, mortality increases by up to 80%.

Materials and Methods: In June 2017, a 53-year-old man presented with necrosis on the foreskin and scrotum. The patient suffered also from dialysis-dependent diabetic nephropathy as well as a PAOD. Following initial cystofix placement, necrectomy, circumcision, and repeated wound revision, a secondary suture was performed on inconspicuous wound conditions. A little later, the patient again presented with necrosis and putrid secretion. In addition to large-scale debridement of the wound to treat the histologically proved Fournier's gangrene, resection of the penis and scrotum followed by vacuum therapy. Because of persistent wound problems, we performed a penile amputation and colostomy. In total, 48 operative interventions were required in 3 months. The cause of the extremely poor wound healing was a medicinal not controllable Calciphylaxis. In the further course, the patient suffered apoplexy. A little later there was readmission with progressive deterioration. Finally, the patient suffered a hemodynamically effective pericardial effusion and died.

Results: The simultaneous occurrence of calciphylaxis and Fournier´s gangrene carries a high risk of mortality (about 60%) and thus represents a special medical challenge.

Conclusion: Dialysis-dependent patients with wound healing disorders should, therefore, be carefully examined regarding an underlying Calciphylaxis.

UP-161

Effect of Hormonal Manipulation Using Clomiphene Citrate Prior to Microdissection Testicular Sperm Retrieval

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Introduction and Objective: Microdissection Testicular Sperm Extraction (micro-TESE) is a surgical method used for obtaining sperm for men with non-obstructive azoospermia. Success rate for this procedure ranges between 25% to 60%. Clomiphene citrate stimulates LH and FSH production. Its use currently is still off label in men. It has been found that using CC prior to micro-TESE gave a better chance of sperm retrieval. We usually prescribe CC by in 50 mg doses once daily for 6 months prior to micro-TESE.

Materials and Methods: This retrospective study included all patients who underwent Micro-TESE between August 2015 to November 2018. Data on preop hormonal levels, testicular volume, and associated genetic abnormalities were collected.

UP.161, Table 1: The association between positive sperm retrieval and other demographic variables.

Variable	Sperm found	No sperm found	*p*-value
Age (Mean ± SD)	37.98± 9.81	35.68±7.20	.139
Right testis volume (ml) (Mean ± SD)	12.40± 5.84	7.95±4.11	.000
Left testis volume (ml) (Mean ± SD)	11.50± 4.77	7.68±3.96	.001
LH (Mean ± SD)	6.45± 3.25	9.72±7.25	.005
FSH (Mean ± SD)	13.14± 8.96	17.78±12.98	.035
Testosterone (Mean ± SD)	16.12±11.09	15.64±8.29	.793

UP.161, Table 2: The association between taking CC and sperm retrieval.

Variables	Sperm found n(%)	Sperm not found n(%)	p-value
Taking CC	15(40.5)	22(59.5)	.695
Not taking CC	39(45.9)	46(54.1)	
Total	54(44.3)	68(55.7)	

Results: 122 patients were included in this study mean age was 37 ± 8.84 years, mean LH was 8.32 ± 6.08, mean FSH was 15.83 ± 11.64, mean testosterone level was 15.84 ± 9.50. Thirty-seven (30.32%) of patients were taking CC. Karyotyping was done showing that 11 (9%) patients had Kleinfelder syndrome and two of them were taking CC and 3 (2.5%) patients had Y chromosome micro deletion and none of them were on CC. The overall sperm retrieval rate was (44.3%) and (50%) in the normal karyotype group. Micro-TESE results were not found to be statistically affected by age, testosterone levels, Kleinfelder syndrome, and CC. However, higher testicular volumes and Lower LH and FSH levels were found more in positive micro-TESE this was statistically significant. Furthermore, Taking CC was associated with higher levels of LH and FSH levels, this was not statistically significant.

Conclusion: Micro-TESE results were found to be unaffected by CC, age and testicular volumes. This is contrary to the belief that it holds a positive impact on micro-TESE outcome. We recommend for this finding to be further explored on a larger sample size and different study design.

UP-162

Yield of Microsurgical Varicocelectomy in Severe Oligospermia

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Introduction and Objective: Varicocele is the cause of 35%-50% of men with primary infertility and up to 81% with secondary infertility. Various studies have shown that varicocele is related to testicular hypotrophy, impaired spermatogenesis, increased apoptosis of germ cells in the seminiferous tubules, oxidative stress pattern and a progressive damage to testicular biology over time.

Materials and Methods: We did a retrospective chart review study of all patients with severe oligospermia (sperm count less than 5 million) who underwent microsurgical varicocelectomy between May 2014 and November 2017. We looked into pre-op testosterone, LH, FSH, Prolactin, and TSH as predictive values for the outcome. We compared the pre-op and post-op semenalysis. Chi-square was used to compare the pre-op and post-op sperm count, motility and volume. All semenalysis results collected are for short-term follow up; long-term follow-up data are still to be collected as well as IVF results.

Results: In total, 28 patients were included in the study. Most patients underwent only left-sided microsurgical varicocelectomy (60.7%). Mean age was 32.7, mean TSH, LH, FSH, Prolactin and testosterone were 2.71, 7.35, 8.87, 13.3 and 15.05 respectively. Pre-op means for sperm count and motility were 36.68 and 0.89 million which improved post-op to 30.15 and 7.05 million. Nine patients (32.14%) had significant improvement in sperm parameters and the remaining portion either had no change in SA or became azoospermic this difference was not found to be statistically significant (p >0.05), on short-term follow-up.

Conclusion: The magnitude of improvement after microsurgical varicocelectomy for severely oligospermic pts is lower than reported in mild male factor infertility. Future studies are needed on larger scale to include also impact on IVF results.

UP-163

Monomorphic Teratozoospermia: Genetics and Fertility Prognosis

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Introduction and Objective: Using new molecular and morphological approaches, monomorphic teratozoospermia are currently being better-known with the recognition of numerous subtypes and the description of some recurrent mutations. Here, we present the genetic aspects and clinical characteristics of 24 Tunisian infertile men with monomorphic teratozoospermia.

Materials and Methods: A monocentric study, about a serial of 24 Tunisian patients with monomorphic teratozoospermia and for who clinical, morphologic and genetic explorations have been done, was conducted. Data was collected from the medical and genetic records of the Histology Department of the Medical University of Sfax.

Results: Macrocephalic sperm head syndrome (SMP) was noted in 14 cases and globozoospermia or round-headed sperm syndrome (STR) in 10 cases. The average age was 39 years old. The mean duration of primary infertility ranged from 5.6 years (SMP) to 7.6 years (STR). Oligo-astheno-teratozoospermia was noted in 80% of patients. 43% of SMP patients who were involved in assisted reproduction treatment (ART) failed to conceive in all cases, whereas among 70% of STR patients who were conducted into ART cycles, only one couple gave birth to a healthy twin using oocyte activation protocol. 71.4% of SMP patients were molecularly explored for the c.144delC microdeletion of exon 3 of the AURK C gene. Five SMP (type 1 form) patients were found to be positive and homozygous for the microdeletion whereas five patients (SMP type 2 form) were negative. 70% of STR patients were explored for the c.848G> A mutation of exon 4 of the SPATA 16 gene and only four STR patients for DPY19L2 gene rearrangements. No mutations were detected. The karyotype was normal for 23 patients with 46, XY formula whereas a reciprocal translocation involving chromosomes 4 and 16, was detected in one SMP patient (type 1 form).

Conclusion: Our study demonstrated the impact of the implementation of genetic and morphological techniques as well as new ART techniques and procedures in order to precise the diagnosis and the fertility prognosis of monomorphic teratozoospermia.

UP-164

The Influence of Multiple Occupational Exposure on Male Reproductive Function: A Cross Study Among Infertile Men in Tunisia

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Introduction and Objective: The nature and magnitude of reproductive toxicities are often dependent on exposure levels, but these factors are difficult to assess in an occupational setting. The aim of our study was to investigate the association between occupational exposures and alteration of sperm parameters as well as the cumulative effects of exposures.

Materials and Methods: A cross-sectional descriptive study was conducted at the Department of Histology, Embryology and Genetics of the Medical University of Sfax (Tunisia) involving 250 infertile men who were attending the genetic counseling for diagnostic purposes to their infertility during a period of two years. All participants were interviewed and provided a se-

men sample and a blood sample. A detailed questionnaire about the exposure to occupational factors was performed. According to job-exposure matrix, men were classified as either occupationally exposed or non-exposed. Semen as well as chromosomal analysis was performed. Statistical analysis and correlations were conducted using SPSS IBM 20 for Windows. The significance in the differences was evaluated by using Student and ANOVA tests.

Results: Of 250 infertile men, 119 (47.6%) were exposed and occupational exposures were to solvents (54.6%), endocrine disruptors (30.3%), metals (29.4%), high temperatures (20.2%), UV radiations (14.3%), and pesticides (12.6%). Thirteen exposed patients had a single identified exposure (25.21%), 51 were exposed to two factors (42.85%), 32 to three (26.89%), and 4 for four agents (3.36%). Secondary infertility has most often observed in patients with two recorded occupational exposures. Severe changes in sperm parameters had been frequently observed in men exposed to two or three reprotoxic agents. Even though, using one-way ANOVA analysis of variance, no significant positive association between the number of occupational exposures and the spermatic profiles was found. Moreover, eight of twelve exposed men recorded as having cytogenetic abnormalities (66.7%) were exposed to at least 2 or 3 toxic agents. Although, multiple exposure was not statistically associated with an altered karyotype ($p = 0.05$).

Conclusion: Our findings suggest that occupational exposure may affect male fertility and semen quality. However, no statistical association between the number of exposures and the degree of semen alterations was demonstrated. The magnitude of reproductive toxicities is often dependent on exposure levels, but their assessment is difficult in an occupational setting. Further studies are needed to evaluate the association between combined occupational exposures, altered sperm parameters and genomic alterations. Preventive measures must be established and could be completed by the use of biomarkers to a better characterization of combined exposures to chemicals and non-chemicals factors and their commutative spermiotoxic effects.

UP-165

Genital Phenotypic Heterogeneity in Bardet-Biedl Syndrome

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Introduction and Objective: Bardet–Biedl syndrome (BBS) is a ciliopathy causing multivesicular abnormalities. It is a rare and heterogeneous genetic condition characterized by obesity, mental retardation, dysphoric extremities, retinal dystrophy, hypogonadism and genitor-renal anomalies. To date, mutations in 18 different loci are responsible for BBS phenotype.

Materials and Methods: We report two Tunisian patients who attended our genetic counselling because of ambiguous genitalia for the first patient and primary infertility for the second and for who the diagnosis of BBS was done clinically.

Results: The first patient was a 24-year-old male who was referred because of aspermia. Patient history reveals parental consanguinity, familial cases of polydactyly and bilateral orchiopexy one year ago. Physical examination showed poor visual acuity, strabismus and gaze nystagmus (with retinal degeneration at ophthalmologic examination), obesity, tetramelic postaxial polydactyly, superficial dilatation of veinules, dental problems, short neck, low hairline at the nape of the neck, impaired coordination and ataxia and moderate mental deficiency. At sexual level, the patient had severe disorder of sex development (DSD) without renal abnormalities, a female voice, small empty scrotums that look like labia majora with a severe microphallus. Cytogenetic evaluation reveals a 46, XY male formula. The second patient was a 34-year-old man who was referred because of a primary male infertility with cryptozoospermia and failure of two ICSI attempts. He had the same specific signs of BBS syndrome but at the sexual level, he had unilateral right cryptorchidia, normal penile and normal sexual activity. Cytogenetic evaluation reveals a 46, XY male formula. He failed to conceive by intracytoplasmic sperm injection using intra-testicular spermatozoa.

Conclusion: BBS is a rare autosomal recessive genetic disorder. It is characterized in males by heterogeneous genital phenotype with a large spectrum of genital abnormalities varying from sexual infantilism to subnormal male phenotype associated or not to hypogonadotropic hypogonadism but with invariable infertile phenotype. Here, we describe an exceptional case of BBS carrying a low amount of spermatogenesis. A genetic testing will be mandatory before other attempts of medically assisted procreation.

UP-166

Younger Age is Associated with Better Outcomes After Varicocelectomy for Infertility

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Introduction and Objective: Varicocele is present in 15% of the general population, and in 35% of primary infertility and 70-81% of secondary infertility cases. Its correction improves semen parameters and pregnancy rates. However, it is still controversial if varicocelectomy has the same efficacy in older males.

Materials and Methods: We retrospectively analyzed all cases of varicocelectomy due to infertility between 2012 and 2018, evaluating its efficacy in sperm parameters and pregnancy rates improvements, and verifying if there were any differences between two age groups.

Results: In this period, 42 patients underwent varicocelectomy, with a mean age of 33.3 ± 5.1. Overall, there was an improvement in sperm concentration ($p<0.001$), progressive motility ($p=0.001$) and morphology ($p=0.001$), although in the last there was a higher number of males without any change (n=20, 48%). There were no differences related to sperm volume ($p=0.1$). Dividing the patients in two different groups, using as cut-off the mean age (< 33 vs ≥ 33 years), we observed no differences regarding the number of patients who presented any kind of improvement in semen parameters (67% vs 58%, $p=0.582$). However, there was a more pronounced improvement in the sperm concentration in the younger group (increase of 203%, $p=0.02$ vs 94%, $p=0.004$), and this was also the only group who presented an improvement in motility (increase of 33%, $p=0.001$). Overall, the patients' spouses' pregnancy rate was 35%, the majority of them (71%) from males who have had improvement in sperm parameters. The younger patient group presented a statistically significant higher rate of deliveries (60% vs 20%, $p=0.006$), that remained even after adjusting for the spouse age (OR= 5.55, $p=0.035$).

Conclusion: Varicocelectomy is an effective technique in the improvement of sperm parameters, with the younger males being the ones who benefit the most. Surgical correction in a younger age is associated with a better success in pregnancy rate, and so it should be employed early.

UP-167

Enhancement of Sperm Retrieval in Non-Obstructive Azoospermic Patients Using Conventional TESE: Technical Optimization and Hormonal Stimulation

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Introduction and Objective: Sperm retrieval in NOA patients remains to be the only hope for these patients for fatherhood using assisted reproductive techniques. Micro-TESE is the gold standard with the best retrieval rate. Microsurgical facilities are not available at every center and conventional TESE techniques are not standardized between different centers. Our objective is to improve the spermatogenic function of NOA patients to improve the chances of successful sperm retrieval from the testis for ICSI and to optimize and standardize our conventional TESE technique.

Materials and Methods: Starting since 2010 through 2018, 100 cases of NOA patients were involved. Cases with Obstructive Azoospermia (OA) and cases with abnormal chromosomal analysis were excluded. Patients were given pre-operative course of clomiphene citrate for 6 months for optimization of sperm retrieval. Patients were subjected to conventional TESE using standardized technique entailing 6 biopsies from each testis (2 from upper, midzone and lower pole). Experienced embryologist attends each procedure examining each biopsy until sperms are retrieved. Separate biopsy from each testis was sent for definitive histopathologic correlation.

Results: Operative time ranged from 20 minutes if positive first biopsy up to 150 minutes if 12 biopsies were to be examined. Mean age of our patients was 36 (± 9) years. Mean duration of infertility was 5.4 ± 3.8 years. Number of biopsies taken until +ve sperm ranged from 1-12 with mean of 3 (± 5). Sperm retrieval rate was successful in 39 patients (39%). Histopathologic Findings showed germ cell aplasia in 45 (45%), hypo spermatogenesis in 23(23%), incomplete maturation arrest in 12 (8%), Sertoli cell only in 13

(13%) and normal spermatogenesis in 7 (7.4%) of patients.

Conclusion: In our hands and in the absence of Micro-TESE facilities, applying this standardized technique with pre-operative hormonal manipulation yielded accepted rate of sperm retrieval. This approach saved our patients with positive sperm unnecessary extra-biopsies. Randomized study for pre-TESE hormonal stimulation is warranted to justify its routine use.

UP-168

Prevalence of Chromosomal Abnormalities Among Non–Obstructive Azoospermic Patients, Tabuk Experience

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Introduction and Objective: Chromosomal or genetic abnormalities account for around 10% of male infertility. The prevalence among non-azoospermia patients is much lower while in azoospermia patients is higher. Our aim is to define the prevalence of chromosomal anomalies among our azoospermia patients in Tabuk area.

Materials and Methods: All non-obstructive azoospermia patients evaluated in our hospital from 2010 until 2018 were subjected to chromosomal analysis after full clinical, laboratory and radiologic work up. Analysis included karyotyping and study of Y-chromosome micro-deletions. Patients with iatrogenic causes of azoospermia as those post-chemotherapy or vasectomy as well as cases of obstructive azoospermia were excluded.

Results: Out of 115 non-obstructive azoospermia patients evaluated in our hospital, 14 (12.17%) showed abnormal chromosomal pattern. Klinefelter syndrome (47XXY) was detected in 9 of them (7.82%) where it accounted for 64.3% of our patients' chromosomal anomalies. Y-chromosome microdeletions were detected in 3 (2.6%) of our cases. One case of abnormal chromosome 16 and another case of Balanced Robertsonian translocation between chromosome 13 and 14 were diagnosed. All those patients were referred for higher center for pre-implantation genetic diagnosis in conjunction with micro-TESE

Conclusion: Chromosomal abnormalities were detected in significant number of our non-obstructive azoospermia patients. All these patients need genetic counseling and discussion of the significantly lower sperm retrieval rate during TESE among them and possible transmission of the abnormality to their children.

UP-169

The Experience of Vassal Sperm Aspiration on Patients with An-Ejaculation or Retrograde Ejaculation

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Introduction and Objective: To update the feasibility and outcomes of loupe-assisted vasal sperm aspiration for sperm retrieval of male infertility due to anejaculation and retrograde ejaculation.

Materials and Methods: We retrospectively reviewed vasal sperm aspirations on 10 patients with an-ejaculation or retrograde ejaculation during the recent 3 years from 2015 to 2017. We collected pre-operative serum hormonal data (testosterone, follicle-stimulating hormone, luteinizing hormone and prolactin) and comorbidities of each patient. Every patient received standard procedure of vasal sperm aspiration by single surgeon with immediately specimens interpreting and then was follow-up at clinics.

Results: Of all, 4 patients with retrograde ejaculation and 6 patients with an-ejaculation. There were 7 patients with controlled diabetes mellitus, one with ejaculating duct stone and one with unilateral testicular cancer status post orchiectomy and adjuvant chemotherapy, only one without any comorbidity. Aspirations were performed for use with assisted reproductive techniques in 9 cases and for cryopreservation alone in one. The average total sperm count was 178 × 106, with the motility between 9% and 66.7%. Three of the population had received open testis biopsy or microsurgical epididymal sperm aspiration (MESA) before vasal aspiration but prior result of semen analysis was poor quality for use *in vitro* fertilization (IVF). No complications have been observed to date.

Conclusion: Vasal sperm aspiration is a simple and effective method as alternative to sperm retrieval, considering its advantage of high success rate while less invasive and destructive for reproductive system, it could be performed prior to retrieval from epididymis or testis.

UP-170

The Contribution of Modified Marmar Technique to Achieve Improvement in Spermiogram and to Achieve Pregnancy in Couples with Infertile Men with Varicocele

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Introduction and Objective: Varicocele is the most common cause of male infertility. The goal of varicocele treatment is to prevent backflow into the internal spermatic veins. The aim of this study is to investigate the hypothesis that varicocele repair with a modified Marmar sub-technique, using Valsalva maneuver intraoperatively to identify the varicose veins, in infertile men not only contributes to the postoperative improvement of the spermiogram, but also to the achievement of pregnancy.

Materials and Methods: Between March 2017 and March 2018, a total of 169 infertile men between age 18 and 44 underwent varicocele repair with the modified Marmar sub-technique. All the patients suffered from Left Varicocele, including 17 patients (10.1%) suffered from bilateral varicocele. Men with co-existing other causes of infertility or with varicocele and normal spermiogram were excluded. Sperm parameters prior to surgery and 6 months later likewise the pregnancy achievement recorded.

Results: Postoperatively any improvement to any variable of semen analysis was found to all the cases. However, only 4 (2.4%) patients presented normal spermiogram postoperatively. According to WHO guidelines normalization of the number of sperm was present in 109 cases (64.5%), of the motility of sperm in 92 cases (54.4%) and of the morphology of sperm in 147 cases (87%). Otherwise improvement of the number of sperm was found in 151 cases (94.1%), of the motility of sperm in 161 cases (95.3%) and of the morphology of sperm in 149 cases (88.1%). During the follow up 70 patients reported constant efforts to achieve a pregnancy. Spontaneous pregnancy rate was 45.7% (32 cases). Only three patients (1.8 %) presented hydrocele formation.

Conclusion: Base on our findings, Modified Marmar sub-technique using Valsalva maneuver intraoperatively to identify the varicose veins is a very safe technique, without the frequent occurrence of complications and with a high effectiveness to improve post-operatively the semen analysis parameters and the male fertility, affecting positively to spontaneous pregnancy.

UP-171

Semen Improvement in Patients with Varicocele after Ligation of Internal Spermatic Veins by Subinguinal Approach: A Study of 50 Patients

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Introduction and Objective: The purpose of this study was to prove semen improvement in patients with varicocele who underwent ligation of the internal spermatic by open subinguinal approach.

Materials and Methods: The study included 50 patients with varicocele and pathologic spermogram who underwent ligation of internal spermatic veins by open subinguinal approach in General Hospital of Athens G. Gennimatas from 01/01/2017 to 31/12/2018. All patients underwent a new spermogram 3 months after surgery.

Results: According to the results, 30 patients (60%) from the 50 who underwent surgery, had a semen improvement 3 months after surgery and half of them 15 (30%) infertility treatment with pregnancy. These percentages are comparable to those referred in international bibliography.

Conclusion: Varicocele is considered as a cause of male infertility, that can be treated either incisional, laparoscopic or radiologic, which depends of the experience of the medical practitioner. Treatment of varicocele should be considered from the urologists in patients with pathologic spermogram where other causes of infertility excluded, as it seems to improve spermogram in many cases and can also lead to pregnancy.

UP-172

The Effect of Sildenafil on Semen Parameters: A Randomized Double-Blind Cross Over Study

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Introduction and Objective: Clinical effect of phosphodiesterase 5 (PDE5) inhibitors has been less addressed on fertility. Regarding this, in this clinical study, we investigated whether oral sildenafil administration modifies seminal parameters.

Materials and Methods: In a double-blind, randomized, placebo-controlled, cross-over, from October to March 2016, we enrolled 79 infertile patients. Patients were assigned to two groups A and B. In group A, patients initially received 50 mg sildenafil citrate and then received placebo after the washout period; in group B, patients initially received placebo and then received 50 mg sildenafil citrate after the washout period. People were asked not to ejaculate 3 days before administration and avoid smoking and caffeine. Then the two groups listed above replaced each other, so that the group receiving sildenafil received placebo on this occasion after the washout period and the appropriate time to test the next semen analysis which was considered one week. Meanwhile, all studied patients did a single semen analysis one week before receiving the first dose of drug or placebo in the same lab.

Results: The mean age of patients was 34.5 years. There was no significant difference in the mean sperm count before receiving the drug in all groups. Sperm count, motility, morphology, pH, viscosity, and liquefaction time of semen did not significantly change after receiving sildenafil in comparison to placebo group ($P > 0.05$).

Conclusion: These results indicate that sildenafil did not change sperm parameters in treating infertile patients; it also had no positive effect on semen parameters.

UP-173

Nano Curcumin Effect in Nuclear Factor Kappa B (NFκB), Tumor Necrosis Factor-α (TNF-α) and Interleukin-10 (IL-10) in Preventing Antisperm Antibody

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Introduction and Objective: Antisperm antibodies (ASA), one of the causes of immunological factors. ASA occurs due to damage to blood testes barrier (BTB). Inflammation can release of pro-inflammatory cytokines TNF-α, so that activation occurs NFκB transduction pathway through IKK. Nano curcumin which is the active ingredient of ginger in nano size that can inhibit the activation of NFκB.

Materials and Methods: Randomized experimental design, carried out to determine the role NFκB, pro-inflammatory cytokines TNF-α, anti-inflammatory cytokine IL-10 level in the ASA artificial on adult male Wistar rats aged 10-12 weeks by administering 80 mg of curcumin nano/kg body weight There are 3 treatment groups, the group given nano curcumin 7 days, the group given dexamethasone tablets, and a placebo. Before treatment of blood taken for examination TNF-α, and IL-10 NFκB with ELISA method, and performed a biopsy on the left testicle to be examined immunohistochemistry. After the examination the same treatment as before with left orchidectomy.

Results: TNF-α, IL-10 and NFκB level on nano curcumin group showed significant differences ($p < 0.05$) before and after treatment. Comparison of the percentage change in the variable from before to after treatment obtained a significant decrease in the percentage of TNF-α ($p = 0.001$) in the amount of 20.3% ($p=0.001$) and the percentage decrease in NFκB is 22.53% ($p = 0.043$) in the group given nano curcumin. There is a significant correlation between the study variables in the percentage decrease of TNF-α and increase in IL-10 in the group given curcumin nano $r = 0.90$ with $p = 0.037$ and the percentage decrease of TNF-α and the percentage decrease of NFκB with $r = 0.06$ and $p = 0.04$. The results of immunohistochemistry, nano curcumin can prevent the occurrence of ASA by 57%.

Conclusion: Nano curcumin shows anti-inflammatory effects by inhibiting TNF-α, NFκB and increased levels of IL-10 to prevent the ASA.

UP-174

Role of Erythropoietin to Improve Spermatogonium, Sertoli and Leydig Cells, Apoptosis Germinal Epithelium Cells, and Sperm Motility on Wistar Rats After Ligation Release of Vas Deferens: A Pilot Study

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Introduction and Objective: Determining the effect of Erythropoietin (EPO) on the number of spermatogonium, Sertoli and Leydig cells, apoptosis germinal epithelium cells and sperm motility on Wistar rat after ligation release of vas deferens.

Materials and Methods: Twenty-four Wistar strain rats are grouped into 4 groups. The control group performed only an orchidectomy, ligation without release ligation group, ligation with release ligation of vas deferens group, and EPO group that got injection with dose of 1000 iu/kg BW intraperitoneally for a week after release ligation of vas deferens. Spermatogonium, Sertoli and Leydig cells counted by the number on the 5 cross sections of the seminiferous tubules using a 400x light magnification microscope with Haematoxylin Eosin staining. The number of apoptosis observed using TUNEL staining assay. Eosin-stained slides were prepared to assess the motility of sperm cells.

Results: Ligation release action affect spermatogonium cell count and EPO group have higher spermatogonium cell counts significant difference in number compared to other three groups ($p<0,05$). EPO group not only shows higher cell count of spermatogonium but also higher Sertoli and Leydig cell count compared to other groups ($p<0,05$). The number of apoptosis shows a lowest in EPO group compared to three other groups ($p<0,05$). There is a significant difference in the motility of sperm cells in the control group compared with the vasectomy group ($p < 0.05$). The individual movement percentage of sperm cells in ligation group were fewer in number than the vasectomy group ($p< 0.05$). Administration of EPO after releasing the ligation of vas deferens had a best percentage of the motility than the vasectomy group and the ligation release group ($p<0,05$).

Conclusion: Erythropoietin improved the amount of spermatogonium, Sertoli cell, Leydig cell, sperm motility and decrease apoptotic number in Wistar rat after releasing the ligation of vas deferens.

UP-175

Effect of Tyrosine Kinase Inhibitors on Spermatogenesis

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Introduction and Objective: With marked improvement of cancer treatment, fertility issues are one of the greatest concerns for cancer survivors. Spermatogenic impairment, such as irreversible azoospermia, occurs after classical chemotherapy (i.e., platinum containing drug, alkylating agents and anti-metabolites), whereas information regarding to the effect of molecular target drugs, such as tyrosine kinase inhibitors (TKIs), on the spermatogenic function is limited.

Materials and Methods: Between April 2009 and March 2017, a total of 12 patients with TKIs were included, and testicular volume, semen examination, and endocrine findings were evaluated.

Results: Mean patient age was 34.6 years (range 22 to 53). Seven patients were CML, three were renal cancer, one is AML or GIST, respectively. TKIs prescribed on these patients were dasatinib, imatinib, nilotinib, sorafenib and sunitinib. Average semen volume was 2.04 mL (range 1.5 to 3.5 mL), sperm concentration was 42.41 x 10^6/mL (range 3 x 10^6 to 130 x 10^6/mL), sperm motility was 39.8% (range 5 to 70%), FSH was 5.6 mU/mL (range 3.8 to 8.9 mU/mL), testosterone was 4.28 ng/mL (range 2.9 to 5.5 ng/mL), and testicular volume was 17.7 mL (range 14 to 22 mL).

Conclusion: Potentially TKI may cause spermatogenic dysfunction although it is milder than those of classical anticancer agents.

UP-176

Management of Stone Disease in Pregnancy

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Introduction and Objective: The incidence of stone disease in pregnant women is same as of non-pregnant women, but the management is big challenge during pregnancy. There are various negative consequences of symptomatic stone disease on both mother and baby. The objective is to evaluate possible outcomes of stone disease during pregnancy.

Materials and Methods: We are recruiting patients prospectively, presenting in our clinics or seen on floor. Data is collected for age, gestational age, clinical presentation, findings of ultrasound, any radiological or surgical intervention and follow up.

Results: In our initial 35 patients, the mean age is 30 years, most common presentation is with right flank pain in 2nd trimester, all patients had ultrasound scan as initial investigation. Most of them treated conservatively, three patients had right PCN insertion and one had two patient had JJ stent insertion. One patient with solitary kidney had miscarriage.

Conclusion: Conservative approach is main stay in treatment of stone disease during pregnancy. Surgical or radiological intervention is option for complicated cases.

UP-177

Staghorn Calculi Due to Uric Acid

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Introduction and Objective: Staghorn calculus means infective stone is known fact. But many staghorn calculi are caused by uric acid. We want to share this changing trend of staghorn calculi and how to suspect them at time of surgery. Stone occupying major part of pelvis and extending in one or more calyces is taken as staghorn calculus. No differentiation made whether partial or complete.

Material and Methods: From March 2014 to March 2019 during 5 years, 210 staghorn calculi treated at our centre. All patients were routinely evaluated with Urine exam, Urea and Creatinine, Uric acid. Ultrasonography, KUB X-ray and Intravenous Urography and or CECT. All patients primarily treated by PCNL. For residual fragments ESWL offered. Part of stone subjected for Integrated Crystallography and FTIR Analysis (Fourier transform infrared spectroscopy) stone analysis. All patients were advised regarding fluid intake, diet and potassium citrate. After stone analysis specific medical treatment, antibiotics for infective stone, Thiazide diuretic for Ca. Oxalate stone, Allopurinol or Febuxostat for uric acid calculi was advised.

Results: Out of 210 staghorn calculi, 49 (23.3%) patients were found to have uric acid as major contributor for stone composition. Rest were infective (Triple phosphate and calcium oxalate). Uric acid stones are golden yellow in colour, smooth surface, soft in consistency and easily fragmented with pneumatic lithoclast or shock-pulse lithotripsy system where suction is used.

Conclusion: Incidence of staghorn calculus due to uric acid is increasing and this changing trend needs attention. Uric acid calculi can be suspected due to its appearance and softness at time of stone fragmentation and can be confirmed by stone analysis, so that specific treatment for prevention of recurrence can be advised.

UP-178

Our Experience of Combined Energy Source with Suction Device Through PCNL for Staghorn Calculi

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Introduction and Objective: Stone fragmentation and retrieval in staghorn calculus is tedious, time consuming and causes blood loss. There are many energy sources for stone fragmentation (Pneumatic, Ultrasonic, Laser, etc.) and each has its own advantages as well as limitations. A new device consisting of mechanical and ultrasonic energy with suction for stone retrieval was evaluated for its efficacy and benefits as well as its limitations, at time of PCNL for staghorn calculi.

Material and Methods: Retrospective data of last 3 years from March 2016 to March 2019 was studied, 161 cases of staghorn calculi treated by PCNL as a mono-therapy by single surgeon. Stone hardness was evaluated by KUB X-ray and CT Scan. On CT stone more than 1000 houns field units were taken as hard stone. In 81 patients with hard stone, pneumatic lithoclast used for fragmentation and fragments removed by stone grasping forceps. In 80 patients with soft and moderately hard stone, shock pulse lithotripsy system was used for fragmentation and retrieval. This new device (from Olympus) consists of mechanical and ultrasonic energy combined together and large bore 3 mm suction channel is incorporated in hand piece only for stone retrieval. Stone fragmentation and retrieval time, blood loss, clarity of endo-vision and subjective comfort level of surgeon were compared in both groups of patients.

Results: Stone fragmentation and retrieval time and blood loss was less in shock pulse device was used. There was excellent endo-vision. Stone migration and mucosal injury was less. Device was very comfortable for surgeon, though hand piece is heavy.

Conclusion: New shock pulse lithotripsy system is very useful for soft to moderate hard density staghorn calculi during PCNL.

UP-179

Review of the Indications for Ureteric Stents Use Post Ureterorenoscopy

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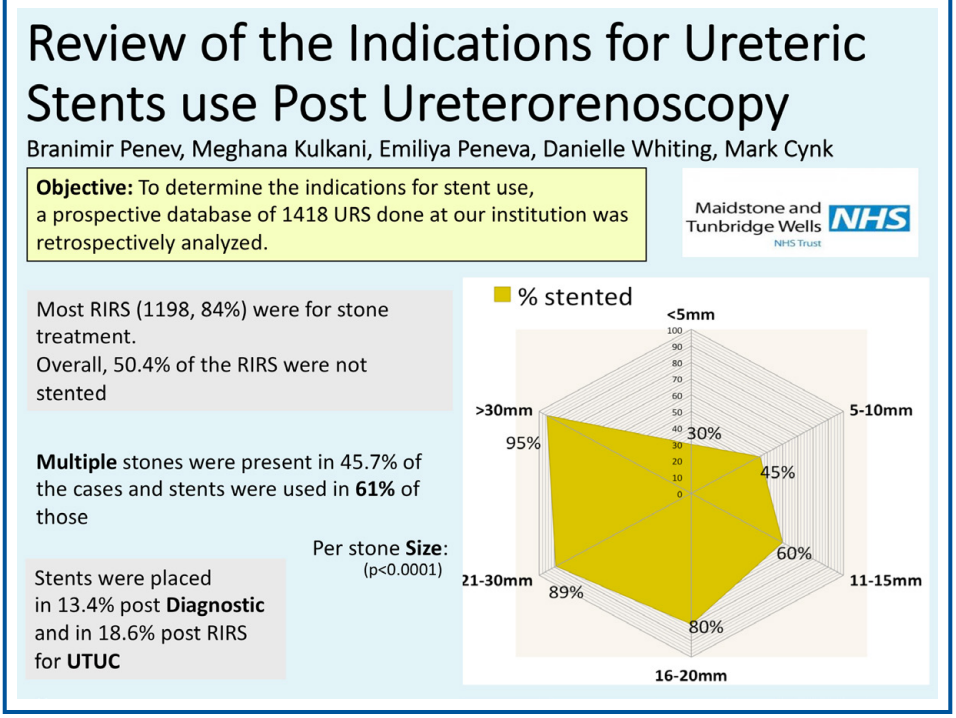
Introduction and Objective: The use of ureteric stenting post ureterorenoscopy (URS) remains controversial, with stent symptoms causing significant morbidity. The objective of this study is to determine the indications for stent use in large series.

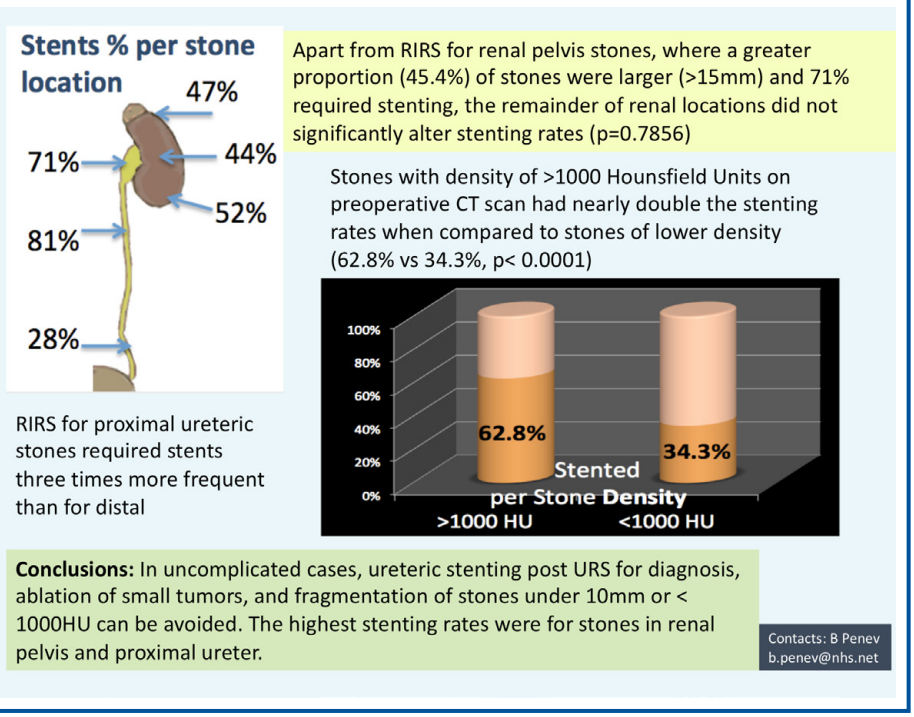
Materials and Methods: A prospective database of 1418 URS performed at our institution was retrospectively analyzed.

Results: Overall, half (50.4%) of the URS ended without stenting. The majority of URS (1198, 84%) were for lithotripsy. Multiple stones were present in 45.7% of cases, of which 61% were stented. When stratified by stone diameter, the stenting rate was 30% for < 5 mm stones; 45% for 5-10 mm; 60% for 10-15 mm; 80% for 16-20 mm; 89.7% for 21-30 mm; and 95% for stones > 30 mm ($p < 0.0001$). Stents were used in 47%, 44%, 52% and 50%, for stones in upper, mid, and lower pole, and calyceal diverticula respectively, with no difference between these locations ($p= 0.7856$, $\chi 2$ test). However, for stones in renal pelvis, where there were greater proportion (45.4%) of larger (> 15 mm) stones, 71% required stenting. Ureteric stones required stents post URS in 81%. Stones with density > 1000 Hounsfield Units (HU) on preoperative CT scan were stented twice more frequently (62.8% vs 34.3%, $p < 0.00001$) than stones of < 1000 HU. Following diagnostic URS, or for management of tumours, stents were used in 13.4% and 18.6% of cases respectively.

UP.179, Figure 1.



UP.179, Figure 2.



Conclusion: In uncomplicated cases, ureteric stenting post URS for diagnosis, ablation of small tumors, and fragmentation of stones under 10 mm or < 1000 HU can be avoided. The highest stenting rates were for stones in renal pelvis and proximal ureter.

UP-180

Primary Ureterocalycostomy for Complicated Upper Urinary Tract Obstruction in Congenital Solitary Functioning Kidneys: Challenging But Effective

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Introduction and Objective: Ureterocalycostomy is a well-established although challenging treatment option for patients with complicated ureteropelvic junction (UPJ) obstruction and other forms of proximal ureteral obstruction. It becomes more challenging in cases of congenital solitary functioning kidney (SFK) as there is compensatory hypertrophy in such units and also the stakes to preserve renal function are higher. Our aim is to report our contemporary experience in operative management of complex upper urinary tract obstruction in solitary functioning units since birth.

Materials and Methods: Between July 2015 to June 2018 four patients with congenital SFK underwent open ureterocalycostomy. The indications for surgery were primary PUJO with complete intrarenal pelvis in three patients and proximal upper ureteric stricture post RIRS in one. Percutaneous drainage was done in all patients before surgery so as to salvage renal function. The recorded data included age, gender, clinical presentation, duration of symptoms, operative time, hospital stay, complications and clinical and functional outcomes.

Results: The median patient age was 20.1 (12-34) years. Hospitalization ranged from 6-37 days (mean 10.1). No patient experienced a significant perioperative complication except one who had prolonged drain output. With follow-up ranging from 6 to 30 months (mean 11.3), relief of obstruction was evident in all patients as documented by intravenous urography or nuclear renography.

Conclusion: Primary ureterocalycostomy is a safe and effective treatment option in patients with complex upper urinary tract obstruction and having a congenital solitary functioning unit.

UP-181

Crossed Renal Ectopia in Adult: Clinical, Radiological and Evolutionary Findings in 20 Patients

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Introduction and Objective: Crossed renal ectopia (CRE) is a rare abnormality of the urinary tract, only few reports in adults are found in the literature. Through a series of 20 adult patients with CRE, we determine clinical, radiological, evolutionary features and we discuss therapeutic options.

Materials and Methods: Clinical, radiological and evolutionary findings of 20 adults with CRE, diagnosed at three teaching hospitals in the north of Tunisia are reviewed.

Results: The series accounts 13 males and 7 females, with a median age of 44,7 years (19-72). Renal ectopia was an incidental finding in 6 patients. Otherwise, pain was the main presenting symptom (n= 13) followed by lower urinary tract symptoms (n= 3) and hematuria (n= 1). Physical examination revealed a tender abdominal mass in only one patient. Excretory urography had made the diagnosis in 17 cases and CT scan in 3. In 8 patients both kidneys were on the left and in twelve both were on the right side. CRE was with fusion in 13 cases: S-shaped kidney in 7 cases, L-shaped in 4 cases and disc kidney in one case. Additional congenital anomalies were especially of the skeletal system. It was complicated with renal stones in 5 patients and hydronephrosis in one patient. Treatment was conservative in 15 patients, pyelolithotomy in 3 patients, ESWL in one case and nephrectomy in one patient. With a median follow-up of 41 months, we didn't detect any complication.

Conclusion: CRE is a rare entity in adults. Diagnosis is more and more fortuitous. Symptoms are often due to complication or associated abnormalities. Treatment should be conservative as possible as we can.

UP-182

Nephrectomy Overuse of for Benign Condition: Medico-Legal Reflections About 14 Cases

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Introduction and Objective: The objective of the study is to point-on and to analyze medico-legal aspects of conventional nephrectomy overuse for benign conditions in adults.

Materials and Methods: We retrospectively reviewed the records of all patients who had conventional nephrectomy within the 20-year period between January 1994 and December 2014 at Mohamed Tahar Maamouri University Teaching Hospital in Nabeul, the Rabta University Teaching Hospital and Security Forces Hospital in Tunis. The entire data of each patient was reviewed by two senior urologists without reference to the original readings to decide if nephrectomy was objectively the only therapeutic option and if there was any neglect or suspicion of medical malpractice leading to this procedure.

Results: In 14 patients, we didn't find in the medical documentation sufficient data to justify nephrectomy. The age of the patients ranged from 23 to 67 years (Mean age 41.4 years). Most of them were female (n=8). Most nephrectomy was on the right side (n=9). They have history of PCNL for pelvic stone (n=1), ureteroscopy for lumbar ureteral stone (n=1) and ureteroscopy for ureteral Stein Strasse post-ESWL (n=2). Nephrectomy was performed in PUJO (n=4), staghorn stone (n=3), pelvic stone (n=4) and lumbar ureteral stone without real evidence of non or poor functioning kidney. Nephrectomy was an easy solution for complicated cases in eight cases. Ablative surgery was indicated on the IVU data in 5 patients, in whom renal parenchyma was normal in three. Histopathology studies concluded to chronic pyelonephritis without sign of malignancy in all cases. Three patients continue to complain of back pain, and one had developed

incisional hernia. Estimated final permanent partial incapacity rates vary from 5 to 11%.

Conclusion: Overuse of nephrectomy for benign condition is a medical error. It may occur resulting in severe health and ethical problems. Such condition must be minimized by systematic practice of adequate investigations, stuff decision and respect of therapeutic guidelines.

UP-183

Hypoxia Promotes Extracellular Vesicle Genesis from Mesenchymal Stem Cells and Enhances its Efficacy in Alleviating Renal Ischemia-Reperfusion Injury

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Introduction and Objective: Renal ischemia-reperfusion injury (IRI) is one of the main causes of acute kidney injury in clinical patients. Mesenchymal stem cell (MSC) derived extracellular vesicle (EV) exist therapeutic effects in renal IRI, and the tissue repair ability of MSC was enhanced under hypoxic culture has been reported. However, the effect of hypoxia on MSC-EV genesis and renal IRI repair were unclear. So, the aims of this study were to investigate the effect of hypoxia on generation of MSC-EV, and further to verify its protective role in renal IRI.

Materials and Methods: Human umbilical cord MSC was isolated and cultured *in vitro*. The cells were cultured under normal oxygen (21%) and hypoxia (3%) conditions for 24 hours respectively, and the proliferation rate was tested. Meanwhile, cell conditioned medium was collected, and EV was isolated for quantitative analysis. Further, the expression of EV generation related Hif-1α/PRAS40/RAB27A pathways were detected. In vivo study, normoxic and hypoxic MSC-derived EV were used to treat rat renal IRI (right nephrectomy and left renal ischemia 45 minutes) model for 24 hours. Renal pathology score and functions were tested to evaluate the therapeutic effects.

Results: The proliferation of MSC was not affected by hypoxia culture (3%), but hypoxia could promote EV production significantly. Meanwhile, Hif-1α/PRAS40/RAB27A pathways were activated under hypoxia conditions. In vivo, MSC-EV reached the injured kidneys after 24 hours. Further, compared with normal oxygen MSC-EV, hypoxic MSC-EV treatment rats showed lower renal tubular injury and serum creatinine levels.

Conclusion: Hypoxia could promote the generation of MSC-EV and enhance its therapeutic effect on renal IRI, and the regulation of Hif-1α/PRAS40/RAB27A pathways may play an important role. The results will provide a new research idea for the efficient acquisition and utilization of MSC-EV in renal IRI treatment.

UP-184

Open Nephrectomy versus Laparoscopy: Comparative Retrospective Study of 100 Cases

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Introduction and Objective: The laparoscopic simple nephrectomy is a relatively young technique in urology. It is being commonly used worldwide. The aim of our study was to compare the simple open nephrectomy to the laparoscopic nephrectomy, and to highlight the predictive factors of each comparison parameter in the laparoscopic nephrectomy group.

Materials and Methods: Between 2005 and October 2017, 100 nephrectomies for non-tumoral benign pathologies were chosen in the department of urology in Sahloul. Fifty patients were operated on by laparoscopy and 50 patients were operated on by open procedure. In the laparoscopic nephrectomy group, all our patients were operated on by a retroperitoneal approach.

Results: The two groups of patients were statistically comparable in terms of epidemiological characteristics (age, sex, weight, body mass index, antecedents, etc.), in terms of current medical history, physical examination data, and kidney to remove. The average size of the kidneys removed by laparoscopy was significantly lower than that of the kidneys removed by open sky (7.51 cm versus 10.69 cm) and the difference was significant ($p < 0.001$). Lithiasic pathology was the main cause. At nearly equal intraoperative complication rates, laparoscopic simple nephrectomy was superior to open nephrectomy in terms of blood loss and transfusion, type of analgesia, dose of paracetamol received, early postoperative complications, early and late postoperative pain, duration of hospital stay, and duration of convalescence. In the laparoscopic nephrectomy group: The size of the kidneys removed was the predictive factor for increased intraoperative complications; surgeon experience was the predictive factor in decreased postoperative analgesia, decreased early postoperative complications, and decreased length of hospital stay.

Conclusion: Laparoscopy is currently a well-coded first safe pathway; it is a technique of choice in the treatment of upper urinary-tract pathologies including nephrectomy.

UP-185

Comparison of Acute Phase Response in Patients Undergoing Open Versus Laparoscopic Nephrectomy

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Introduction and Objective: Laparoscopic nephrectomy is greatly increasing and become the standard of care in candida patients, but there remains little evidence on the stress response following the procedure. The aim of this study was to evaluate the inflammatory response to laparoscopic nephrectomy and compare it with the response generated by open surgery.

Materials and Methods: This was a prospective randomized comparative study involving 60 patients divided into 2 main groups (open and laparoscopic) each of them containing 30 patients. Blood samples were obtained from all patients preoperatively, 24 h and 48 h postoperatively and examined for: differential white blood cells (WBC) count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and interleukin 6 (IL-6). Also, data regarding operative time, intraoperative blood loss, postoperative fasting period, hospital stay period and time needed till return to work were collected and compared.

Results: There was no significant statistical difference between both study groups preoperatively. WBCs count, CRP and IL-6 were increased postoperatively in both groups, but the increase was more in open than in the laparoscopy group. The difference was highly significant in CRP and IL-6. There was no significant difference between the increases in the ESR in the 1st day postoperative in both groups, while the increase was higher in open group at 2nd day postoperative. There was no difference between both groups regarding operative time. The amount of intraoperative blood loss, postoperative fasting period, hospital stay period and days till return to work were higher in the open group.

Conclusion: This study shows that when compared with open surgery, laparoscopic nephrectomy results in a less pronounced inflammatory response and more pronounced anti-inflammatory action. So, the laparoscopic nephrectomy is less stressful than open surgery.

UP-186

Prevalence of Histopathological Subtypes of RCC in a Middle Eastern Population: A High Prevalence of Chromophobe RCC

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Introduction and Objective: The incidence of RCC is on the rise in the Western hemisphere and is reported to vary widely amongst different populations. The histopathological subtypes also vary based on genetic and geographic factors. There is paucity of data on the subtype distribution and prognosis in the Middle East region and minimal reporting on disease recurrence and progression. We herein examine the incidence and relative frequency of pathological subtypes of RCC in a tertiary Middle Eastern referral center.

Materials and Methods: Between the dates of January 2012 and January 2018 a total of 196 patients underwent surgery for renal tumors at the American University of Beirut Medical Center (AUBMC). Data collection and chart review were completed after approval from the Institutional Review Board and included patient and tumor characteristics and predisposing risk factors. Special attention was directed towards pathologic subtypes of RCC. The distribution of the subtypes was then compared to a previous cohort presenting between 2002 and 2012 at AUBMC,

and the incidence published in contemporary reports in the Western literature.

Results: A total of 197 patients underwent radical nephrectomy or nephron sparing surgery for renal tumors. Final histopathology revealed clear cell RCC (ccRCC) in 119/197 = 59.8% of this cohort; papillary RCC (pRCC) in 30/197 = 15.1%. Chromophobe RCC (chrRCC) was identified in 17/197 = 8.5%. When excluding benign renal tumors (e.g. atypical AML, oncocytoma, or unclassified benign), there were 176 malignant solid tumors with the following distribution: ccRCC 119/176 = 67.6%, pRCC 30/176 = 17%, chrRCC 17/176 = 9.7% (reported 3-5% in the literature), others 10/176 = 5.7%. In our early cohort (2002-2012), the proportion of chrRCC was 23%, and the proportion of low stage disease (pT1-pT2) was 80, similar to the current cohort. (86%). There was a significantly higher proportion presenting with higher stage disease (pT3-pT4) in the pRCC subtype compared to ccRCC and chrRCC. (43% vs. 9.2% and 13.6%, respectively, p=0.02).

Conclusion: These data demonstrate a relatively high prevalence of chrRCC in the Middle East, about double than what is reported in the literature. This proportion is not as high as what we have previously reported in an earlier cohort and could be related to racial, genetic, or referral bias. The majority of patients with chRCC and ccRCC presented with low stage disease compared to pRCC which had a trend to higher stage at presentation.

UP-187

Validation of the RENAL Nephrometry Score for Tumor Complexity and its Concordance with the Surgical Approach Performed and Application of Nephron Sparing Surgery

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Introduction and Objective: The RENAL nephrometry score (NS) was introduced by 10 years ago and is based on five critical and reproducible anatomic features of solid renal masses. We evaluated the correlation of tumor complexity using RENAL-NS and the type of renal surgery performed in a tertiary referral center in the Middle East, during the introduction of the Da'Vinci Robotic system.

Materials and Methods: Between January 2012 and January 2018, 196 patients underwent surgery for renal tumors. Of these, cross sectional imaging with CT or MRI was available for review in 132 patients that were included in the study after Institutional Review Board approval. 84/132 patients underwent nephron sparing surgery (Open partial nephrectomy (OPN) or Robotic Assisted Partial Nephrectomy (RAPN)), and 48/132 patients underwent radical nephrectomy (open radical nephrectomy (ORN) or laparoscopic/robotic radical nephrectomy (LRN/RARN), demographic data including patient and tumor characteristics/complexity were collected and analyzed using SPSS v24.0 with specific examination of the type of surgery performed.

Results: Table 1 depicts the cumulative tumor complexity compiled according to low, moderate, or high RENAL-NS (low for 4, 5, 6, moderate for 7, 8, 9, and high for 10, 11, 12). NSS was applied for the majority (80%) of patients with low and moderate complexity tumors (RENAL-NS=4, 5, 6 and 7, 8, 9), and radical nephrectomy was applied to 20% of these patients. By contrast, radical nephrectomy was applied the majority of patients (79%) with high complexity tumors (RENAL-NS=10, 11, 12). 9/48 patients (19 %) who underwent Radical Nephrectomy group, had low complexity tumors, and majority of this subgroup had LRN (Table 3). In NSS cohort, minimally invasive approach (LPN/RAPN) was utilized in 59 and 69% for tumors with low and moderate complexity, respectively and in 50% for high complexity tumors (Table 2).

Conclusion: Tumor complexity is not the only factor influencing the decision for adopting NSS versus radical nephrectomy. RENAL-NS standardizes and effectively stratifies renal masses facilitating the decision for NSS and the application of minimally invasive approaches such as RAPN. We recommend prospective and meticulous recording of the RENAL-NS for all patients presenting with renal tumors and its inclusion in tumor registries.

UP-188

Quantitative Proteomic Analysis of Renal Cell Carcinoma

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Introduction and Objective: We aimed to conduct an extensive quantitative proteomic analysis of renal cell carcinoma (RCC) and detect the proteins and biological processes which may play a role in the critical steps of oncogenesis and tumor progression.

Materials and Methods: Proteins were isolated from the tumor and adjacent normal tissues of 13 patients who underwent nephrectomy due to RCC. Obtained peptides were chemically labelled with different dimethyl isotopes. Liquid chromatography-coupled tandem mass spectrometry (LC-MS/MS) was used to distinguish cancer/normal peptides. The mix samples were fractionated by Strong Cation Exchange chromatography prior to LC-MS/MS analysis for a comprehensive proteome coverage. Only the proteins that had tumor/normal ratios in a minimum of 70% of the 13 patients were used for data analysis. In order to identify significantly UP- and downregulated proteins in the cancer tissue compared to adjacent normal tissue, a two-tailed Wilcoxon signed rank test was employed. Gene Ontology enrichment analysis of significantly regulated proteins was conducted using the PANTHER v13.1 webtool to reveal predominant biological processes.

UP.187, Table 1: Proportion of patients undergoing radical nephrectomy vs NSS according to RENAL-NS.

	Total	Radical nephrectomy	NSS
Low RENAL-NS (4,5,6)	46	9(20%)	37 (80%)
Moderate RENAL-NS (7,8,9)	48	9(19%)	39 (81%)
High RENAL-NS (10,11,12)	38	30 (79%)	8 (21%)

UP.187, Table 2: Use of minimally invasive laparoscopic or robotic surgery in NSS.

NSS N=84	Minimally invasive (LPN or RAPN)	OPN
Low RENAL-NS (4,5,6)	22 (59%)	15(41%)
Moderate RENAL-NS (7,8,9)	27 (69%)	12 (31%)
High RENAL-NS (10,11,12)	4 (50%)	4 (50%)

UP.187, Table 3: Use of minimally invasive laparoscopic or robotic surgery in radical nephrectomy.

Radical nephrectomy N=48	Minimally invasive (LRN or RARN)	ORN
Low RENAL-NS (4,5,6)	8 (89%)	1 (11%)
Moderate RENAL-NS (7,8,9)	4 (44.5%)	5 (55.5%)
High RENAL-NS (10,11,12)	17 (57%)	13 (43%)

Results: Mean age of the patients was 57.33 (47-74) years. All of the excised RCCs were of clear cell subtype. ISUP grade and pathological T stage distributions were as follows: grade 2 (n= 4), 3 (n= 4), 4 (n= 5) and pT1a (n= 2), pT1b (n= 3), pT3a (n= 8). Two patients had metastatic disease at the time of surgery, while the others had localized/locally advanced disease. A total of 10,160 RCC-associated proteins were identified. The most commonly upregulated and downregulated biological processes in tumor samples were antigen processing-presentation, glycolysis, RNA splicing and ferredoxin metabolic process, oxidative phosphorylation, tricarboxylic acid cycle, respectively. Regarding the comparison between RCC grades, fatty acid beta-oxidation and cell-matrix adhesion were the most significantly upregulated and downregulated processes, respectively in grade 4 vs. grade 3 RCCs. Proteins that were involved in RNA splicing were found to be significantly downregulated in grade 4 vs. grade 2 RCCs.

Conclusion: To our knowledge, results of this study represent the largest proteome of RCC. A Warburg-like protein profile, which is characterised by elevated glycolysis and glycogen metabolism and reduced mitochondrial energy metabolism, have been detected in RCC samples. Biological processes that exhibit significant difference between RCC and normal tissue may shed light to discovery of biomarkers. Differences in RCC grades in terms of their proteomic profile and up/downregulated biological processes might be useful to generate novel therapeutic targets to slow down disease progression.

UP-189

Is Pre-Operative Neutrophil-Lymphocyte Ratio a Red Flag Which Can Predict High Risk Pathological Characteristics in Renal Cell Carcinoma?

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Introduction and Objective: Renal cell carcinoma (RCC) is known to invoke both immunological and inflammatory responses. While the neutrophils mediate the tumour induced inflammatory response, the lymphocytes bring about the various immunological events associated with it. The Neutrophil-Lymphocyte ratio (NLR) is a simple indicator of this dual response. We investigated the association between pre-operative NLR and histopathological prognostic variables of RCC with aim of finding out whether it can be of value as a red flag capable of alerting the clinician as to the biological character of the tumour under consideration.

Materials and Methods: Pre-operative NLR and clinicopathological variables namely histological subtype, nuclear grade, staging, lymphovascular invasion, capsular invasion, tumour necrosis, renal sinus invasion and sarcomatoid differentiation of sixty patients who underwent Radical or Partial nephrectomy were analysed to detect the association between the two.

Results: We found that mean pre-operative NLR was significantly higher in Clear cell carcinomas (3.25 ± 0.29) when compared with non-clear cell carcinomas (2.25 ± 0.63). There was a linear trend of NLR rise as the stage of the disease advanced. A significant rise in pre-operative NLR was noted in tumours with other high-risk histopathological features such as capsular invasion and sarcomatoid differentiation. The NLR elevation is also observed with tumor grade, lymphovascular invasion, tumor necrosis and sinus invasion, however, the association is statistically insignificant.

UP.189, Table 1: Variation in Pre-operative NLR across various clinicopathological categories.

Characteristics	NLR (Mean ± SEM)	p-value
Tumour Size		
Small renal mass (<4cm)	2.63 ± 0.47	0.25
Large renal mass (>4cm)	3.3 ± 0.32	
Stage€		
1	2.41±0.39	0.01*
2	2.91±0.43	
3	3.21±0.70	
4	4.48±2.08	
Histological Type$		
Clear cell carcinomas	3.25±0.29	0.03*
Non clear cell carcinomas	2.25±0.63	
Nuclear Grading (only for Clear Cell Carcinomas)		
High	3.06±0.34	0.90
Low	2.86±0.5	
Lymphovascular invasion ≤		
Present	3.8±0.67	0.19
Absent	2.92±0.29	
Capsule≤		
Involved	3.96±0.45	0.004*
Intact	2.56±0.3	
Renal sinus involvement ≤		
Positive	3.77±0.58	0.24
Negative	2.96±0.30	
Tumour necrosis		
Present	3.44±0.44	0.32
Absent	2.88±0.33	
Sarcomatoid differentiation		
Present	5±1.12	0.05
Absent	2.96±0.27	

€ - ANOVA, post hoc by Tukey's test
# indicates significant differences between stages 1 vs 3 and 1 vs 4. * indicates significant P value.
≤ and $ compared by using independent t test. Other groups were compared by $Mann whitney U test.

Conclusion: Pre-operative measurement of NLR is a simple test which may provide an early clue of various high-risk pathological features of renal cell cancer.

UP-190

Transurethral Intussusception Technique of Complete Distal Ureterectomy with Bladder Cuff in Females with Upper Tract Urothelial Cell Carcinoma: A New Technique

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Introduction and Objective: Several methods of complete distal ureterectomy with bladder cuff after radical nephrectomy in urothelial cell carcinoma have been described. We presented a new technique of complete distal ureterectomy with bladder cuff in females that entitled transurethral intussusception technique.

Materials and Methods: In this technique, a ureteral catheter is placed before nephrectomy with cystoscopy. After nephrectomy, the ureter is released as far distally as possible to the bladder whether an open or laparoscopic approach and the catheter is secured to the distal portion of the ureter. The patient is moved to the lithotomy position, and the ureter is intussuscepted into the female urethra with retrograde traction. The distal ureter and bladder cuff is removed from the urethra and surrounding the cuff marked with a few stitches and cut off and the remaining ad-

hesions of the ureter are released and removed, and the defect is sewn.

Results: The avoidance of a second incision in performing an open distal ureterectomy.

Conclusion: This approach should be reserved for proximal tumors. The advantage is the avoidance of a second incision in performing an open distal ureterectomy and the potential for seeding is less.

UP-191

Bladder Recurrence of Upper Urinary Tract Urothelial Cell Carcinoma After Nephroureterectomy – A Clinicopathological Study

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Introduction and Objective: To study the phenomenon of bladder recurrence after nephroureterectomy for upper tract urothelial cell carcinoma (UTUCC) and factors related to it.

Materials and Methods: Clinicopathologic data of patients diagnosed with UTUCC who underwent nephroureterectomy between January 2008 and December 2012 were retrieved from the computerized hospital information system. Clinical and pathologic data was reviewed. Factors which correlated with bladder recurrence were investigated.

Results: Data of 65 patients was analysed. Median follow up was 42 months. The pelvicalyceal system was the most common site for both unifocal tumours (41%), as well as multifocal tumours (36%). Twenty-nine operations were laparoscopic (45%). Open bladder cuff technique was used in 50 operations (77%) while the rest used the Abercrombie technique for resection of the distal ureter. Resection margins at the bladder were positive in seven patients; all after open bladder cuff technique. Eleven patients (16%) developed bladder tumours on follow up, out of which seven had primary UTUCC in the lower ureter (64%). The majority of recurrence involved high stage primaries (T3 in 50%) and uniformly high-grade tumours. All recurrences were after NU with open bladder cuff technique. Most of the patients were diagnosed with bladder tumour recurrence on routine check cystoscopy. The grade of recurrence in the bladder was high in 9 out of 11 cases. Median time to recurrence was 10 months. Four patients had simultaneously detected bladder and upper tract tumours. While staging of these twin tumours did not correlate, all 4 pairs had the same tumour grade.

Conclusion: Synchronous tumours were more common in our experience than previously reported. The Abercrombie technique was not inferior to open bladder cuff technique with regard to either negative resection margin or recurrence. Bladder recurrence tended to occur early in follow up and was predominantly from muscle-invasive, high-grade UTUCC. Scheduled check cystoscopy tailored to the characteristics of the primary tumour is vital to identify bladder recurrence while still non-muscle invasive and amenable to endoscopic treatment.

UP-192

Preliminary Results of Phase 1 Clinical Trial of High Dose Seleno-L-Methionine in Sequential Combinations with Axitinib in Previously Treated and Relapsed Clear Cell Renal Carcinoma Patients

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Introduction and Objective: The overexpression of hypoxia induced factor 1a/2a in ccRCC leads to up-regulation of vascular endothelial growth factor (VEGF), resulting in increased angiogenesis, tumor metastasis, and treatment resistance. Using several preclinical xenograft models, we demonstrated that therapeutic doses and schedules of the selenium-containing molecules, seleno-L-methionine (SLM), and methyl selenocysteine (MSC) caused enhanced degradation of HIF1α/2α, down-regulation of oncogenic miRNA-210 and 155, up-regulation tumor suppressor miRNA-664 and LET-7b, and stabilization of tumor vasculature, yielding higher tumor drug uptake and protection from toxic side effects when combined with chemotherapeutic and VEGF-targeted agents.

Materials and Methods: We report a phase I (3+3 design) dose finding trial of SLM (2500, 3000 or 4000 µg) given orally twice daily for 14 days, followed by once a day in combination with standard dose axitinib to patients with metastatic RCC. Primary endpoint was safety, secondary endpoint is efficacy including overall response rate (ORR), progression free survival (PFS) and overall survival (OS).

Results: Twelve patients with metastatic RCC who progressed on one or more prior lines of treatment were enrolled. Six patients were treated at 4000 µg, 3 patients at 3000 µg, and three patients at 2500 µg. No dose limiting toxicity (DLT) was seen. Most common adverse events (AEs) included fatigue, diarrhea, hypertension, nausea, anorexia, cough, proteinuria and weight loss. Four of the 6 patients in the 4000 µg cohort have been assessed. Two (50%) patients achieved complete response (CR) with ongoing responses at 31 and 29 months, one patient (25%) had partial response (PR) for 24 months, and one (25%) had progressive disease (PD) at 3 months. Of the 3000 µg cohort, one (33%) patient had ongoing PR for 12 months, a second (33%) lasting 10 months, and the third (33%) had stable disease (SD) for 4 months. Of the 2500 µg cohort, one patient (33%) had ongoing PR for 21 months, one (33%) for 6 months, and one (33%) at 2 months.

Conclusion: High dose SLM is safe in combination with axitinib, with promising efficacy. Biomarker assessment is currently ongoing, and further evaluation of SLM in the treatment of ccRCC is warranted.

UP-193

Prognostic Significance of Preoperative Prognostic Nutritional Index in Patients Undergoing Nephrectomy for Non-Metastatic Renal Cell Carcinoma

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Introduction and Objective: The purpose of this study was to assess the prognostic value of preoperative prognostic nutritional index (PNI) on survival in patients with non-metastatic renal cell carcinoma (RCC) treated with partial or radical nephrectomy.

Materials and Methods: We retrospectively reviewed medical records of 480 patients with RCC who underwent partial or radical nephrectomy at two institutions between June 1994 and July 2017. Among these patients, 21 patients with lymph node or distant metastasis were excluded. Thus, the remaining 459 patients with non-metastatic RCC (307 men and 152 women, mean age of 55.8 years) were included in this study. The PNI was calculated using a selective combination of serum albumin level and lymphocyte count in the peripheral blood as previously described. The prognostic significance of various clinicopathological variables including PNI was analyzed using univariate and multivariate analysis. Discrimination was measured with the C-index.

Results: The median follow-up duration was 72 months (range 4 to 272 months). Of the total 459 patients, 49 patients (10.7%) developed local recurrence or distant metastasis and 27 patients (5.9%) died of disease during the follow-up period. In the univariate analysis, anemia, PNI, tumor size, T stage, Fuhrman's nuclear grade, sarcomatoid differentiation, and lymphovascular invasion were significant prognostic factors of recurrence-free and cancer-specific survival. The multivariate analysis identified that PNI (p=0.024), tumor size (p=0.001), T stage (p=0.001), Fuhrman's nuclear grade (p=0.002), sarcomatoid differentiation (p=0.001), and lymphovascular invasion (p=0.006) were independent prognostic factors for recurrence-free survival, whereas PNI (p=0.035), tumor size (p=0.002), T stage (p=0.004), Fuhrman's nuclear grade (p=0.025), and sarcomatoid differentiation (p=0.006) were independent prognostic factors for cancer-specific survival.

Conclusion: PNI is an independent prognostic factor for recurrence-free and cancer-specific survival in patients with non-metastatic RCC treated with partial or radical nephrectomy. These findings indicate that PNI may be a useful tool for predicting recurrence or survival in patients undergoing nephrectomy for non-metastatic RCC.

UP-194

The Current Landscape of Three-Dimensional Printing in Uro-Oncology

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Introduction and Objective: Despite its invention in 1983 and widespread use in the engineering indus-

try, Three-Dimensional (3D) printing is only starting to become adopted in Medicine and Surgery. Using medical image data acquired as part of gold standard clinical care, 3D anatomical models can be created, which can be 3D printed as an adjunct to surgical planning, simulation, and patient education. In the field of Uro-Oncology, researchers and clinicians have recognised the potential of this exciting new technology and have started integrating it into Urological practice. We review current literature regarding 3D printing and other 3D technologies in the field of Urology.

Materials and Methods: As per PRISMA guidelines, we performed a literature search including: Web of Science, EMBASE and Cochrane databases. Publications included in this study were limited only to English-language articles, published between 1980 and 2018. The search terms used were "3D printing", "urology", "surgery". This resulted in 41 articles, which were independently read in full to identify relevant studies. Suitable articles were incorporated for their merit and relevance with preference given for articles with high impact, original research and recent advances.

Results: 41 publications were included for analysis and discussion.

Conclusion: 3D printing is a promising technology with much promise in the field of Urology. However, the field is still very much in its infancy, and further research into the optimisation of the medical imaging to 3D printed anatomical model workflow is required before 3D printing is ready for widespread adoption. The variable cost of this technology was a recurrent theme in publications, and cost reductions must continue to make 3D printing a feasible adjunct in Urology. As patents expire, costs decline and the diversity of materials continues to expand, the uses of 3D printing in Urology will continue to grow.

UP-195

A Large Contemporary Experience of Renal Tumors in Young Adults and Adolescents: Clinico-Pathological Profile and Long-Term Survival Patterns

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Introduction and Objective: Renal tumors in young adult population are uncommon. We reviewed our experience of renal masses in young patients. Our objective was to analyse various clinico-pathological and survival characteristics of renal malignancy in young adults.

Materials and Methods: Medical records of patients below 45 years of age who underwent surgery for renal mass at our tertiary care centre between 2009 and 2019 were retrospectively analysed. Pertinent clinical information was compiled, including age, gender, year and type of surgery, histopathology and survival data.

Results: In total, 194 who underwent nephrectomy for suspicious renal masses were included. Mean age was 35.5 years and males were 125 (64.4%). 25 patients (12.8%) had benign disease with Angiomyolipoma being most common in 14 (7.2%). 169 (87%) patients had malignant mass and of these 155 (91.7%) were renal cell carcinomas (RCC). Clear cell variant comprised only 52% cases (n= 101). 14 (7.2%) had non-RCC malignant tumors and primitive neuroectodermal tumor was the most common histology in 5 (2.6%). T1a, T1b, T2a, T2b, T3 and T4, was seen in 53 (27.3%), 50 (25.7%), 25 (12.89%), 24 (12.3%), 36 (18.5%), 2 (1%) cases respectively. N1 and M1 disease were seen in 3 (1.5%) and 9 (4.6%) cases respectively. Partial nephrectomy was done in 74 (38%) cases of T1a/T1b disease. Kaplan Meier survival curves for progression free and overall survival were not different for partial and radical nephrectomy group in T1a or T1b disease. When compared to RCC, non RCC malignant tumors were more common in females (20.37 vs 2.61%, $p < 0.0001$), had an early age of diagnosis (27.14 vs 36.96 year, $p < 0.00001$), and had poorer progression free survival at 72 months (77.24 vs 60%, $p = 0.004$) and overall survival (88.43 vs 69.26%, $p = 0.0006$) at 6 years of follow up.

Conclusion: Renal masses in young adults are most commonly RCC but can also include a wide variety. Despite a relative preponderance of non-clear cell variety and non-RCC tumors, RCC in young adults in contemporary practice is usually organ confined and has good prognosis. As compared to RCC, non RCC malignant tumors occur in young age, are more in females and have worse prognosis.

UP-196

17p Deletions are Associated with an Aggressive Tumor Phenotype, Prevalence of Distant Metastases and Worse Prognosis in Clear Cell Renal Cell Carcinoma

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Introduction and Objective: In renal cell carcinoma new drugs have improved the prognosis of palliative patients. Currently, there are clinical trials to evaluate if patients at high risk for tumor progression benefit from adjuvant systemic therapy after surgery. For better risk stratification, new molecular markers are needed. In this study we analyzed the diagnostic and prognostic value of 17p deletions in renal cell carcinoma.

Materials and Methods: We analyzed more than 1.800 renal tumors for 17p deletions using fluorescence in situ hybridization (FISH) in a tissue microarray (TMA) format and compared the results with clinical follow up data.

Results: 1.428 of 1.809 (78.9%) tissue samples were analyzable. 72 tumors (5.04%) featured 17p deletions. Every third (24/72, 33.3%) of all chromophobe RCC showed loss of 17p; clear cell RCC (35/946, 3.7%) and papillary RCC (9/208, 4.33%) both featured 17p deletions in about 4% of the cases. In clear cell RCC the presence of 17p deletions was associated with a higher grade (p?0.0001 in Fuhrmann, Thoenes and ISUP grading), with prevalence of distant metastases ($p = 0.0077$), with advanced tumor stage ($p = 0.0416$), with larger tumor size ($p = 0.0004$) and with poorer cancer specific survival ($p = 0.0391$). Furthermore, 17p deletions were significantly associated with shortened recurrence free survival in all tumors ($p = 0.0411$), papillary RCC ($p = 0.01218$) and clear cell RCC ($p = 0.0072$). Ours follow up data was not sufficient to achieve a valid statement about the prognostic value of 17p deletions in chromophobe RCC.

Conclusion: 17p deletions are characteristic for chromophobe RCC. In clear cell RCC they are associated with unfavorable tumor features and in papillary and clear cell RCC 17p deletions are associated with poor outcome. 17p deletions are a candidate marker for future multiparametric tests to improve risk stratification of RCC patients.

UP-197

8p Deletions in Renal Cell Carcinoma are Associated with Unfavorable Tumor Features and Poor Overall Survival

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Introduction and Objective: For a better risk stratification in renal cell carcinoma, new molecular markers are needed. 8p deletions are common in renal cell carcinoma, but their prognostic role is unclear. In this study, we investigated the prognostic impact of 8p deletions and its associations with kidney cancer phenotype.

Materials and Methods: A cohort of 1.809 cancers was analyzed by dual labeling fluorescence in situ hybridization (FISH) with probes for 8p and centromere 8 in a tissue microarray (TMA) format. The results were correlated with histopathologic features and with clinical follow up data.

Results: The analysis provided interpretable FISH data in 1.474 tumors and showed substantial differences between renal cancer subtypes. The fact that an 8p deletion was only seen in 1 of 216 (0.48%) papillary carcinomas identifies this tumor as one of the very few malignant tumors where 8p deletions hardly occur. This underscores the biologic uniqueness of papillary kidney cancer, which is also defined by a highly distinct morphology. 8p deletions were found in 13.2% of 976 clear cell carcinoma, 7.8% of 77 chromophobe carcinoma, 0.84% of 119 oncocytoma, but also in several rare tumor entities including 1 of 4 collecting duct cancers, 1 of 3 multilocular cystic renal neoplasm of low malignant potential, 2 of 10 Xp11.2 translocation cancers, 3 of 18 not otherwise specified carcinoma, and in the only analyzed medullary carcinoma. In clear cell carcinoma 8p deletions were significantly associated with higher ISUP ($p = 0.0014$), Fuhrmann ($p = 0.0003$) and Thoenes grade ($p = 0.0033$) and linked to advanced tumor stage ($p = 0.0006$), large tumor diameter ($p = 0.0019$), distant metastases ($p= 0.0183$), overall survival ($p = 0.0158$) and progression free survival ($p \leq 0.0001$). In multivariate analysis, the prognostic role of 8p deletions was not independent of established clinic-pathological parameters.

Conclusion: 8p deletions are strongly linked to tumor aggressiveness in clear cell kidney cancer. Because 8p deletions are easy to measure by FISH, 8p deletion assessment may have a role in future prognosis assessment in clear cell kidney cancer, most likely in combination with other parameters.

UP-198

Is Off-Clamp Open Partial Nephrectomy Safe for T1b Tumors? A Single Center Study

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Introduction and Objective: Partial nephrectomy is nowadays considered to be the gold standard in T1 stage renal cell carcinoma. It may be performed in an open approach, laparoscopic or robot assisted. Regardless the method, the aim of the surgeon is to achieve a trifecta including no positive surgical margins, low rate of complications and as less as possible renal ischemia. As experience grows in partial nephrectomy, totally of-clamp partial nephrectomy may be performed in high volume centers. The aim of this study is to evaluate the safety of off-clamp partial nephrectomy in patients with T1b renal tumors.

Materials and Methods: This is a prospective single center study including 29 patients who underwent off-clamp open partial nephrectomy during the years 2017-2018 for T1b stage renal tumors. Median age was 57 years (21 males, 8 females). Median tumor size was 5.5 cm (4.1 – 7cm). Perioperative results including duration of surgery, blood loss, transfusion rates, use of hemostatic agents and postoperative complications using the Clavien Dindo system were recorded.

Results: Out of 29 patients, 25 completed the operation in a total off-clamp approach. In 4 patients we had to apply warm ischemia due to either hemorrhage or inability to be certain that the tumor was removed with negative surgical margins. In the 4 cases where warm ischemia was applied, the mean duration was 7 minutes. Only one patient in the ischemia group underwent radical nephrectomy due to damage of the renal vein. No patient in the off-clamp group underwent radical nephrectomy. Total blood loss was 340 ml and duration of surgery 117 minutes. No patient was transfused intraoperatively. As far as it concerns postoperative complications, 3 patients presented arteriovenous fistula and were treated successfully by arterial embolization. Moreover 4 patients presented with large hematoma requiring blood transfusion. All were treated conservatively, and no reoperation or arterial embolization was needed. In addition, 3 patients presented with urine leak during the first postoperative day but in all cases, it stopped the second postoperative day without need for intervention. Regarding oncologic results, only one patient had positive surgical margins.

Conclusion: Nephron sparing surgery without use of warm ischemia is a safe choice in patients suffering from stage T1b renal tumors in experienced high-volume centers.

UP-199

Outcomes of Radical Nephrectomy with Inferior Vena Cava Thrombectomy in the Management of Renal Cell Carcinoma

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Introduction and Objective: To study the perioperative outcomes of patients undergoing radical nephrectomy with Inferior Vena Cava (IVC) thrombectomy in the management of renal cell carcinoma and determine factors for prognosis of the disease.

Materials and Methods: A retrospective analysis of patients undergoing radical nephrectomy with IVC thrombectomy between 2006 till 2018 was done. Perioperative details along with the last available follow-up were included in the analysis.

Results: Sixty-two patients were included. The mean age (± SD) was 54.1 (± 4.9) years and 47 (75.8%) were males. The common presentation included local symptoms with haematuria (51.6%), flank pain (21.0%) while 27.4% of patients presented with systemic complaints. 27.4% of patients were diabetics, 35.5% of patients were hypertensive and 29% of patients had history coronary artery disease. The mean tumor size (± SD) was 9.4 (± 2.3) cm and the mean operative time (± SD) was 301 (± 95.6) minutes. The level of thrombus was level I in 4 patients (6.5%), Level II in 35 patients (56.5%), Level III in 10 patients (16.1%) and Level IV in 13 patients (21.0%). 18 patients (29%) underwent surgery under cardiopulmonary bypass in collaboration with the cardiothoracic team. The mean duration of hospital stay was 9.9 (± 5.6) days. Forty-nine patients (79.0%) patients had clear cell carcinoma, 6 patients (9.6%) had papillary carcinoma, 6 patients (9.6%) had Primitive neuroectodermal tumor and 1 patient (1.1%) had unclassified renal malignancy. 12.9 % of the patient had sarcomatoid differentiation. The mean overall survival was 29 ± 19 months while disease-free survival was 21.8 ± 17.1 months.

Conclusion: Radical nephrectomy with IVC thrombectomy offers good overall and disease-free survival. Patients with a higher level of thrombus, primitive neuroectodermal tumor, and sarcomatoid differentiation have a poorer prognosis.

UP-200

RENAL Score as a Predictor of Histological Results in Patients Undergoing Laparoscopic Partial Nephrectomy

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Introduction and Objective: The RENAL score is a nephrometry score that quantifies anatomic characteristics of renal tumors. The histological features have a prognostic significance in renal cancer. It has been reported a correlation between anatomical and histological features of the tumor. The objective of this study is to evaluate predictive variables of post-operative histological findings in a cohort of patients who underwent laparoscopic partial nephrectomy.

Materials and Methods: We evaluated a retrospective cohort of consecutive patients who underwent laparoscopic partial nephrectomy by a single surgeon, between 2009 and 2018. The preoperative images were reviewed, and RENAL score was determined for each lesion. Demographic data, tumor characteristics, histological features and surgical outcomes were analyzed. The logistic regression analysis estimated the relative importance of the predictive factors on tumor grade and surgical margin.

Results: A total of 87 patients were included. Mean tumor size was 2.92 cm (1-7 cm). Mean age was 57.2 years (23-85 years). Mean operative time was 145.7 min (60-270 min). Mean bleeding was 299 mL (20-2000 mL). 88% of lesions were T1a, 7% T1b, 2% T3a, and 13.8% were benign. Surgical margins were positive in 18.4% and negative in 79.3%, 2.3% were not informed. 43.9% had low complexity RENAL score, 51.5% of moderate complexity and 4.5% of high complexity. The multivariate analysis identified positive surgical margin as statistically significant predictors for high-grade lesions (P= 0.049). Other factors such as tumor size, renal score had strong association without statistical significance (P= 0.14 and 0.13 respectively).

Conclusion: Current findings suggest that the anatomical characteristics of the tumor may be related to post-operative histological findings. The presence of positive surgical margin, tumor size and renal score were, according to the literature available, associated with high-grade lesions. There is a need for larger prospectively conducted studies investigating this association.

UP-201

Nephron Sparing Surgery for Anatomically Difficult Cases, An 8 Years Review

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Introduction and Objective: Nephron sparing surgery is an effective treatment for RCC. Oncological outcome is equivalent to radical nephrectomy, with the added functional advantage. It is underutilized, especially in tumors in anatomically challenging positions like central and hilar positions.

Materials and Methods: Hospital case notes and electronic records of 101 consecutive cases of partial nephrectomies, conducted at a single center over the last 8 years were analysed. Data was assessed on the tumour number, size, position (upper zone, central/hilar and lower zone), histology, margin status, operative time, ischemia time, peri-operative complications, length of stay and recurrences so far. This data was analysed according to tumour site (hilar/central vs polar).

Results: 26 cases were in the mid zone, 33 were lower and 42 were upper zone. 57 were elective and 2 cases were absolute, 4 were imperative, 1 case was a relative indication for nephron sparing surgery. 8 had bilateral tumours. Cold ischemia was used in 1 cases of the time (28 mins), warm ischemia in 20 cases (average 15.3 mins) and no arterial clamping in 87 cases (zero ischemia). The collecting system was opened in 18 cases. Average operative time was 141 min and average length of stay 10.6 days (range 1-21 days). To date there have been no recurrences or metastatic disease.

Conclusion: There was no difference in these results between central/hilar tumours as opposed to upper

and lower pole tumours. Nephron sparing surgery for central and hilar tumours is safe and effective. We compare results to other published series.

UP-202

Nephron Sparing Surgery and Renorrhaphy - Outcomes from a Modification of Technique

Goonewardene S

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Introduction and Objective: Nephron sparing surgery is an effective treatment for RCC. Oncological outcome is equivalent to radical nephrectomy, with the added functional advantage. The renorrhaphy closure of the defect usually involves closure with a superficial and deep layer of sutures to close the collecting system. We report outcomes from a modification of technique for renorrhaphy.

Materials and Methods: Hospital case notes and electronic records of 101 consecutive cases of partial nephrectomies, conducted at a single center over the last 8 years were analysed. The method of renorrhaphy involves use of a deep layer of suture (liver suture), plus Evicel and an oxidized cellulose bolster with superficial sutures to hold the bolster in place. Data was assessed on the peri-operative complications, length of stay, transfusion rate and return to theatre.

Results: 26 cases were in the mid zone, 33 were lower and 42 were upper zone. 57 were elective and 2 cases were absolute, 4 were imperative, 1 case was a relative indication for nephron sparing-surgery. 8 had bilateral tumours. Cold ischemia was used in 1 (28 mins), warm ischemia in 20 cases (average 15.3 min) and no arterial clamping in 87 cases (zero ischemia). The collecting system was opened in 18 cases. Average operative time was 141 min and average length of stay 10.6 days (range 1-21 days). The average blood loss was 386 mL. There were no intraoperative complications or conversions to nephrectomy. 3 cases were transfused < 2 units. There were no returns to theatre for bleeding. Post-operative complications (Clavien grade 2) were wound infection x2 and chest infection. To date, there have been no recurrences or metastatic disease.

Conclusion: This demonstrates application of Evicel with a bolster and liver sutures can give good patient outcomes.

UP-203

Low Preoperative Serum Cholesterol Level Predicts Unfavorable Oncologic Outcome Among Patients with Non-Metastatic Clear Cell Renal Cell Carcinoma of ≤ 7 cm on Preoperative Imaging

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Introduction and Objective: To investigate the prognostic ability of preoperative total cholesterol (TC) for oncologic outcome in non-metastatic clear-cell renal cell carcinoma of ≤ 7 cm on preoperative computed tomography.

Materials and Methods: We retrospectively reviewed 1,637 patients who underwent surgery for solid renal masses ≤ 7 cm (2005-2014). We included 1,074 patients after exclusion of benign pathology, non-clear cell, conditions interfering with TC, metastasis, regional lymphadenopathy, positive margin and follow-up <12 months. According to cut-off values of 140, preoperative TC groups were defined as high (≥140) and low (<140). Mann–Whitney U and c2 tests were used for continuous and dichotomous variables. Univariate and multivariate Cox regression analysis was used to predict factors affecting recurrence and survival. Kaplan-Meier curve was used for survival analysis.

Results: At a median age of 56 years with a median follow-up of 63 months, 42 patients had a recurrence (3.9%). Low TC was common among men (p = 0.003) and had a higher monocyte-lymphocyte ratio (p = 0.003). TC was a predictor for recurrence-free, cancer-specific, and overall survival (HR 0.31, p = 0.001 and HR 0.37, P= 0.048 and HR 0.49, p= 0.027, respectively). Low TC was significantly associated with worse 10-years recurrence-free (85.4% vs. 94.8%), cancer specific (93.3% vs. 95.4%) and overall (79% vs. 88.1%) survival (p < 0.001, p = 0.005, and p = 0.001, respectively).

Conclusion: The preoperative TC is an independent prognostic marker for recurrence-free, cancer-specific and overall survival after curative surgery for non-metastatic clear cell renal cell carcinoma of ≤ 7cm on preoperative imaging.

UP-204

Survival Analysis of Kidney Cancer in Disseminated Stage

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Introduction and Objective: Kidney cancer incidence rates vary substantially worldwide. It ranks 13th in incidence, 16th in mortality and its prevalence is near 3%. The objective was to analyze the survival of kidney cancer in disseminated stage according to the treatment administered in the public hospitals of the Autonomous Community of Madrid (CAM).

Materials and Methods: Patients diagnosed with kidney cancer in public hospitals in the Autonomous Community of Madrid between 1990 and 2012. The assignment of the database of the Central Registry of Tumours of the System of Cancer Data Exchange (SIDC) of the CAM was requested. The variables analyzed were age, sex, date of diagnosis, histology, location, stage and tumour extension, treatment, cause of death and survival. A descriptive population study and Kaplan-Meier survival analysis were performed.

Results: The study included 2933 patients diagnosed with kidney cancer. 2023 men (69%) and 910 women (31%). The mean age at diagnosis was 63 years. The median overall survival was 144.1 ± 8.9 months, and a cumulative survival of 81%, 66% and 53% at 1, 5, and 10 years from diagnosis. Patients with disseminated renal cell carcinoma, the combined treatment "surgery + systemic" showed greater survival versus "systemic" without statistical significance (p= 0.06). Comparisons of "Surgery" versus "Systemic" and "Surgery" versus "Surgery + Systemic" also did not obtain statistical significance (p= 0.76 and p= 0.24, respectively). Patients with transitional cell carcinoma histology show differences between "systemic" versus "surgery" (in favour of the first, p= 0.03). However, "Surgery + Systemic" versus "Surgery" and "Surgery + Systemic" versus "systemic" did not reach significance (p= 0.06 and p= 0.51, respectively).

Conclusion: According to the results of our study: Patients with disseminated renal cell carcinoma obtain better survival when management is performed surgical and systemic combined, without significantly difference; Patients with transitional cell carcinoma reach greater survival when performing systemic treatment in monotherapy.

UP-205

Long Term Outcomes for the Modified Transurethral Technique in the Management of the Distal Ureteric Stump during Radical Nephroureterectomy

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Introduction and Objective: The modified transurethral technique during radical nephroureterectomy, is a method of controlling the distal ureteric stump using endoscopic Endoloop ligation to ensure en-bloc excision of the bladder cuff and prevent spillage of upper tract urine into the perivesical space. In a series of 13 patients, the technique was found to be oncologically safe. We now aim to present the long-term oncological outcomes of this technique and compare them with the endoscopic pluck technique and all open techniques performed at a single Australian Centre.

Materials and Methods: All patients with upper tract urothelial carcinoma undergoing radical nephroureterectomy at Western Health between July 2004 and October 2017 were included in our analysis. Surveillance followed a standardized protocol of imaging and cystoscopies. Data collected includes demographics, operative technique used, perioperative complications, and long-term oncological outcomes.

Results: In total, 66 patients were identified meeting inclusion criteria. The male to female ratio was 67:33% respectively and the median age at time of surgery was 70.9 years. 53% underwent the Endoloop technique, 22.8% underwent the pluck technique whilst the remaining 24.2% underwent open techniques via transvesical or extravesical approaches. Median follow up was 3.94 years. Only one patient was found to have perivesical recurrence, having undergone the pluck technique with inadvertent avulsion of the distal ureter. Overall median operative time for the Endoloop technique was 4.5 hours, 4 hours for pluck and 5.4 hours for open techniques. Overall local recurrence and metastatic free survival years was 4.51 for the Endoloop technique, compared to 3.95 for the pluck technique and 3.74 for open techniques.

Conclusion: The modified transurethral technique appears to be technically less time consuming whilst still upholding traditional oncological procedures. Complete en-bloc excision of the distal ureter is ob-

tained, with no perivesical recurrence reported and improved overall local recurrence and metastatic free survival years.

UP-206

HIF/PHF8/b-Catenin Axis Identifies a Therapeutic Target in Clear Cell Renal Cell Carcinoma

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Introduction and Objective: Clear cell renal cell carcinoma (ccRCC) is a common urologic malignancy, and most of them are associated with loss of von Hippel-Lindau tumor suppressor (pVHL) function and deregulation of hypoxia pathways. Epigenetic aberrations are commonly found and involved in the most important signaling pathways (VHL/HIF pathway) in ccRCC. Understanding the extent of epigenetic changes occurring in ccRCC and the underlying mechanisms is crucial to successful clinical translation of epigenetics in ccRCC.

Materials and Methods: ACHN and 786-O cell lines were used in our study. To investigate the effect of PHF8 on the proliferation of ccRCC, CCK8, clonogenic, EdU assays and subcutaneous xenografts assays were used. To analyze the metastasis changes, transwell assays, wound healing assays and caudal vein injection models were conducted. In addition, 154 tissue samples of ccRCC patients were used in our study. Western blot and immunohistochemical staining were used to investigate the expression of the proteins.

Results: By using the 154 tissue samples of ccRCC patients, we found that there was an obvious relationship between the PHF8 expression and the malignancy degrees, as well as metastasis of ccRCC. In *in vitro* cell model and *in vivo* subcutaneous xenografts, we found that down-regulated PHF8 might result in reduced proliferation, invasion and migration. Overexpression of PHF8 in these cells could lead to increased proliferation, invasion and migration. Mechanistically, by using hypoxia treatment and shRNA technique, we found that PHF8 was regulated by HIF. Moreover, we found PHF8 could regulate the expression of b-catenin and its downstream molecules, cyclinD1 and MMP9 and so on.

Conclusion: PHF8 was associated with the progression of ccRCC and HIF/PHF8/β-catenin axis plays important roles in ccRCC. Therefore, the HIF/PHF8/β-catenin axis could serve as a potential biomarker for ccRCC and is also a promising therapeutic target in combating ccRCC.

UP-207

Nephron-Sparing Surgery in Solitary Kidney Tumors

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Introduction and Objective: To assess the oncological and long-term functional results of nephron sparing surgery in patients (pts) with solitary kidney tumors.

Materials and Methods: 82 pts with solitary kidney tumor who had undergone partial nephrectomy were analyzed. The mean age was 60.3 (29–77) years. Median tumor size was 32 mm (12-100mm). Median sum RENAL score was 6 (4-12). Median preoperative glomerular filtration rate (GFR) was 56 (31-91) ml/min/1.73m2. Chronic kidney disease stage III was diagnosed in 30 (36.6%) pts. Median follow up time was 54 (6-147) months.

Results: Open partial nephrectomy was performed 71 (86.6%) pts and laparoscopic partial nephrectomy - 10 (12.2%), and radiofrequency ablation - 1 (1.2%) pts. Warm ischemia was used in 25 (30.5%) pts, without ischemia in 57 (69.5%) cases. Median ischemia time was 15 min (7-25). The median blood loss was 500 (200-800) mL. Median postoperative GFR was 50.6 (24.6-98) mL/min/1.73m^2. Complication rate was 8.5%. Acute reduction in renal function with immediate hemodialysis was required in 2 (2.4%) pts. Complications was correlated with RENAL score (R=-0.25) and endophytic location of tumor (R=-0.24) and preoperative GFR (R=-0.42). Clear cell RCC was diagnosed in 69 (84.4%) pts, papillary - 5 (6%) pts, chromophobe - 4 (4.8%), mixed types - 1 (1.2%), angiomyolipoma in 1 (1.2%) pts, oncocytoma in 2 (2.4%) pts. Positive surgical margin was diagnosed in 2 (2.4%) pts. 5-year progression free survival was 57.5% and overall survival was 86.4%, cancer-specific survival - 87.8%. Probability of death due to RCC progression correlated only with presence of sarcomatoid component (R = 0.39) and necrosis in tumor (R = 0.28) and Fuhrman grade (R = 0.37) and types of RCC (R = 0.42) p <0.05. Statistically significant correlation was revealed between pT stage (R = 0.33), presence of sarcomatoid component (R = 0.28) and necrosis in tumor (R = 0.25) and Fuhrman grade (R = 0.43) and probability of disease progression (p <0.05)

Conclusion: Partial nephrectomy of single kidney is an effective method of treatment of RCC with good long-term functional and oncological results.

UP-208

Non-Clear Cell Renal Cell Carcinoma: 25 Years of Experience

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Introduction and Objective: Recently there is a trend towards higher rates of incidence of non-clear cell renal cell carcinomas (RCC). The aim of our study was to evaluate prognostic factors that influence on the probability of recurrence and progression of disease, to assess progression-free (PFS) and cancer-specific survival (CSS).

Materials and Methods: Analysis of database included 2040 localized and locally-advanced RCC patients who undergone surgery of kidney tumor in our institution since 1993 till 2018. Non-clear cell RCC was identified in 265 (13%) patients. Mean age of patients was 57.3 (16-76) years. Papillary RCC types was diagnosed in 120 (6.7%) patients, chromophobe in 102 (5.7%), collecting-duct carcinoma in 4 (0.2%), mixed types in 18 (1.0%) and other rare variants of RCC in 10 (0.6%) patients. Pathological stage pT1a was diagnosed in 126 (47.4%) patients, pT1b in 67 (25.2%) patients, pT2a in 17 (6.4%) patients, pT2b in 6 (2.2%), pT3a in 28 (10.5%), pT3b in 3 (1.1%), pN+ in 17 (6.4%) patients. Median follow-up time was 26 mo. (1-258mo). Progression disease was diagnosed in 14 (5.2%) patients and 18 (6.7%) patients died from all reasons and 9 (3.3%) patients died due to progression of RCC.

Results: Statistically significant correlation was revealed between pT stage (R=0.27), tumor size (R=0.272), vascular invasion (R=0.44), Fuhrman grade (R=0.15), and stage pN+ (R = 0.19), types of non-clear cell RCC (R = 0.17) and probability of disease progression (p <0.05). Probability of death due to RCC progression correlated only with pT stage (R = 0.16), tumor size (R = 0.12), vascular invasion (R = 0.25), stage pN + (R = 0.14) and Fuhrman grade (R = 0.18) p <0.05. Five-year PFS and CSS for papillary RCC type 1 was 93.1% and 93.5%, papillary RCC type 2 - 70.3% and 77.4%, for chromophobe – 93.4% and 97.1%, respectively. Cox regression analysis impossible to conduct due to small number of completed cases.

Conclusion: The most important prognostic factors that have significant influence on disease recurrence and cancer-specific death in non-clear cell RCC patients were pT and pN+ stage, tumor size, presence of vascular invasion and Fuhrman grade.

UP-209

Laparoscopic Partial Nephrectomy: 15 Years of Experience

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Introduction and Objective: Laparoscopic partial nephrectomy (LPN) has shown to be technically feasible and oncologically safe with better functional results. The aim of the study was to assess long-term functional and oncologic results of LPN.

Materials and Methods: 506 patients with small renal masses were included in the study. Mean age was 56.4 (16-81). Mean tumor size was 30 mm (9-90mm). Median preoperative glomerular filtration rate (GFR) was 75 (64-87) mL/min/1.73 m^2. Bilateral RCC was diagnosed in 17 (3.3%) patients and solitary kidney tumor in 7 (1.4%). Progression disease was diagnosed in 13 (2.5%) patients and 9 (1.8%) patients died from all reasons and 4 (0.8%) patients died due to progression of RCC.

Results: Median follow up time was 17 (1-136) months. Warm ischemia was used in 265 (52.4%) pts, without ischemia in 216 (42.6%) and selective ischemia in 25 (5%) cases. Median ischemia time was 20 min (16-26). Median operating time was 120 min (100-150min). The median blood loss was 125 (50-300) mL. Median postoperative GFR was 67 (56-81) mL/min/1.73 m^2. Complication rate was 7.9%. Pathological stage pT1a was diagnosed in 369 (73%) patients, pT1b in 54 (10.7%) patients, pT2a in 5 (1%) patients, pT2b in 1 (0.2%), pT3a in 17 (3.3%), pT3b in 3 (1.1%), benign kidney tumors in 60 (11.8%) patients. Clear cell RCC was diagnosed in 318 (62.8%), papillary RCC type 1 in 37 (7.3%) patients, papillary RCC type 2 in 21 (4.2%) patients, chromophobe in 43

(8.5%), mixed types in 4 (0.8%) and benign kidney tumors in 60 (11.8%) patients. 5-year recurrent-free survival was 95%; cancer-specific and overall survival was 97.2% and 95.2%, respectively.

Conclusion: LPN is feasible and effective treatment option for small renal masses.

UP-210

Significance of Percutaneous Biopsy in the Clinical Management of Renal Masses

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Introduction and Objective: Percutaneous renal mass biopsy is increasingly used in the management of renal masses. The objective of our study was to determine the significance of percutaneous renal mass biopsy and its impact on clinical management.

Materials and Methods: We did a retrospective study of all patients who had image guided Percutaneous renal mass biopsy in the Betsi Cadwaladr University Health Board in Wales, UK from April 2011 to April 2019. Data were collected from Welsh Clinical Portal, Welsh Clinical Communications.

Results: Out of 429 patients who had renal biopsy, 91 patients (Males – 55 (61%) and Females – 36 (39%) were included in the study who had core biopsy for the renal mass. The mean age was 66 years (range 46-87). Renal mass biopsies were performed using coaxial technique with18-gauge core needle. We categorised patients in two groups. Sixty-eight patients had biopsies for metastatic disease and 23 patients had for localised renal masses. In the localised disease the positive predictive value was 82% (95% CI - 48.2% to 97.7%) and the negative predictive value was 100% (95% CI - 66.4% to 100%) (Clopper Pearson Method). For patients with metastatic renal mass the positive predictive value was 83%.

Conclusion: Percutaneous renal mass biopsy is useful in managing both localised and metastatic renal mass with high a positive predictive value. We recommend this procedure to get a histological sample for the metastatic renal cancer that require targeted therapy and localised masses that require curative treatment.

UP-211

A Retrospective Long-Term Multicenter Follow-Up Study of Risk Factors for Prognostic Survivals in Non-Metastatic Renal Cell Carcinoma Underwent Curative Nephrectomy

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Introduction and Objective: To evaluate the prognostic risk factors of multiple survival outcomes in non-metastatic renal cell carcinoma (nmRCC) patients after curative nephrectomy.

Materials and Methods: A total of 4260 patients with nmRCC from five Korean institutions, who underwent curative nephrectomy between 2000 and 2012, were enrolled and their survival outcomes at more than 1-month follow-up were retrospectively reviewed. Patients aged less than 19 years, with benign histology, who underwent cytoreductive nephrectomy and those without follow-up records were excluded. Deaths were defined as intraoperative, postoperative, or RCC-related. Recurrence-free (RFS) and metastasis-free survival (MFS), cancer-specific survival (CSS), and overall survival (OS) outcomes were analyzed with their prognostic factors. Survival curves were estimated using the Kaplan-Meier method and Cox proportional hazard model was performed. P-value <0.05 was considered statistically significant.

Results: During the median 43.86-month follow-up, 342 recurrences, 127 metastases, and 361 deaths, including 222 cancer-specific deaths, were reported. RFS and MFS did not reach the median survival and the median survival time was 176.75 and 222.47 months for OS and CSS, respectively. The nephrectomy type (laparoscopy vs. open), pathologic T stages, and nuclear grade were all common risk factors for all prognostic survivals. Further, tumor necrosis was a significant prognostic factor for MFS and the baseline ASA, hemoglobin, and pathologic N stage were common risk factors for RFS, OS, and CSS. In addition, the platelet count, extent (partial vs. radical) of surgery, and lymphovascular invasion were significantly predictive for RFS; baseline diabetes, hypertension, age, body mass index, extent of surgery, and pathologic sarcomatoid differentiation were significantly prognostic for OS; and baseline diabetes, hypertension, body mass index, and pathologic sarcomatoid were significant predictive factors for CSS (p<0.05). The Kaplan-Meier survival curves showed that the RFS, MFS, OS, and CSS were significantly different depending on the pathologic T stages (p<0.05)

Conclusion: This large-numbered study assessed long-term prognostic survivals and their risk factors among patients with nmRCC after curative nephrectomy. Those risk factors will help clinicians to plan the adequate follow-up protocols for each nephrectomised patient.

UP-212

The Impact of Perioperative Blood Transfusion on Oncologic Outcomes in Patients with Non-Metastatic Renal Cell Carcinoma Treated with Surgery

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Introduction and Objective: We aimed to evaluate the clinical impact of perioperative blood transfusion (PBT) on oncologic outcomes after nephrectomy in non-metastatic renal cell carcinoma (non-mRCC) patients.

Materials and Methods: We retrospectively reviewed the data of 2329 patients who underwent partial or radical nephrectomy for non-mRCC in a single institution between 2000 and 2014. PBT was defined as transfusion of allogeneic packed red blood cells (pRBCs) during nephrectomy or within pre- and/or post-operative hospitalization period. Oncologic outcomes of interest were recurrence-free survival (RFS), overall survival (OS), and cancer-specific survival (CSS).

Results: Among all patients, PBT was performed in 275 patients (11.8%) with median units of 3 pRBCs (IQR: 2-5). Transfused patients were significantly associated with more unfavorable pathological features, including advanced tumor stage (p<0.001), higher Fuhrmann nuclear grade (p<0.001), larger tumor size (p<0.001), pseudo sarcomatous component (p= 0.014), tumor necrosis (p<0.001), and node-positive disease (p<0.001). On multivariable logistic regression analysis, symptomatic presentation, advanced age at surgery, higher preoperative serum Cr, lower preoperative Hb were the independent preoperative risk factors of receiving PBT (all p<0.05). Kaplan-Meier plots revealed that transfused patients showed worse 5-year RFS (65.1% vs 91.2%, p<0.001), OS (71.4% vs 92.8%, p<0.001), and CSS (74.0% vs 95.5%, p<0.001) than non-transfused patients. However, on multivariable Cox regression analyses, PBT was not significantly associated with RFS, OS, and CSS. When conducting multivariable analyses only in transfused patients (n=275), increased number of pRBC units was the independent predictor of worse OS (hazard ratio [HR] 1.04, 95% confidence interval [CI] 1.01-1.08; p= 0.018) and CSS (HR 1.05, 95% CI 1.02-1.09; p= 0.001).

Conclusion: PBT may have an adverse effect on postoperative RFS, OS, and CSS in non-mRCC patients. Especially, increasing pRBC units in transfused patients may be a concern in light of worse OS and CSS. Therefore, in case of patients with risk factors of PBT need, such as symptomatic, older age, and lower preoperative Hb, efforts to limit the overuse of PBT should be continued for the improvement of postoperative survival.

UP-213

Experience Matters More Than Renal Nephrometry Score in Robotic Partial Nephrectomy

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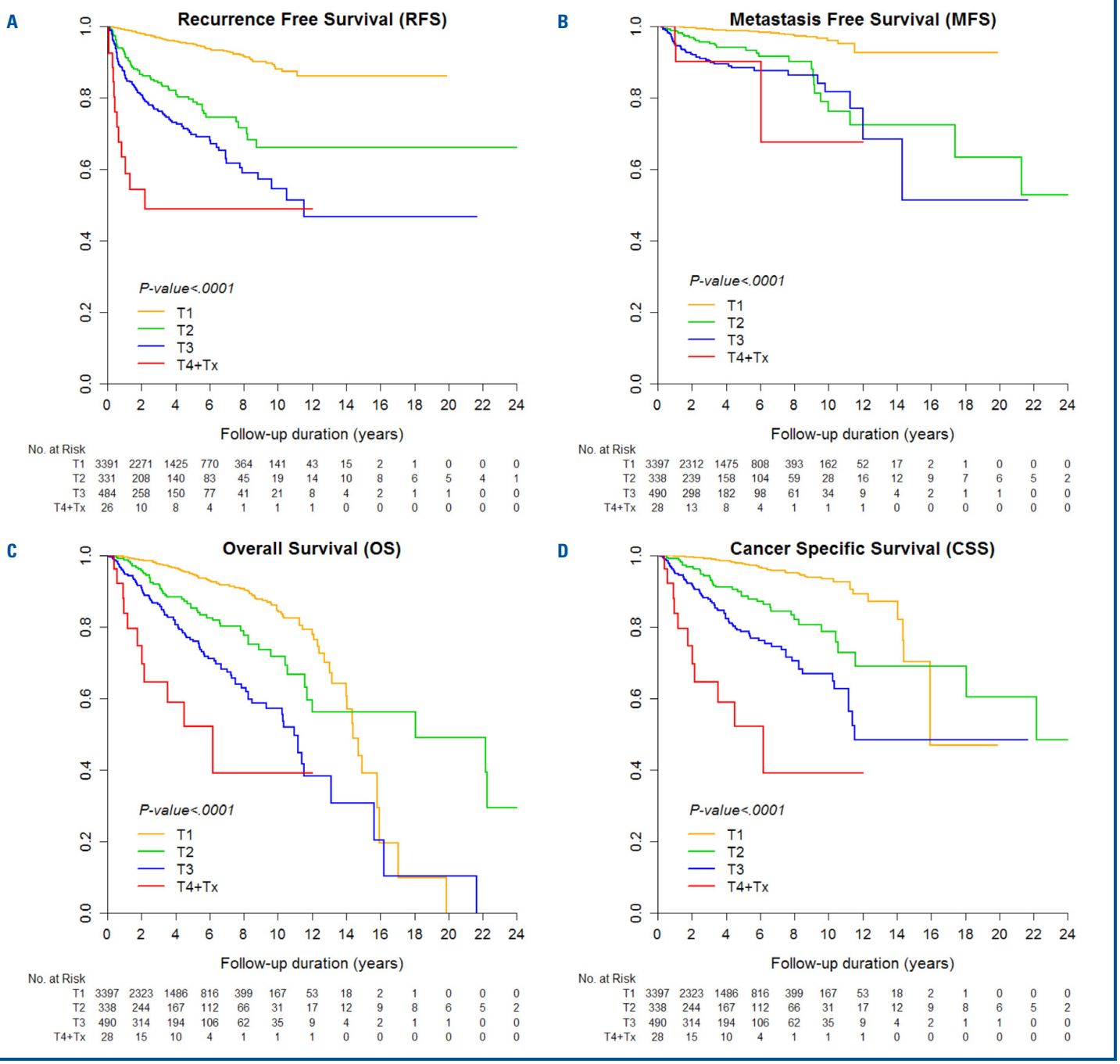
Introduction and Objective: Partial nephrectomy is established as standard of care of renal tumors. With increasing surgical expertise, more and more complex renal tumors are being managed by minimal invasive technique using robotic platform. The aim of this study was to compare oncological and functional outcomes in patients with high and low renal nephrometric scores after robot assisted partial nephrectomy.

Materials and Methods: From October 2015 to January 2019, eighty-three robotic partial nephrectomies were done using da Vinci Xi surgical robotic platform by a single experienced robotic surgeon. The patients were evaluated in detail including multiphasic CT scan. Nephrometric scoring was done for all cases. Arterial control was taken in all cases and Venous control was taken selectively. Intra-operative USG

UP.211, Figure 1. Kaplan-Meier curve for (**A**) recurrence-free survival, (**B**) metastasis-free survival, (**C**) overall survival, and (**D**) cancer-specific survival according to pathologic T stages.



was used in all cases for delineation of tumor. Renography was done using barbed 3-0 suture and cortical approximation done using Vicryl 1-0 and sliding hem-o-lock technique. Hemostatic agent (flow-seal) was used selectively. Pre-operative variables including patient age, BMI, pre-operative Hb and creatinine, tumor characteristics, post op Hb, creatinine, HPE and all complications were recorded prospectively and analyzed.

Results: Eighty-three patients (52 males, 31 females) with mean age of 56.7 (28 – 77) years were operated by single surgeon (AK). Mean BMI was 26 + 3.8 kg/m2. Mean pre-op Hb and creatinine were 11.9 and 0.9 and post op Hb and creatinine were 10.8 and 1.02 respectively. 23 were diabetic, 27 were hypertensive, 5 had COPD and 8 had history of CAD. Classifying on basis of nephrometric score, 37 had low score, 29 had moderate score and 17 had high score.

Conclusion: In the hands of an experienced robotic surgeon, oncological and functional outcomes of renal tumors with high and low nephrometric score treated with robotic partial nephrectomy remains comparable except for higher warm ischemia time and pelvic-calyceal system injury.

UP-214

Feasiblity of Omission of Cortical Renorrhaphy in Robotic Assisted Partial Nephrectomy

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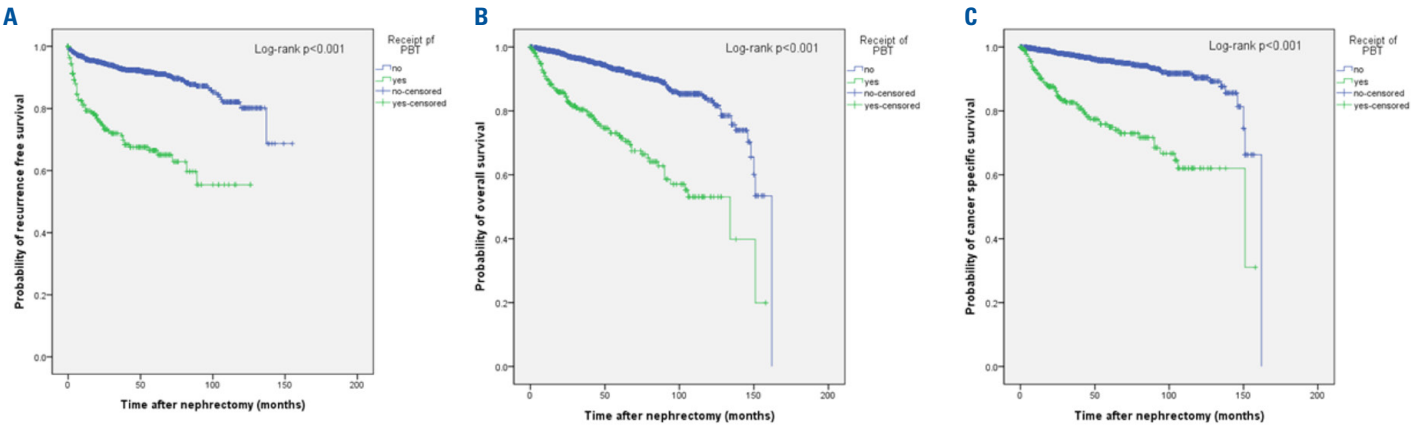
Introduction and Objective: Cortical Renorrhaphy is a standard method to achieve hemostasis and closure of parenchyma in partial nephrectomy (PN). However, cortical renorrhaphy without damaging or compressing vessels in cases of large renal tumors extend-

UP.212, Figure 1. Kaplan-Meier plots for postoperative survival outcomes according to receipt of PBT. (**A**) Recurrence-free survival. (**B**) Overall survival. (**C**) Cancer-specific survival.



UP.212, Table 1. Multivariable Cox proportional hazard models for RFS, OS, and CSS in patients receiving PBT (n=275).

	RFS		OS		CSS	
Variables	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
Clinical parameters						
Symptomatic presentation (no vs. yes)	1.60 (0.93-2.76)	0.087	1.91 (1.13-3.22)	0.015	2.07 (1.14-3.75)	0.016
Age (continuous)	N/A	N/A	1.04 (1.02-1.06)	<0.001	N/A	N/A
BMI (continuous)	0.92 (0.84-0.99)	0.045	0.92 (0.85-0.99)	0.025	0.91 (0.84-1.00)	0.050
Preoperative Hb (continuous)	0.93 (0.83-1.03)	0.170	0.95 (0.85-1.06)	0.360	0.95 (0.83-1.08)	0.402
Number of units transfused (continuous)	0.99 (0.94-1.03)	0.579	1.04 (1.01-1.08)	0.018	1.05 (1.02-1.09)	0.001
Pathological parameters						
Maximal tumor diameter (continuous)	1.11 (0.04-1.18)	0.002	1.13 (1.05-1.21)	0.001	1.08 (1.01-1.16)	0.036
Pathological tumor stage (ref. pT1)						
pT2	1.41 (0.57-3.58)	0.469	0.36 (0.14-0.90)	0.028	0.59 (0.21-1.64)	0.309
pT3	4.53 (2.00-10.27)\	<0.001	1.12 (0.58-2.17)	0.725	1.76 (0.81-3.80)	0.153
pT4	5.79 (0.63-52.90)	0.119	1.76 (0.20-15.09)	0.606	2.51 (0.28-22.63)	0.413
Fuhrmann nuclear grade (ref. 1-2)						
3	1.45 (0.72-2.94)	0.302	1.29 (0.65-2.55)	0.459	1.51 (0.63-3.63)	0.358
4	1.35 (0.58-3.13)	0.485	1.43 (0.62-3.27)	0.398	1.53 (0.56-4.13)	0.405
Tumor necrosis (no vs. yes)	1.38 (0.81-2.36)	0.233	1.27 (0.74-2.18)	0.376	1.96 (1.02-3.78)	0.044
pN1	3.64 (1.49-8.88)	0.004	1.91 (0.77-4.70)	0.160	1.68 (0.64-4.40)	0.290

UP.213, Table 1: Operative Characteristics.

Operative characteristic	Low score (4-6) N = 37	Moderate score (7-9) N = 29	High score (10-12) N = 17
Mean WIT	21.38 + 7.9	24.78 + 7.58	25.33 + 10.8
Mean decrease in Hb	12.3 – 11.1 = 1.1	11.4 – 10.6 = 0.8	12.4 – 10.6 = 1.8
Mean rise in creat	0.96 – 0.96 = 0	0.84 – 1.09 = (-)0.25	0.87 – 1.05 = (-)0.18
PCS opened	0	2	9
Re-exploration	0	0	2
Blood transfusion	0	1	0
Margin positive	0	0	0

UP.213, Table 2: Histopathology.

Angiomyolipoma	11
Clear cell RCC	49
Chromophobe RCC	2
Cystic RCC	3
Epithelial and stromal cell tumor	1
Oncycytoma	8
Papillary RCC	9

ing up to renal hilum is not always possible. It also has potential of devascularisation of the parenchyma compressed by sutures while doing renorrhaphy, which in turn leads to loss of nephrons. This study was done to assess the safety of omitting cortical renorrhaphy during robot-assisted partial nephrectomy and measure preliminary functional outcomes.

Materials and Methods: Eleven robot-assisted partial nephrectomies were performed with a running, base-layer suture for the collecting system and vessels however cortical renorrhaphy and approximation of parenchyma was completely avoided. Hemostatic agent (Flowseal) was used to achieve complete hemostasis. The non-renorrhaphy group was matched 1:2 R.E.N.A.L. nephrometry score to a sliding-clip cortical renorrhaphy group retrospectively. Intraoperative blood loss, urine leaks, postoperative bleeds, and functional outcomes were evaluated.

Results: Statistically significant differences were not found between both groups in sex, age, tumor diameter, nephrometry score, preoperative glomerular filtration rate, Charlson score or the amount of resected healthy kidney margin. Operative time, Console time, amount of blood loss, post-operative analgesia requirement, drain output and duration of hospital stay was not found to be significantly different in renorrhaphy and non-renorrhaphy group. There was a single case of re-bleeding, requiring re-exploration in renorrhaphy group and none in non-renorrhaphy

group. Warm ischemia time was less for the non-renorrhaphy group. The median % GFR loss was 18.3% for renorrhaphy and 12.6% for non-renorrhaphy at a median follow-up of 6.2 months. In a multivariable model, both cortical renorrhaphy (P= 0.009) and tumor diameter (P= 0.004) were predictors of GFR loss.

Conclusion: Cortical renorrhaphy and approximation of parenchyma does not appear to be essential in partial nephrectomy. The percent GFR loss was improved by omission of cortical renorrhaphy.

UP-215

Hyaline Casts in Renal Tubular Ducts is Useful Predictor for the Residual Renal Function after Nephrectomy in Patient with Renal Cell Carcinoma

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Introduction and Objective: The surgical methods for the treatment of renal cell carcinoma (RCC) have changed significantly. Recently, partial nephrectomy has contributed to the preservation of the renal function. However, the standard surgical method for ≥cT1b renal cell carcinoma is nephrectomy. Thus, the control for CKD after the nephrectomy in patients with RCC will be needed. Therefore, the purpose of this study is finding out the predictor of renal function after the nephrectomy for the intervention in CKD.

Materials and Methods: Patients who underwent nephrectomy with a diagnosis of renal cell carcinoma (≥cT1b) from 2011 to 2015 were enrolled in this study. We examined the histopathological findings in normal region of extracted kidney. By using univariate and multiple regression analysis, relationships were determined between the histopathological factors, patient characteristics and the alteration of the eGFR for 3 years after the operation. In histopathological analysis, the glomerulosclerosis rate (2.5×5 field of view), the number of hyaline casts in renal tubular duct (2.5×5 field of view), inflammatory cell infiltration (2.5×5 field of view) were examined.

Results: Thirty-one patients were analyzed. They were 20 males and 11 females; their age is 45-85 years old (median: 65 years old). In their renal function, median eGFR before surgery: 71.0 ±3.62 mL/min/1.73m². The median decreasing rate of eGFR after surgery was 38.6 ± 1.86%, 43.14 ± 2.8% at one and three years after operations, respectively. The decreasing rate of eGFR was significantly difference between preoperative CKD 1,2 at 40% vs CKD 3,4 at 44 % (P <0.05). In a multivariate analysis, only the number of hyaline casts in renal tubular duct was significantly associated with the eGFR decrease after 3 years (P= 0.001).

Conclusion: The decline of residual renal function after the nephrectomy was associated with preoperative renal function. Furthermore, the evaluation of hyaline casts in renal tubular duct in normal region of extracted kidney was considered a useful predictor of the decline in the residual renal function. This histopathological evaluation is easy and simple, it will contribute to the postoperative renal management.

UP-216

X-Capsular Incision and Tumor Enucleation (X-CITE)-Technique: A Novel Method Maximizing Renal Parenchymal Preservation for Completely Endophytic Renal Tumors

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Introduction and Objective: Patients with bilateral or multifocal renal tumors benefit from maximal renal parenchymal preservation. Completely endophytic renal tumors represent a unique challenge as they can require sacrificing normal renal parenchyma overlying the renal tumor. We propose XCITE – a novel technique to enucleate endophytic renal tumors while preserving the overlying renal parenchyma.

Materials and Methods: We reviewed 10 consecutive patients with a history of bilateral or multifocal renal tumors who presented to our institution with complete endophytic renal masse(s). All patients underwent XCITE. In each case, after intraoperative localization of the mass using ultrasonography, an X-shaped incision was made in the renal capsule. The overlying renal parenchyma was split until the tumor pseudo capsule was reached. The tumor was subsequently enucleated, and the overlying renal parenchymal flaps were closed. Patient demographics, tumor characteristics and perioperative outcomes were recorded.

Results: Ten consecutive patients with completely endophytic renal tumors undergoing the X-CITE technique were included in our study. Median follow up was 12.2 months (interquartile range 10.6 - 14.9 months). Most patients also had additional exophytic tumors and on average, 5 renal tumors were removed per operation with a median largest renal tumor size of 3.2cm. There were no intraoperative or post-operative complications recorded. There was no decline in renal function after surgery when comparing pre-and post-operative eGFR (70.0 vs 75.1; p=0.31) or creatinine (1.06 vs 1.03; p=0.28). Furthermore, postoperative nuclear MAG-3 renal scans demonstrated equal differential kidney function after surgery.

Conclusion: The X-CITE technique is feasible, safe and effective with minimal collateral damage in the treatment of completely endophytic renal masses. This approach spares the overlying parenchyma while allowing removal of deep, completely endophytic renal tumors. Further investigation is needed to identify which patients may benefit from this procedure as well as to explore intermediate and long-term outcomes.

UP-217

A Critical Evaluation of the Prognostic Value of Hematological Markers in Non-Metastatic Clear Cell Renal Cell Carcinoma Treated with Nephrectomy

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Introduction and Objective: The objective of our current study was to evaluate simultaneously the impact of inflammation-related blood-cell markers on the survival outcomes of non-metastatic renal cell carcinoma.

Materials and Methods: We accessed our uro-oncological registry to extract the clinicopathological data of patients with non-metastatic clear cell renal cell

UP.216, Table 1: Clinical characteristics and peri-operative outcomes from patients undergoing X-CITE partial nephrectomy.

Patient No.	Genetic	Gender	Age	BMI	RCC Subtype	# Lesions removed	Off Clamp	EBL	OP Time (min)	Pre-op GFR	Post-op GFR	%RF of operated Kidney
Patient 1	BMF	Female	35	35.8	CC	1	No	200	209	52	73	45
Patient 2	VHL	Female	56	51.2	CC	11	Yes	1200	408	78	74	n/a
Patient 3	BMF	Male	64	26.9	CC/Pap	5	Yes	1500	362	65	60	64
Patient 4	VHL	Female	24	25.6	CC	5	Yes	800	290	>120	101	57
Patient 5	BMF	Male	61	32.0	Chromo	2	Yes	400	280	69	69	72
Patient 6*	BHD	Male	44	26.6	Hybrid	14	Yes	1200	399	74	63	solitary
Patient 7	SDHB	Female	53	33.8	CC	2	No	500	250	90	93	48
Patient 8	VHL	Female	54	29.4	CC	4	No	900	292	30	42	56
Patient 9	VHL	Male	39	25.3	CC	3	Yes	200	309	>120	>120	42
Patient 10	VHL	Female	52	21.8	CC	3	No	500	232	102	101	49

Legend: BMF= bilateral multifocal renal tumor; VHL= von Hippel Lindau; BHD= Birt-Hogg-Dubé syndrome; SDH-B= succinate dehydrogenase B mutation; CC= clear cell; Pap= papillary; Chromo= chromophobe renal tumor; Hybrid= hybrid renal tumor; RF= renal function (as measured by MAG-3 nuclear renal scans); *patient with solitary kidney

carcinoma who underwent nephrectomy from 2000 to 2015. The optimal cut-offs of pre-operative inflammatory indices such as neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), lymphocyte-monocyte ratio (LMR) and red-cell distribution width (RDW) were determined using X-tile 3.6.1 software (Yale University, New Haven, CT, USA). Cox regression models were created to evaluate the proportional hazards of these hematological indices for overall survival (OS) and cancer-specific survival (CSS). We further evaluated the utility of these markers against established prognostic models such as the Mayo Clinic Leibovich score and UCLA Integrated Staging System (UISS) using Harrell's c-index.

Results: 687 patients with non-metastatic clear cell renal cell carcinoma underwent nephrectomy of which 71.3% had radical nephrectomy. Median follow-up was 76.3 months (IQR: 41.9 – 116.3). Mean pathological tumour size was 5.0 (± 2.9) and their pathological tumour stage were as follows: pT1 – 67.8%, pT2 – 11.1%, pT3 – 20.5%, pT4 – 0.6%. Mean NLR was 2.89 (± 2.0), mean PLR was 166.5 (± 95.4), mean LMR was 4.1 (± 3.7) and mean RDW was 14.0 (± 1.9). The optimum cut-offs for NLR, PLR, LMR and RDW were 3.3, 210, 2.4 and 14.3 respectively. On univariate Cox regression analysis, NLR, PLR, LMR and RDW were all significant predictors for time to cancer-specific and overall mortality. However, after adjusting for other clinicopathological factors such as age, baseline ECOG, pathological tumour and nodal stage, Fuhrman grade, only PLR remained an independent prognostic marker for both CSS and OS (CSS: HR 2.83, 95%CI: 1.55 – 5.16, p= 0.001 and OS: HR 1.89, 95%CI: 1.24 – 2.89, p= 0.003). When PLR is included in the Leibovich score and UISS, the c-index increases from 0.854 to 0.876 and 0.751 to 0.818 respectively for CSS at 5-years post-nephrectomy.

Conclusion: PLR is a robust prognostic marker in non-metastatic clear cell renal cell carcinoma and clearly outperforms other inflammatory indices in our cohort of patients who had undergone nephrectomy.

UP-218

Comparison of Risk Factors for Development of Proteinuria After Radical Nephrectomy for Renal Cell Carcinoma Assessed by Glomerular Filtration Rate per Functional Renal Volume

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Introduction and Objective: To estimate structural hypertrophy and functional hyperfiltration as compensatory adaptations following radical nephrectomy (RN) in patients with renal cell carcinoma (RCC) according to proteinuria.

Materials and Methods: We retrospectively identified 471 patients who underwent RN for RCC between 2005 and 2013. Patients were classified according to postoperative proteinuria. CT images taken preoperatively and 1 year after surgery were used to assess functional renal volume (FRV) to measure the degree of remnant kidney hypertrophic volume. Preoperative and postoperative CKD-EPI GFR per unit volume of FRV (GFR/FRV) were used to calculate the degree of hyperfiltration.

Results: Among all patients (mean age: 54.7 years, IQR: 47.0-63.0), the mean preoperative CKD-EPI GFR, FRV, and GFR/FRV were 89.3 mL/min/1.73m^2 (IQR: 79.5-99.4), 357.2 cm^3 (IQR: 306.7-402.1), and 0.26 ml/min/1.73 m^2/cm^3 (IQR: 0.22-0.29), respectively. The percentage reduction in GFR was not statistically significant according to proteinuria (normal: -28.5% vs. proteinuria: -28.7%; p= 0.902); however, hypertrophic FRV in the remnant kidney was statistically significant (normal: 17.5% vs. proteinuria: 13.8%; p= 0.001). The change in GFR/FRV was not statistically significant (normal: 21.1% vs. proteinuria: 23.8%; p= 0.324). Multivariate regression analysis revealed that age (p= 0.010) and GFR/FRV (p <0.001) were significant factors predicting postoperative proteinuria.

Conclusion: Compensatory adaptation, structural hypertrophy, and functional hyper-filtration act as positive adaptations to reduce the occurrence of proteinuria.

UP-219

To Investigate the Relationship Between the Duration of Initial Diagnosis and Urothelial Carcinoma/Renal Cancer with Dialysis Patients in Taiwan

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Introduction and Objective: The cohort study declared the duration of initial diagnosis for urothelial carcinoma/renal cancer in those dialysis patients in Taiwan.

Materials and Methods: The authors analyzed the Taiwan Longitudinal Health Insurance Database, which is randomly abstracted from the National Health Insurance Research Database from 2000 to 2013. Demographic data and tumor incidence were analyzed.

Results: Of 11820 dialysis patients (study cohort group), 134 (1.13%) had been diagnosed with renal cancer or urothelial carcinoma of urinary tract. In the study cohort group, average time to renal cancer or urothelial carcinoma was 4.18 ± 4.06 years. Further, we performed subgroup analysis, 4.11 ± 3.97 years in hemodialysis patients, then 4.39 ± 4.20 years in peritoneal dialysis patients.

Conclusion: The known duration time to cancer diagnosis in those dialysis patients was very important due to no urine output for examination. By means of the cohort studies, much more attention should be warranted to teaching clinician to arrange regular cancer screening, like ultrasound of abdomen or cystoscopy or intravenous pyelography.

UP-220

Prognostic Value of Hemoglobin in Metastatic Renal Cell Carcinoma Treated with Tyrosine Kinase Inhibitors: A Systematic Review and Meta-Analysis

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Introduction and Objective: Anemia was reported to be associated with poor prognosis after cytokine therapy in patients with metastatic renal cell carcinoma (mRCC). However, it was still unknown in tyrosine kinase inhibitors (TKIs) era. This systematic review and meta-analysis was to assess the significance of anemia and increase of hemoglobin in predicting the outcomes of mRCC patients with TKIs treatment.

Materials and Methods: We searched Pubmed, Web of Science and EMBASE databases until January 6, 2019 for studies comparing outcomes of mRCC patients who had different hemoglobin level before or after TKIs therapy. The hazard ratios (HRs) and its 95% confidence interval (CI) of progression-free survival (PFS) and overall survival (OS) were extracted for evaluating the predictive value of hemoglobin.

Results: A total of 32 studies were included in this systematic review and meta-analysis. We divided studies into three groups according to the time when anemia happened and the change of hemoglobin after TKIs treatment. Pre-treatment anemia was correlated with shorter PFS (HR=1.57, 95% CI=1.4-1.77, p<0.001, I2=48.3%) and OS (HR=1.80, 95% CI=1.46-2.21, p<0.001, I2=87.8%). Post-treatment anemia may indicate shorter OS (HR=1.92, 95% CI=1.57-2.34, p<0.001, I2=0). Increased hemoglobin after treatment may suggest longer PFS (HR=0.46, 95% CI=0.34-0.63, p<0.001, I2=0).

Conclusion: Our results revealed that anemia before or after TKIs treatment were correlated with poor prognosis in patients with mRCC. On the contrary, the increase of hemoglobin after TKIs therapy may indicate better outcomes.

UP-221

Robot-Assisted Laparoscopic Partial Nephrectomy Through Retroperitoneal Approach: Comparison with Transperitoneal Approach

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Introduction and Objective: The retroperitoneal approach is not influenced by previous abdominal surgery, but the operative space is narrow and limited. Subsequently, the distance between trocars is short and problems, such as interference and contact with the arm, occur. The surgical results, perioperative results, and postoperative changes in the renal function were retrospectively compared between the retroperitoneal approach and transperitoneal approach.

Materials and Methods: The subjects were 11 and 14 patients who underwent surgery using da Vinci Xi with retro- and transperitoneal approaches between August 2017 and May 2018. In parenchymal suture, firstly, central suture was applied to release the ischemia, followed by the sliding clip method.

Results: The retroperitoneal approach was employed significantly more frequently in females, but no significant difference was noted in the age, BMI, tumor diameter, or RENAL Nephrometry Score (RNS). No significant difference was noted in any surgical item, such as the operative time, console time, warm ischemia time, or blood loss, between both groups. In addition, no significant difference was noted in the

Trifecta success rate: 72.7 vs. 92.9% in retro- and transperitoneal groups. Paralytic ileus developed after surgery in only one patient in the transperitoneal approach group, and surgery was not converted to nephrectomy or laparotomy in any patient in either group. Preoperative eGFR (mL/min/1.73m^2) was 88.5 and the median eGFR changes (%) at 1, 3, and 6 months after surgery were -11.2%, -11.3%, and -13.7%, respectively, showing no significant difference from that after surgery through the transperitoneal approach.

Conclusion: No significant difference was noted in any of the surgical items and the postoperative eGFR after retroperitoneal RAPN, being comparable to those after transperitoneal RAPN. Since the retroperitoneal approach may take time for resection and suture in patients with a high RNS, it should be kept in mind that the ischemia time extends. By securing a space as wide as possible and setting trocars, it may be possible to perform retroperitoneal RAPN minimizing interference with the arm, similarly to transperitoneal RAPN.

UP-222

Conservative Surgery versus Radical Nephrectomy in Elderly Patients with Renal Cell Carcinoma Localized Stage in 75 Cases

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Introduction and Objective: RCC in the elderly over 65 years of age poses a therapeutic problem by the often presence of comorbidities, several factors must take into account in the choice of type of surgery. The objective is to assess renal oncological and functional outcome after radical nephrectomy and conservative surgery in patients 65 years of age and older.

Materials and Methods: Retrospective study of 75 cases of renal cell carcinoma in patients aged 65 years and over collected in the urology department of Habib Bourguiba hospital of Sfax over a period of 28 years between 1 January 1990 and 31 December 2018.

Results: The average age was 72.44 years old. The sex ratio: 1.20. The co-morbidity factors were dominated by cardiovascular pathology. The chance discovery was in 14.9% of the cases. The physical examination showed a renal mass giving lumbar contact in 20.5% of cases. Radiological exploration showed an average tumor size of 7.14 cm with exophytic development in 77.5% of cases. Radical nephrectomy was performed in 46 cases (61.33%) and conservative surgery in 29 cases (38.66%). After a univariate analysis of the various clinico-radiological and anatomopathological parameters, the presence or absence of low back pain ($p = 0.034$), mass giving lumbar contact ($p = 0.022$), exo- or endo-phytic tumor development ($p = 0.002$), Tumor density ($p = 0.026$), tumor size ($p < 0.001$), pT stage ($p < 0.0001$) and worsening of renal function ($p = 0.002$) are prognostic factors. After multivariate analysis and logistic regression, only tumor stage pT ($p = 0.039$), tumor size ($p = 0.027$) and worsening renal function ($p = 0.007$) appeared to be determining prognostic factors in the choice of surgical technique in elderly patients with renal cell carcinoma localized stage.

Conclusion: The oncologic outcome after conservative versus radical surgery is similar in elderly patients with renal cell carcinoma. However, renal functional outcome remains the only determinant of choice for nephronic preservation surgery.

UP-223

Oncological and Functional Renal Profile After Conservative Surgery for Renal Cancer Localized Stage About 91 Cases

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Introduction and Objective: Renal cell carcinoma (RCC) is a heterogeneous tumor group representing 3% of adult malignancies. The reference treatment for RCC is surgery for excision irrespective of the tumor stage at diagnosis. Indications for partial nephrectomy (PN) have broadened in recent years given the beneficial results of nephronic preservation on overall survival. However, the risk of recurrence and survival according to the type of treatment performed for patients with CRC have been rarely studied.

Materials and Methods: This is a retrospective single-center study of 91 cases of renal cell carcinoma staged in patients operated by conservative surgery collected in the Urology Department of Habib Bourguiba Hospital of Sfax in a period of 18 years between January 2000 and December 2017.

Results: In our series, the average age was 60.89 years old. The sex ratio (M/W) was 1.33. Sixty-two of our patients had comorbidities. The patients were symptomatic in 65.9% of the cases. In the biology, mean preoperative creatinine was 102 mmol/L. On ultrasound, cancer was a heterogeneous mass in 46.2% of cases. The CT appearance was heterogeneous in 64.83%, cystic in 17.6% of cases. Our patients could be divided into ASA score 1 in 39.6%, ASA 2 in 45.1% and ASA 3 in 15.4% of cases. Three surgical techniques were mainly performed: partial nephrectomy in 60.4%, wedge resection in 27.5%, enucleation in 12.1% of cases. The indication of such a technique was imperative in 35.2%, relative in 16.5% and elective in 48.4% of cases. The type of ischemia was hot in 94.5% and cold in 5.5% of cases. According to the pTNM 2009 classification, 60.4% of tumors were classified in pT1a, 25.3% in pT1b, 6.6% in pT2a whereas 7.7% of cases were classified pT2b. The study of the margin of safety after tumor excision showed a negative margin in 85.7% and a positive margin in 14.3% of cases. After multivariate analysis, only Führmann's nuclear grade variable was established as a predictor of positive margins ($p = 0.023$). Good early postoperative outcome was noted in 83.51% of cases. After multivariate analysis with logistic regression, only the age variable and the presence of preoperative comorbidities ($p = 0.013$) are retained as predictors of worsening renal function.

Conclusion: In view of the results of our study and the recent literature, conservative surgery represents the gold standard in the management of localized stage renal cancers with a major impact on the renal functional outcome while preserving the oncological section.

UP-224

Renal Cell Carcinoma in Japanese Patients with End-Stage Renal Disease

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Introduction and Objective: The incidence of renal cell carcinoma (RCC) is higher in patients with end-stage renal disease (ESRD) on dialysis than in the general population. The WHO 2010 classification system for RCC included the two subtypes of RCC unique to ESRD, acquired cystic disease-associated (ACD-a) RCC and clear cell papillary RCC. We evaluated the clinical outcomes and histological type of RCC in ESRD patients.

Materials and Methods: The patient cohort consisted of 60 patients with ESRD who underwent nephrectomy for RCC at our institution from January 1989 to February 2019. The median (range) age at diagnosis was 62 (36-86) years and the male to female ratio was 48:12. The median (range) period of dialysis before nephrectomy was 155.5 (2-420) months. The TNM stage was I in 45 cases, II in 4, III in 5 and IV in 6. The median follow-up was 58 months (range 0.5 to 240). Specimens were re-reviewed by a single pathologist (NK) according to the 2010 WHO classification.

Results: Of the total of 89 tumors, 47 tumors were unilateral single tumors and 42 tumors were bilateral and/or multiple tumors. The tumor histology was as follows: clear cell RCC, 33 tumors (37.1%); chromophobe RCC, 4 tumors; papillary RCC, 5 tumors; ACD-a RCC, 40 tumors (44.9%); clear cell papillary RCC 3 tumors; and unclassified RCC 4 tumors. The median duration of dialysis of the cases with clear cell RCC predominant (29 cases), ACD-a RCC predominant (15 cases) and clear cell papillary RCC (3 cases) were 120 months, 220 months and 49 months, respectively ($p = 0.0014$). Of the total of 9 recurrence cases, 3 cases were local recurrence, 1 case was contralateral kidney recurrence and 5 cases were distant metastasis. Especially, all 3 cases on local recurrence were ACD-a RCC patients underwent laparoscopic resection. Five cases died from renal cancer and 9 cases died of other diseases. The cause specific and overall survival rates in all cases at 5 years were 90.9% and 82.2%, respectively. The overall survival rates in the clear cell RCC predominant cases and the ACD-a RCC predominant cases at 5 years were 82.6% and 78.7%, respectively ($p = 0.645$).

Conclusion: The spectrum of RCC histological subtypes arising ESRD is distinct from that of sporadic tumors. Long-term dialysis to patients with ESRD is related to the prevalence of ACD-a RCC. Laparoscopic treatment for ACD-a RCC patients may be the risk factor for local recurrence.

UP-225

The Economic Burden of Renal Cell Carcinoma (RCC) in Canada Using Real-World Evidence: A Societal Perspective

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Introduction and Objective: Kidney cancer is placed third in urologic cancers in Canada, right behind prostate and bladder cancer. Many new therapeutic options are being developed in the metastatic phase mainly, but these innovations are being presented with high costs. This is supported by the development of newer immune-therapies that constantly addresses an unmet need. The objective of the current study is thus to establish clinical and economic outcomes of the current practice in RCC treatment in Canada post-nephrectomy.

Materials and Methods: A Markov model with microsimulation was developed to estimate the cost of follow-up and treating patients from post-nephrectomy up to diagnosis of metastatic RCC and death from any cause. The model included 5 health states: Active Surveillance, Local recurrence, mRCC, death from RCC or death from other causes. Probabilities were adjusted by taking in consideration patient characteristics such as TNM staging and most estimate were extracted from real-world evidence studies assessing the survival of RCC and mRCC patients. Costs were extracted from available literature. Deterministic sensitivity analysis was conducted to account for uncertainty on different parameters by varying parameters by 25%.

Results: Mean survival (± SD) was evaluated to be 15.56 ± 5.69 life years (LYs) for T1 tumours, 13.22 ± 5.68 LY for T2, 12.22 ± 5.52 LY for T3 and 14.85 ± 5.71 LY for the weighted average of the 3 stages. The weighted mean and median total cost of the disease amounts to 107 811.22$ and 48 992.33$ respectively over a 20-year time horizon. In the weighted average scenario, the mRCC state costs represented the main burden, at around 40.3% of total cost. The local recurrence, active surveillance, death and kidney cancer related death states respectively represented 27.2%, 23.8%, 8.6% and 0.1%.

Conclusion: The economic burden of mRCC is increasing with the severity of the disease. The results given in the present work are preliminary and constitute a groundwork for future studies that need to be done integrating newer treatment option in the management of RCC.

UP-226

Inferior Vena Cava Thrombectomy – A Single-Centre Retrospective Analysis

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Introduction and Objective: Radical nephrectomy with inferior vena cava (IVC) thrombectomy for treatment of advanced renal cell carcinoma (RCC) is among the most challenging of uro-oncological procedures. RCC has a biological predisposition for direct vascular invasion, with intravascular tumour thrombus occurring in 4 - 10% of cases. Aggressive surgical resection has been demonstrated to provide a survival advantage; however, this approach is associated with high peri-operative morbidity and mortality. Often an experienced multi-disciplinary surgical team is required. We aimed to examine the surgical management and outcomes of patients who underwent radical nephrectomy involving IVC thrombectomy at a single tertiary centre.

Materials and Methods: Electronic medical records at a single centre was interrogated to extract a list of all patients who had had a nephrectomy between March 2009 and March 2019 using ICD-10 codes. The criteria for inclusion were patients who had undergone a radical nephrectomy with IVC thrombectomy for renal cell carcinoma. Data such as patient demographics, operative details, histology, post-operative complications and survival outcomes was kept prospectively for all patients.

Results: The study identified 27 patients, 20 males (74%), with median age of 63 (range 28 – 84). There were 12 level IV, 4 level III, 10 level II and 1 level I tumour thrombi. 88.9% of cases were performed using a multi-disciplinary surgical team, incorporating cardiac, vascular or hepatobiliary units. 30-day post-operative mortality was 14%, including two intra-operative deaths, all were patients with level IV tumour thrombi. Two patients required return to theatre, both for haemorrhage control. Mean hospital length of stay was 14.2 days (range 6-30). Overall survival was 48% at a median survival time of 20 months.

Conclusion: Radical nephrectomy with IVC thrombectomy is a technically demanding surgery requiring an experienced multi-disciplinary team in majority of cases. High peri-operative mortality is reflected in the most advanced cases despite extensive pre-operative work-up and planning.

UP-227

Intravesical Recurrence Following Radical Nephroureterectomy: 5-year Experience from a Single Unit

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Introduction and Objective: The incidence of intravesical recurrence (IVR) following radical nephroureterectomy (RNU) for upper tract urothelial cell carcinoma (UTUCC) is ~22-47%. Comparative data regarding IVR rate in patients with or without bladder cancer (BCa) prior to RNU are limited. We aimed to identify the IVR rate following RNU in patients with and without prior BCa and compare survival rates.

Materials and Methods: A retrospective analysis of RNU data from a single centre between 01/06/2010 and 01/06/2015 was performed. Demographic, histopathological and disease-specific mortality (DSM) data were reviewed.

Results: A total of 50 RNU was performed for UTUCC (n=46, 92% performed laparoscopically). The median [IQR] age and follow-up were 70.3 [63.1-76.9] years and 20.6 [12.1-47.6] months respectively. A previous history of BCa was present in n= 10 (all non-muscle invasive). Diagnostic ureteroscopy (URS) and biopsy was performed in 16 (32%) patients (pTa, n= 6; pT1, n= 1; pT2, n= 2; inconclusive, n= 6; benign, n= 1). RNU histology revealed pTa-1, n= 20 (40%); pT2, n= 7 (14%); pT3-4, n= 23 (46%). No post-operative bladder instillation was given. IVR occurred in n= 24 (48%) patients (pTa-1, n= 20 (83.4%); pT2, n= 3 (12.5%); pT3, n= 1 (4.2%). Median time to IVR was 12 [6.0-24.1] months. IVR occurred in n= 8 (80%) of those who had previous BCa (vs no previous BCa, n= 16 (40%), p= 0.02). IVR occurred in n= 11 (68.8%) of those who had a diagnostic URS and biopsy (vs no URS, n= 13 (38.2%), p= 0.04). Three patients underwent radical cystectomy. The DSM in the whole cohort was n= 14 (28%, median time 14 [4.9-32.3] months). There were no statistical differences in mortality rates in the IVR and non-IVR groups. The DSM in patients who had previous BCa was n= 6 (60%) (vs no previous BCa, n= 8 (20%), p= 0.01).

Conclusion: IVR occurred in nearly half of our patients and was more common in patients who had previous BCa and/or had a diagnostic URS. No survival loss was seen in the IVR group, but patients with previous BCa have a higher rate of DSM. IVR in our unit can potentially be reduced by limiting the use of URS and introducing post-RNU bladder instillation.

UP-228

Partial Nephrectomy in Patients with High-Risk UTUC

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Introduction and Objective: Kidney resection in patients with urothelial tumors is a rare type of surgery and can be performed only in cases of localized small tumors of the calyx when renal function is preserved. The aim of our study was to evaluate short and long term functional and oncological outcomes of patients that underwent kidney resection due to urothelial tumors.

Materials and Methods: Retrospective analysis of 107 patients with upper urinary tract cancer that were treated in our department from 2008 to 2019. Average age was 64.2 + 5.2 years. Men\women ratio – 77/30. Conservative surgery was conducted in 35 cases, among which 10 underwent partial nephrectomy and became the object of our study. All tumors were high-risk.

Results: Average observation period was 28.4 + 18.2 months. All patients had localized urothelial tumors of the kidney with lesion area that did not exceed 50% of pelvicalyceal system. Preoperative planning included CT imaging analysis with measurement of expected remaining functioning parenchyma volume. Tumors located in the lower segment calyces in 6 patients, in middle segment in 2 case and in upper segment - in 2. According to dynamic renal scintigraphy average unilateral kidney GFR prior to surgery was 19.6 + 5.2 ml/min, serum creatinine level – 1.16 + 0.26 mg/dl. All patients underwent resection of the

affected calyx with the segment where it was located. Perioperative flexible pyeloscopy was conducted through the incision hole in the pyeloureteral segment that additional helped to margin the lesion. In cases of upper pole resection renal cavities were sutured, but when tumor located in the middle or lower segment are construction of pelvicalyceal system was used. All surgical procedures were conducted without ischemia. Average blood loss - 564 + 178 ml. There were 2 surgical complications Cl-Dindo II after surgery that were managed conservatively. According to dynamic renal scintigraphy average unilateral kidney GFR 3 months after surgery was 15.8 + 4.8ml\min (p = 0,68), serum creatinine level – 1.21 + 0.21 mg/dl (p = 0.43). There was 1 case of local relapse that was managed with nephroureterectomy. In 1 patient there was diagnosed a decrease of unilateral GFR below 10 ml\min.

Conclusion: Although kidney resection in patients with pelvicalyceal urothelial tumors is a complex surgical procedure it preserves unilateral and total glomerular filtration rate. Early diagnosed ureteral tumors of the renal cavities can lead to conservative surgery and affect functional outcomes of the treatment.

UP-229

Efficacy of Kidney-Preserving Surgery in Patients with High-Risk UTUC

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Introduction and Objective: Upper tract urothelial carcinoma is rare, but potentially highly aggressive disease that often requires use of chemotherapy in adjuvant or palliative setting. Nevertheless, kidney function in UTUC patients is often impaired after surgery which limits prospects of systemic therapy. We aimed to determine functional outcomes of high-risk UTUC patients that underwent kidney-preserving surgical interventions.

Materials and Methods: Retrospective cross-sectional analysis of 109 patients with high-risk UTUC, among which a group of 35 tumors which underwent kidney -preserving surgery was selected. Prior to treatment all patients matched inclusion criteria: presence of clinically verified high risk UTUC, unifocal lesion, preserved kidney function on the affected side, absence of local or distant metastases, good performance status. In all cases surgical procedure included affected upper urinary tract segment removal with reconstruction of unilateral upper urinary tract. Functional outcomes were assessed by eGFR (MDRD formula) prior and 1 year after surgery accompanied by scintigraphy data, which was done routinely. Oncological outcomes were based on CT finding prior and after surgery and evaluated by RECIST 1.1.

Results: Follow-up ranged from 3 to 108 months, with median - 34 months. Average age - 57 years. Men\women ratio: 24\11. In average eGFR prior to surgery was 67.4 + 5.4 ml/min, with affected kidney filtration rate – 22.6 + 6.2 ml/min. In average eGFR 1 year after surgery was 62.5 + 6.9 ml/min, with affected kidney filtration rate – 21.2 + 4.1 ml/min. Detailed statistical analysis revealed higher level of preserved kidney function in patients with lower and mid ureteral lesions (p = 0,032; tGFR = 69.4 + 4.8 ml/min, affected kidney GFR = 24.3 + 5.2 ml/min) compared to upper ureter and pyelocaliceal system tumors (tGFR = 56.6 + 5.2 ml/min, affected kidney GFR = 17.1 + 6.1 ml/min) after surgery. After surgery 21 (60%) patients received cisplatin based chemotherapy in adjuvant setting, 6 (17%) in palliative setting with no dose reduction. Secondary radical nephroureterectomy was done in 4 cases of local upper urinary tract relapse.

Conclusion: Kidney function preservation in high risk UTUC, enlarges possibilities of further platinum-based chemotherapy conduction, thus, creating a possibility of clinical and oncological benefit in selected patients.

UP-230

Oncological and Functional Results of Nephron-Sparing Surgery in Large Tumors: 10 Year Experience of a High-Volume Center

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Introduction and Objective: Was to evaluate efficacy of cytoreductive kidney resection in patients with mRCC.

Materials and Methods: During 2008–2017 years 1939 patients with RCC were operated in our department. In 336 (17,3 %) cases, mRCC was observed, which became the subject of this study. CR was done in 86 (25.6%) cases, CN – in 250 (74.4%); with total metastasectomy in 28 (8.3%) patients. In 48 (14.3%) patients neoadjuvant targeted therapy for 2 months was given allowing in 33 (69%) to proceed with CR. After the surgery patients were given systemic therapy.

Results: The groups were equal by age, sex, IMDC risk factors, number of metastatic sites and full metastasectomy, duration of systemic therapy (p > 0.1). The groups differed by tumor size: 54.1 ± 27.3 mm vs 96.1 ± 38.5 mm (p < 0.0001) and remain functional parenchyma volume (RFPV) on the affected side – 78.1 ± 12.4% and 43.4 ± 19.5% (p < 0.000001) respectively. Kidney resection was done only in cases with RFPV over 56% and localization of the tumor at the pole 56 (65.1 %), laterally – 24 (27.9%) or medial – 6 (7%), and in medially located tumors, their size was less than 30 mm. Observation period ranged from 1 - 109 months (26.4 ± 25.9). Cancer specific death was revealed in 184 (54.8%) patients: 40 (46.5%) – after CR, 144 (57.6%) – CN. Median overall survival was significantly higher in CR group (42.8 versus 22.6 months in CN arm). 5-year CSS was also higher in CR group (45.9% versus 29.1%; p = 0.005).

Conclusion: Cytoreductive kidney resection in combination with systemic therapy is indicated in the RFPV over 56% and a resection-friendly tumor located that significantly increases rates of median OS and CSS in mRCC patients.

UP-231

Combination of Partial Nephrectomy and Systemic Therapy as a New Way to Increase the Survival Rate at mRCC

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Introduction and Objective: The aim of our study was to evaluate oncological and functional results of partial nephrectomy in kidney tumors large than 7 cm.

Materials and Methods: Retrospective analysis of 1090 patients with RCC who underwent partial nephrectomy in our department from 2008 to 2017 years. In 140 (12.8%) cases the size of the tumor was more than 7 cm, which became the subject of this study. Mean age was 51.9 ± 11.7, ranging from 19 to 81 years. Male - 86 (61.4%), female – 54 (38.6%). Mean tumor size - 96.2 ± 14.2 mm, ranging from 71 to 219 mm. R.E.N.A.L. score was 9.9 ± 1.9. Remaining functioning parenchyma volume (RFPV) ranged from 56 to 90% (71.3 ± 8.2). Total GFR - 86.2 ± 14.4, on the affected side – 38.2 ± 11.1 mL/min. Functional outcomes were evaluated in terms of GFR 3 and 12 months after surgery. Oncological results according to RECIST progression criteria.

Results: In all cases open partial resection of the kidney was performed, in 51 (37.1%) was supplemented with adrenalectomy due to tumor placement in the upper pole of the kidney and high risk of invasion. The main indication for its implementation was RFPV over 56 % and tumor polar or 99 (70.7%) and lateral location – 41 (29.3%). In 56 (40%) cases central ischemia was used, with time ranging from 4 to 25 minutes (13.1 ± 4.5). Blood loss ranging from 100 to 2500 mL (680 ± 380) with 10 (7.1%) patients who underwent hemo-transfusion. Postoperatively, there were 8 (5.7%) complications: In 5 (3.6%) cases - urinary fistula, which was managed with kidney stenting, in 3 (2.1%) cases – bleeding with the formation of retroperitoneal hematoma, requiring re-operation and elimination of the bleeding causes. Observation period ranged from 1 - 109 months (26.4 ± 25.9). Local recurrence occurred in 4 (2.8%) patients: 3 (2.1%) patients underwent radical nephrectomy, one required systemic therapy due to metastatic disease. There were found no statistically significant difference between preoperative and postoperative total GFR (p > 0.07), mostly associated with compensatory mechanisms. There was found statistically significant decrease in GFR on the affected side 3 months and 1 year after surgery, although kidney function was retained.

Conclusion: The main indication for resection of the kidney in large tumors is not the size of the tumor, but its location and the presence RFPV over 56%, which gives the opportunity to get good oncological and functional results, with low rates of intra- and postoperative complications.

UP-232

Cytoreductive Nephrectomy in Patients with Metastatic Renal Cell Carcinoma: Will These Be Managed Surgically After CARMENA?

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Introduction and Objective: About 15-20% of newly diagnosed RCC present with synchronous metastases. Cytoreductive nephrectomy (CN) is the standard of care when technically feasible and optimal performance status. However, the CARMENA trial has shown non-inferiority of Sunitinib alone in comparison to CN plus Sunitinib in terms of overall survival (OS). We aimed to evaluate the surgical management of metastatic RCC at our institution before the CARMENA results.

Materials and Methods: We retrospectively reviewed all metastatic RCC who underwent CN at our institution between 2006-2018. We analysed patients and disease characteristics, and these were stratified according to IMDC prognostic criteria. Clinical stage, metastasis location, targeted-therapy and time to progression were recorded. Progression-free survival (PFS) and cancer specific survival curves (OS) were estimated, using the Kaplan-Meier method.

Results: We identified 28 CN, 23 (82%) of them were categorised as intermediate prognosis (IP) and 5 (18%) as poor prognosis (PP). Clinico-pathological characteristics are summarized in table 1. Surgical management included CN in 22 cases (79%), whereas 6 cases (21%) CN was associated with metastasectomy. Targeted-therapy included Sunitinib in 16 (70%) and Pazopanib in 4 (17%) for patients in the IP group. Complete surgical excision was performed in 1 patient. In the PP group all patients received Sunitinib. Median number of cycles were 6 (range 3-10). With a median follow up of 16 months (7-35), median time to recurrence for CN + metastasectomy was 16 months (9-27). PFS and OS rates for each prognostic group are shown in table 1.

Conclusion: CN plus targeted-therapy is the standard of care for mRCC. Our data shows similar results in OS with CARMENA trial for the CN arm. Further analysis from RCT should identify which patients will still benefit from surgical management in the metastatic setting.

UP.232, Table 1.

	IP(23)	PP(5)	CN + Sunitinib (CARMENA) (226)
Age	62(57-71)	60(50-72)	63(33-84)
ECOG			
0	11(48%)	3(60%)	130(57,5%)
1	12(52%)	2(40%)	96(42,5%)
Stage			
T1	3	1	5/67(7,5%)
T2	2	0	13/67(19,4%)
T3/T4	18	4	47/67(70,1%)
Tamaño(mm)	90(20-180)	90(50-160)	88(6-200)
Metastasis			
Lung	11(47,8%)	3(60%)	172/217(79,3%)
Bone	10(43,5%)	1(20%)	78/217(35,9%)
Lymph nodes	8(34,8%)	2(40%)	76/217(35%)
Others	3(13%)	1(20%)	78/217(35,9%)
PFS(months)	10(4-14)	7,5(2-13)	7,2(6,7-8,5)
OS(months)	14,5	18	IP:19; PP:10,2

CN: Cytoreductive Nephrectomy; PFS: Progression-free survival; OS: Overall survival

UP-233

Tumor Seeding After Laparoscopic Nephroureterectomy: A Multimodal Approach

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Introduction and Objective: Skeletal muscle metastases following cancer surgery are rare. Few cases were reported in the literature, mostly attributed to iatrogenic implantation after Laparoscopic surgery or a percutaneous nephrostomy. We report a case of abdominal tumor seeding after a laparoscopic nephroureterectomy, treated with a multimodal approach.

Materials and Methods: We review a case of an 83-year-old patient with a tumor seeding that occurred 5 months after a laparoscopic nephroureterectomy for a urothelial carcinoma of the upper urinary tract.

Results: An 83-year-old female patient underwent a left laparoscopic nephroureterectomy for a urothelial Carcinoma of the Upper Urinary Tract. Surgery was performed without any complications, the specimen was removed without manipulation or accidental rupture, using a Endo Bag. Histological examination revealed a high-grade transitional cell carcinoma with lamina propria involvement (stage T1G3) and negative surgical margins. The patient was evaluated 5 months after surgery with an increasing abdominal mass at a laparoscopic port site. Abdominal and pelvic CT scan showed an 8 cm, solid lesion of the abdominal wall with heterogeneous density but no evidence of visceral metastasis. Surgical enucleation of the abdominal wall mass was performed with a safety margin of 2 cm. A primary closure of the peritoneum was performed, and the abdominal wall was reconstructed with a permanent mesh with a bioresorbable coating. Skin closure was achieved with an abdominoplasty-like approach. Histological examination confirmed the diagnosis of poorly differentiated tumor consistent with transitional cell carcinoma infiltrating the fibromuscular adipose tissue; the surgical margins were negative. The patient will start systemic chemotherapy (gemcitabine and cisplatinum).

Conclusion: Tumor seeding after laparoscopic surgery is uncommon. However, it can be managed in multimodal approach, surgical ablation with reconstruction of the abdominal wall and chemotherapy.

UP-234

Doege-Potter Syndrome – A Case Report

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Introduction and Objective: Doege-Potter syndrome is an uncommon paraneoplastic syndrome presenting as a hypo-insulinemic hypoglycaemia resulting from ectopic secretion of a prohormone of insulin-like growth factor II (IGF-II) from a solitary fibrous tumour. Surgical resection is curative in the majority of cases.

Materials and Methods: We report a case of an 83-year-old male patient with progressive increase of the abdominal volume for seven months, in association with hypoglycaemia.

Results: An 83-year-old male patient was admitted with a progressive increase of the abdominal volume for seven months, in association with recurrent episodes of syncope, as a result of hypoglycaemia. Physical examination revealed the presence of a palpable mass in the left flank. Computed tomography (CT) scan demonstrated a large renal exophytic tumour with 19 x 17 x 18.7 cm, heterogeneous, weak arterial vascularization and areas of necrosis. The hypothesis of insulinoma was ruled out by the low insulin serum levels 12.3 µUI/mL (normal <28.0). Plasma IGF-I and IGF-II levels were measured and were respectively 29.00 ng/mL (normal: 55–166 ng/mL) and 458 ng/mL (normal: 288–736 ng/mL). The ratio IGF-II/IGF-I was higher than 10, suggestive of hypoglycaemia caused by non-islet cell tumours, the Doege-Potter syndrome (DPS). It was performed an open left radical nephrectomy. Morpho-histopathological analysis indicated a solitary fibrotic tumour (SFT) without malignancy criteria. After surgery, the patient did not present anymore hypoglycaemic events.

Conclusion: The Doege-Potter syndrome is a rare paraneoplastic syndrome, characterised by non-islet

cell tumour hypoglycaemia (NICTH) secondary to a solitary fibrous tumour that secretes insulin-like growth factor (IGF) 2. Definitive treatment can be achieved with tumour resection.

UP-235

Partial versus Radical Nephrectomy: Treatment Selection and Survival

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Introduction and Objective: Partial nephrectomy (PN) has become the standard approach for T1a renal cell carcinoma (RCC). The main advantage of partial nephrectomy over radical nephrectomy (RN) is preserving renal function; the major disadvantages include the possibility of local recurrence and perioperative complications. The aim of this study was to evaluate demographic and clinical characteristics of patients submitted to these two types of surgery and the impact on overall survival (OS) in a real-world context using a population-based cancer registry.

Materials and Methods: A historical population-based cohort study was designed considering all patients aged ≥ 18 years old, diagnosed with RCC during 2014 that resided in Southern Portugal Cancer Registry (ROR-Sul) influence area at diagnosis and that were treated with PN or RN. We evaluate the patient and disease characteristics, submitted to PN and RN and the impact on OS.

Results: A total of 318 patients were included. Most patients were male (67.6%) and the median age was 64 years (IQR: 54-71). The most prevalent histology was clear cell carcinoma (75.8%) and most patients presented with cT1a disease (39.9%): RN and PN were performed in 242 (76.1%) and 76 (23.9%) patients, respectively. Median follow-up for all patients was 3.3 years, with 99.6% completeness. There were no differences in sex and age between PN and RN. PN was performed more often than RN in patients presenting with lower tumor stages (T1a 73.7% vs 29.3%). Regarding the median tumor size, PN were performed in smaller tumors (27.5mm vs 47 mm, p< 0.001). Patients comorbidities were higher in the patients submitted to RN (p= 0.252). During follow-up, tumor relapse was more frequent in patients who performed RN compared with PN (11.6 % vs 5.3%, p= 0.274). The 3-year OS rate for PN and RN was 88.2% and 78.1% RN (p < 0.031), respectively.

Conclusion: Despite the RN was the most common treatment option for patients with RCC, PN was preferred in tumors with less than 3 cm, regardless from the patient's comorbidities. Although PN is suggested to be associated with better OS these results should be interpreted with caution since RN was performed in poor prognosis patients.

UP-236

A Comparison of Upper Tract TCC Treated with Boari Flap or Laser Fulguration

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Introduction and Objective: Upper tract TCC can be treated in a number of ways.

Materials and Methods: We present a retrospective analysis of 33 patients treated with either laser fulguration or Boari flap.

Conclusion: There was no significant difference in outcome. Log rank P value = 0.19.

UP-237

Trocar Site Recurrence After Robotic Partial Nephrectomy to Treat of Renal Cell Carcinoma

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Introduction and Objective: Wound seeding during surgical excision of malignant tumor is known problem in the oncologic surgery. Trocar site recurrence is well described in laparoscopic oncologic surgery. Little has been reported about trocar site recurrence (TSR) after robotic partial nephrectomy (RPN) performed for renal cell carcinoma RCC. Here we report on the incidence of TSR and demonstrate the presence of this type of RCC recurrence.

Materials and Methods: We reviewed prospectively collected data about patients who underwent RPN at our institute from September 2009 - March 2018. We reviewed the medical record of the patients who had the diagnosis of RCC on the final pathology. We identified the patient with TSR and demonstrated their presentation and treatment along with the outcome.

Results: A total of 335 patient underwent robotic partial nephrectomy during the study period for renal mass. 269 (80.3%) patient were found to have RCC on the final pathologic evaluation of their mass. We identified 2 patients (0.7% of all the RCC in the study) who developed TSR during an average follow up period of 31 months (ranging from 18 -72 months). The first recurrence appeared 18 months after surgery. The second presented 72 months after RPN. Both cases underwent open surgical excision of the trocar site in which the recurrence appeared.

Conclusion: TSR is potential type of RCC recurrence after RPN, though it is rare and underreported. Special attention should be given to examining the trocar site during the surveillance follow up of RCC treated with RPN. It can develop up to 72 months after surgery.

UP-238

The Outcome of Surgical Management of Advanced Renal Cell Carcinoma with Venous Extension at Tertiary Care Center

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Introduction and Objective: Locally advanced renal cell carcinoma (RCC) presents occasionally with tumor thrombus extension into the renal vein and inferior vena cava. Surgical excision with radical nephrectomy and thrombectomy remains the mainstay treatment of this type of kidney cancer. In this abstract, we are reporting on our experience in radical nephrectomy combined with thrombectomy.

Materials and Methods: We retrospective reviewed data of the patient who underwent radical nephrectomy combined with tumor thrombectomy at a tertiary care institution from March 2010 to March 2019 was performed.

Results: Twenty-two patients had tumor thrombus invasion into the renal vein and IVC. The median age at diagnosis was 65 years-old with a male-to-female ratio of 3:1. All patients had pre-operative CT imaging, while 73% had a dedicated MRI. Average blood loss was 1900 mL (350-4200 mL), intraoperative blood transfusion 4 units (0-13 units), operative time was 7 hours (5-11 hours), and length of stay 9 days (3-26 days). Intraoperative complications were 12 % and unplanned intraoperative vascular surgery consultation 25%. Major complications (Clavien III-V) occurred in 18% of patients. Disease recurred in 27% of patients within an average of 6 months. Of the 22% of

UP.236, Table 1. Results:

	Boari patients	Laser patients	Significance
n	20	13	
Male/female	7 (35%) 13 (65%)	10 (77%) 3 (23%)	Fishers P = 0.032
Presentation			
Haematuria	10 (50%)	7 (54%)	P = 1.0
Surveillance	5 (25%)	3 (23%)	P = 1.0
Incidental	5 (25%)	3 (23%)	P = 1.0
Smokers	13 (65%)	8 (62%)	P = 1.0
ASA score			
1	5 (25%)	0	
2	10 (50%)	5 (39%)	
ASA 1 and 2	15 (75%)	5 (39%)	P = 0.067
3	5 (25%)	6 (46%)	
4	0	2 (15%)	
ASA 3 and 4	5 (25%)	8 (61%)	P = 0.067
Age years	Mean 71 median 72	Mean 78.5 median 82	t test P = 0.076

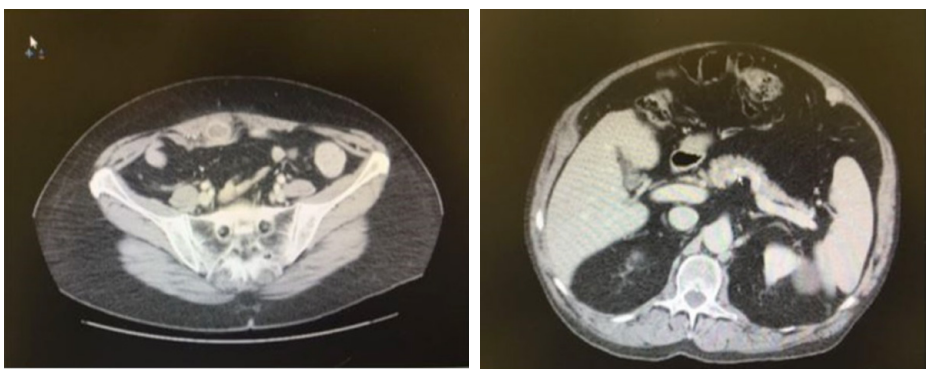
UP.236, Table 2. Tumour characteristics

	Boari	Laser	
Grade		Not known 2 (15%)	
1 low	6 (30%)	2 (15%)	P = 0.67
2 medium	11 (55%)	5 (39%) 2Hg 3Lg	P = 0.76
3 high	3 (15%)	4 (31%)	P = 0.21
Stage		Not known 1 (7%)	
pTa	16 (80%)	11 (85%)	P = 0.62
pT1	1 (5%)	0	P = 1.0
pT2	3 (15%)	1 (8%)	P = 1.0
Site			
Proximal	0	6 (46%)	P = 0.002
Mid	0	1 (8%)	P = 0.39
Distal	20 (100%)	6 (46%)	P = 0.002

UP.236, Table 3. Prognosis

	Boari 32 months	Laser 32 months
Recurrence	2 (10%)	8 (62%)
Mean time to recurrence	6 months	4 months
Progression	1	2 (15%)
Mean time to progression	6 months	14 months
Mortality		
ACM all showed recurrence	2 (10%)	3 (23%)
censored	1	7
Survived at 32 months	17	3
DSM	1 (50% of ACM)	1/3 (33% of ACM)
Survival at 32 months	89%	64%

UP.237, Figure 1.



patients who died, the average survival was 39 months (2-70 months).

Conclusion: Radial nephrectomy with tumor thrombectomy is complex procedure with relatively high rate of morbidity. The procedure however is justified based on the lack of alternative treatment options.

UP-239

Clinical Parameters Affecting Surgical Strategy in RCC

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Introduction and Objective: The aim of the study was to delineate the principal factors affecting the selection of the surgical tactics in RCC treatment based on multivariate analysis of the major clinical and nephrometric parameters.

Materials and Methods: The clinical data of 1158 patients with RCC stages T1-T2, who were surgically treated in 2010-2018, have been analyzed retrospectively. PN was performed in 922 patients (79.6%); RN in 236 patients (20.4%). Both groups were matched in terms of the major clinical and demographic parameters. The following nephrometric factors were taking into account: tumor size, exo- or endo-phytic growth pattern, the proximity of tumor to the renal cavitary system, and tumor location. The volume of the functional renal parenchyma (VFRP) was assessed by the original methodology.

Results: A multivariate Cox regression analysis comprising 11 parameters was used for predicting PN or RN. When prognostic ROC curves were plotted, the non-linear neural network accounting for three parameters (VFRP, localization and size of tumor) proved as the most optimal (AUC = 0.94 (95% C? 0.92-0.95) with model sensitivity of 86.5% (95%CI 81.3% - 89.0%) and specificity of 85.5% (95%CI 82.3%-88.3%). The nomograms demonstrating how VFRP and tumor size affect the selection of the appropriate surgical treatment depending on the tumor location have been plotted. For RCC with polar localization, VFRP > 58 % should be considered as indication for PN. For RCC located in sinus, the tumor size less than 38 mm on the average should be considered as indication for RN. The analysis allowed us for the development of the novel neprometric system for the assessment of tumors of kidneys (NCIU-nephrometry). NCIU system that takes into consideration both tumor location and VFRP allows one for determining precisely the indications for RN or PN.

Conclusion: The tumor size, the tumor location, and VFRP are the major factors affecting the selection of the appropriate surgical treatment of RCC. In case of polar location of the tumor with VFRP > 58%, PN should be considered. In case of medial location of the tumor, the size of the tumor is the principal factor affecting the selection of the surgical tactics.

UP-240

Mesenchymal Tumors of Kidney: Are they Benign or Malignant? Case Series and Review of Literature

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Introduction and Objective: Mesenchymal tumors of kidney are rare. Mesenchymal tumors encompass a large variety of list. Immunohistopathology is the mainstay for diagnosis. Survival and prognosis depends upon the definite histopathology.

Materials and Methods: We had retrospectively collected data of patients who were operated and diagnosed as mesenchymal tumors of kidney at our institute from January 2012 to January 2017. Epidemiological data, radiological images, operative findings and their follow up details were noted.

Results: Among 7 cases of mesenchymal tumors treated at our institute 2 were inflammatory myoblastic tumors, 1 was solitary fibrous tumor, 1 was epithelioid angiomyolipoma, 1 was monophasic synovial sarcoma, 1 was law grade leiomyosarcoma and 1 was

peripheral nerve sheath tumor. Mean age of presentation was 62 years and male predominance. Flank pain was present in all cases and 4 cases had palpable flank mass. Hematuria was present only in one patient. Routine blood investigations of all patients were normal. Radiological investigations were suggestive of large heterogenous enhancing mass compressing surrounding structure in all the cases. Mean size of mass was around 15 cm. 4 cases had enlarged lymph nodes on imagine. Radical nephrectomy with lymph node sampling was performed in all cases. Histopathology report was suggestive of spindle cell tumor and confirmation was done by IHC. After follow-up of at least 3 years, 5 patients were disease-free, and 1 patient has died within 18 months of surgery and others died within 3 years.

Conclusion: Large heterogeneity in the behaviour of mesenchymal renal tumors. Majority of mesenchymal tumors are large and seems to be aggressive in nature, but prognosis and survival are depending on final histopathology. Immunohistopathology is an integral part for the diagnosis of mesenchymal renal tumors.

UP-241

Nightmare for Surgeon - Transitional Cell Carcinoma In Horse Shoe Kidney: Case Report and Review of Literature

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Introduction and Objective: Horse shoe kidney is an abnormality of kidney that poses difficulty in renal surgery. Urothelial carcinoma in horse shoe kidney is very rare condition and difficult to operate.

Materials and Methods: A 50-year diabetic and hypertensive male presented with acute clot retention with history of gross painless hematuria with clots for 10 days. All routine investigations were normal. USG was suggestive of bladder full of clots and Right side moderate HN with 5 cm sized mass lesion filling pelvicalyceal system in horse shoe kidney. CECT abdomen was suggestive 4*5 cm size heterogeneously enhancing mass of in right renal pelvis extending in mid and lower pole calyces in horse shoe kidney with 7*8 cm size clot in bladder. We did emergency Cystoscopy and clot evacuation.

Results: There was normal bladder mucosa and hemorrhagic efflux from right orifice. After stabilizing the patient, we did Right radical nephroureterectomy with isthemectomy with bladder cuff excision and template lymph node dissection. There were multiple aberrant vessels that we have to ligate with blood loss of approx. 1.5 litre. Histopathology was in suggestive of high-grade urothelial carcinoma involving renal parenchyma. No lymph nodes were positive. Patient is asymptomatic with 2 months of follow up.

Conclusion: Incidence of urothelial carcinoma in a horseshoe kidney is 2.1 cases/10,000,000. But the incidence of urothelial carcinoma in a horseshoe kidney is approximately 3 to 4 times more compare to normal kidney, possibly due to chronic obstruction, lithiasis and infection. Vascular supply of Horse shoe kidney is anomalous which leads to difficulty in surgery.

UP-242

Primitive Neuro-Ectodermal Tumor of Kidney; A Case Report and Review of Literature

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Introduction and Objective: Neuroectodermal tumors are a heterogeneous group of neoplasm that differs in biological behaviour, histologic pattern and response to treatment. Well differentiated NET are indolent in nature and mostly arise from GIT, pancreas and lung. In GUT (very rare) kidney is most common to involved. Poorly differentiated NET are aggressive and arise from bladder and prostate. Only 65 cases of PNET of kidney are reported so far in literature.

Materials and Methods: 62 years old male presented with chief complaints of lt flank pain for 3 months without hematuria or other constitutional symptoms. On Physical examination hard large mass was palpable in left lumbar and hypochondrium which moves with respiration.

Results: All laboratory investigations were normal. Ultra-sonography of abdomen revealed large 10*15 cm size exophytic mass arising from mid and lower pole of left kidney. CECT abdomen pelvis suggested, large 11*11*16 cm heterogenous enhancing soft tissue density exophytic mass originating from mid and lower pole of left kidney. Multiple variable large pre aortic, paraaortic and inter aortocaval LN were present. Largest of 32*22 mm. Renal vein and IVC were free of tumor. We did Left open radical nephrectomy with hilar lymph nodes dissection. Intra operative the tumour was adherent to bowel loops and large hilar lymph nodes were present. Post-operative period was uneventfully. Histopathology suggestive of lobular growth of poorly differentiated round or oval cells with rossets. Peri-nephric fat invasion present. Tumour invasion was present in matted lymph node specimen. IHC of specimen was carried out which was positive for CD 56, synaptophysin and vimentin while negative for cytokeratin s/o PNET. Patient was asymptomatic after 6 months of follow up. As it was PNET of kidney post-operative cisplatin-based chemotherapy was given for 6 cycles

Conclusion: PNET tumors of kidney are very rare only 65 cases with largest series of 20 cases has been noted in literature. Radiologically it is difficult to differentiate from RCC. Morphological appearance and IHC aids in diagnosis. Radical nephrectomy is the mainstay of management with removal of lymph nodes if present. Median survival of patients were around 24 to 26 months.

UP-243

Primary Primitive Neuroectodermal Tumors of the Kidney: Immunohistochemical Analysis and Clinical Outcomes

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Introduction and Objective: Primitive neuroectodermal tumor (PNET) of the kidney is unusual in adults. These tumors are diagnosed mainly on histopathology and that too sometimes has limitations. Immunohistochemical staining can be of help in establishing the diagnosis.

Materials and Methods: In this retrospective study, we reviewed our institutional database from January 2006 to July 2018 to include all the cases of primary PNET of the kidney. Descriptive statistics was used to analyze the data. The immunohistochemistry of all cases were done, and clinical outcomes of all cases were evaluated.

Results: During the above-mentioned period a total of 420 patients with renal masses were managed at our centre of which 12 cases of primary renal PNET were managed. Of these 12 patients, 5 were males and 7 females. Clinical follow up was available for 7 patients whereas histopathological data of all the 12 patients were available. Out of these 7 patients, 2 patients had metastasis at diagnosis, one had locally advanced disease, 6 underwent radical nephrectomy, 5 patients received adjuvant chemotherapy (two currently receiving) and only 1 patient received adjuvant radiotherapy. Renal vein and IVC involvement by tumor thrombus was seen in 3 cases. On Immunohistochemistry (IHC), CD99 and FLI1 were positive in all the cases. Median survival was 10 months with range of 3 to 125 months.

Conclusion: PNET of kidney is a rare disease with incidence around 1%. PNET remains a pathological diagnosis and IHC has important place in diagnosis of PNET. Poor prognosis is due to delayed presentation and lack of definitive management guidelines. Multimodality approach seems the best possible strategy.

UP-244

Oncologic Outcomes and Prognostic Factors of Renal Cell Carcinoma According to Lymphovascular Invasion (LVI) in Pathologic (N0 vs N1)

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Introduction and Objective: Lymphovascular invasion (LVI) in other urologic malignancies including urothelial carcinoma is known to be a prognostic factor but predicting outcomes in renal cell carcinoma (RCC) is unclear. We investigated the oncologic outcomes of RCC patients with pathologic N0 and N1 according to the LVI.

Materials and Methods: From 1988 to 2016, we retrospectively analyzed 2787 patients (cT1-2) who underwent nephrectomy for RCC. Preoperative and postoperative factors according to LVI were examined. Disease specific survival (DFS), recurrence free survival (RFS), and overall survival (OS) by Kaplan-Meier analysis, and prognostic factors on OS according to LVI in pathologic (N0 vs N1) by Cox regression analysis were evaluated. Median follow up periods were 42 months.

Results: ASA score, hypertension, diabetes mellitus, Hb, ESR, CRP, Albumin, clinical T stage, tumor

size, Fuhrman nuclear grade, and pathologic T stage were significant preoperative and perioperative factors according to LVI in patients with N0 (P <0.001). Presence of LVI in pathologic N0 patients was correlated with significantly shorter DFS, RFS, and OS (P <0.001). Age at diagnosis (HR= 1.063, P <0.001), ASA score (HR= 0.952, P= 0.034), neutrophil to lymphocyte ratio (HR= 1.082, P= 0.001), albumin (HR= 0.601, P= 0.004), tumor size (P <0.001), and LVI (HR= 1.804, P= 0.018) were the prognostic factors of OS in N0 patients.

Conclusion: The presence of LVI is an independent predictor of oncologic outcomes in patients with localized RCC. These patients may need to consider surveillance or adjuvant therapy after surgery.

UP-245

Imaging Based Scoring System (SGPGI Score) for Evaluation of Surgical Outcomes in Right Renal Masses

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Introduction and Objective: Despite the availability of multiple scoring systems for the evaluation of renal masses, none address the difference between right and left sided mass. Right radical nephrectomy has an inherently higher level of difficulty due to anatomic differences. We devised a scoring system (SGPGI score) based on pre-operative CT angiography to predict the level of difficulty and outcomes of right radical nephrectomy.

Materials and Methods: In a prospective observational study on 64 patients from January 2014 to July 2018, we calculated a score based on CT angiographic imaging as per table 1. The initial scoring was done by a senior uro-radiologist at our institute. To evaluate internal consistency and interrater agreement, it was repeated by a radiology and urology resident independently. The data analysis was done using IBM SPSS statistics for mac version 23 using Shapiro-Wick test, paired t-test, Kruskal-Wallis, ANOVA, logistic regression, Cronbach's alpha and interclass correlation coefficient (ICC).

Results: Among our patients, 10 underwent laparoscopic partial nephrectomy (LPN), 8 underwent open partial nephrectomy (OPN), 28 underwent laparoscopic radical nephrectomy (LRN) and 18 underwent open radical nephrectomy (ORN). Median SGPGI score was higher in the ORN group compared to the LRN group (p = 0.001). A cut off score of 10 yielded an Area Under Curve (AUC) of 0.78. For scores higher than 10, we suggest keeping a lower threshold for conversion to open surgery. Higher score was associated with higher operating time (p < 0.001), blood-loss (p = 0.008), post op stay (p < 0.001) and Clavein Dindo score (p < 0.001). We evaluated the internal consistency by using Cronbach's alpha and this was 0.744. ICC was used to evaluate the inter-rater agreement among the 3 raters (0.678 – 1 for different components of the score).

Conclusion: The SGPGI score evaluates right renal masses based on pre-operative CT angiography and is able to predict surgical outcomes effectively.

UP-246

The Somatic Mutation of MKRN1 and KLF2 Regulate Pparγ Result in the Differentiation of Adipocyte in Renal EAML

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Introduction and Objective: Angiomyolipoma (AML) is a most common benign renal tumor. Epithelioid AML (EAML) is one of the types which is rare and has more metastatic potential. Peroxisome proliferator-activated receptor γ (PPARγ) is related to adipose differentiation and was inhibited by MKRN1 and KLF2. We are going to know the pathogenesis of EAML and development of novel biomarkers for therapy.

Materials and Methods: Whole-Exome Sequencing (WES) was used to investigate the mutation in AML tumor genesis. Immunohistochemistry was utilized to verify the expression level of MKRN1, KLF2 and PPARr in AML specimens by comparing normal site to tumor site. Immunoblotting and quantitative reverse transcription polymerase chain reaction were used to confirm the regulation between KLF2, MKRN1 and PPARr in cell model.

Results: WES of Next Generation Sequencing over 3 EAML's specimens showed same somatic mutation over MKRN1 and KLF2. IHC of PPARγ over 3 different kinds of AML showed unequal expression. The IHC of MKRN1 and KLF2 showed positive reaction. Transfection of MKRN1 over normal renal cell line (HEK293T) was done. It showed PPARγ decrease of protein level when MKRN1 over expression (Fig. 1a). But the mRNA expression showed no obvious change (Figure 1c). It showed both increase expression of PPARγ on protein and mRNA when KLF2 over expression (Fig. 1b and 1d). IHC stain of MKRN1 and KLF2 on EAML specimens showed statistically significant lower in tumor site than normal site both in nuclear and cytoplasm (Fig. 2a and 2b).

Conclusion: The findings of clinical specimens of EAML suggest the possibility that the up-regulation of PPARγ might depend on suppression of MKRN1's and KLF2's expression. However, we could not find the overexpression of MKRN1 and KLF2 result in PPARγ's suppression in HEK293T cell model. The

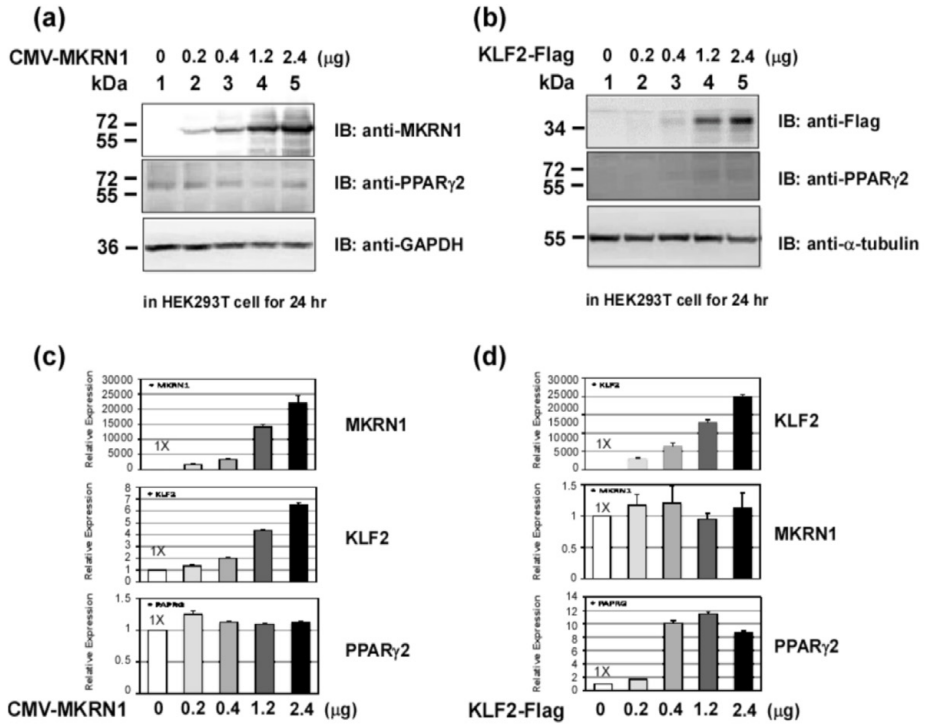
UP.245, Table 1: SGPGI score of right renal masses.

CT PROTOLOL FOR REPORTING OF RT RENAL MASS

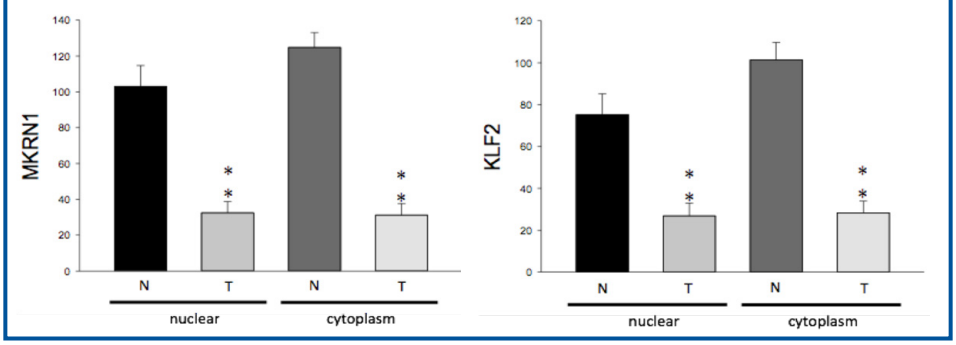
PATIENT NAME ---------- CR NO ---------- DATE ----------

S.NO	PARAMETERS			SCORING		REPORTS
1.	SIZE			-		
2.	RENAL ARTERY- MAXIMUM 4 POINTS					
	1. NUMBER & interarterial distance at origin	SINGLE		1		
		MORE (>1)		2		
	2. LENGTH OF ARTERY					
	3. DISTANCE BEFOR BRANCHING			< 1 CM	2	
				> 1 CM	1	
	4. CALIBER OF ARTERY			-		
3.	RENAL VEIN- MAXIMUM 4 POINTS					
	1. NUMBER	SINGLE		2		
		>1		1		
	2. LENGTH FROM HILUM TILL CONFLUENCE <3 cm			1		
	3. DISTANCE OF CONFLUENCE FROM LATERAL BORDER OF AORTA	< 5 MM		0		
		> 5 MM		1		
	4. CALIBER			-		
4.	LYMPHNODE- MAXIMUM 4 POINTS					
	1. LOCATION	HILAR		2		
		ALONG MAJOR VESSLES		1		
	2. NUMBER	< 5		0		
		>5		1		
	3. SIZE	> 2 CM		1		
		< 2 CM		0		
5.	PARASITIC VESSELS MAXIMUM 3 POINTS	DIAMETER	NOT SINGFICANT	0		
			< 5 MM	1		
			>5 MM	2		
	NUMBER			-		
	LOCATION	ANTERIOR / MEDIAL		1		
		POSTERIOR / LATERAL		0		
6.	APROTA- MAXIMUM 2 POINTS ANTEROPOSTERIOR DIAMETER RATIO OF TUMOR AND ABDOMEN					
				>. 0.4	0	
				<. 0.6	1	
				>. 0.6	2	
7.	LOCATION OF MASS MAXIMUM 3 POINTS					
	CENTRAL ABUTTING HILUM			3		
	CENTRAL NOT ABUTTING HILUM			2		
	PERIPHERAL			1		
	POLAR			0		
8.	R E N A L SCORE			-		

UP.246, Figure 1. (**a**) The protein expression of PPARγ with MKRN1 over expression. (**b**) The protein expression of PPARγ with KLF2 over expression. (**c**) The mRNA expression of PPARγ with MKRN1 over expression. (**d**) The mRNA expression of PPARγ with KLF2 over expression.



UP.246, Figure 2. N means the normal site. T means the tumor site. (a) The IHC of MKRN1 (b) The IHC of KLF2.



relationships between MKRN1, KLF2 and PPARγ require extensive research and further clinical proof.

UP-247

Systemic Immune-Inflammation Index Predicts the Clinical Outcome in Patients with Metastatic Renal Cell Cancer Treated with Nivolumab

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Introduction and Objective: In this retrospective analysis, we explored the prognostic and predictive value of the systemic immune-inflammation index (SII), based on lymphocyte, neutrophil, and platelet counts, at baseline and changes at week 6 during second line nivolumab in patients with metastatic renal cell cancer (RCC).

Materials and Methods: We included 38 consecutive RCC patients treated with second line nivolumab. The X-tile 3.6.1 software (Yale University, New Haven, CT) was used for bioinformatic analysis of the data to determine the cut-off value of SII. Progression-free survival (PFS), overall survival (OS) and their 95% confidence interval (95% CI) were estimated by Kaplan-Meier method and compared with log rank test. The impact of SII conversion at week 6 of treatment on PFS and OS was evaluated by Cox regression analyses.

Results: Patients were stratified into high SII (≥ 750) and low SII (< 750) groups. SII was associated with objective response, p < 0.0001. The median PFS was 11.15 months (95% CI 4.2-22) in patients with SII ?750 and 21.7 months (95% CI 14.7-22.8) in those with SII < 750, p < 0.0001. The median OS was 43.2 months (95% CI 35.3-52.1) in patients with SII < 750, and 14.8 months (95% CI 6.8-19.7) in those with SII ≥ 750, p < 0.0001. In multivariate analysis, performance status, IMDC score and SII were able to predict OS (HR = 3.21, HR = 1.68 and HR = 1.74, respectively).

Conclusion: The SII and its changes during treatment represent a powerful prognostic indicator of clinical outcome in patients with metastatic RCC. Further studies are needed to better define their impact and role in these patients

UP-248

Are All Small Renal Masses the Same?

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Introduction and Objective: Discordance exists between institutional and population-based registries regarding the metastatic potential of small renal masses (SRMs), with the ramifications being reflected in the EAU platinum article. The objective of this study is to evaluate other variables that could predict synchronous metastasis in SRMs.

Materials and Methods: This is an IRB-approved retrospective study of a large cohort of patients (n=592) diagnosed with SRMs over a 16 years period (2001-2016) from a large prospectively maintained prostate cancer database. Variables associated with synchronous metastasis and subsequent relapse were analysed using logistic regression models.

Results: A total of 16 patients (2.7%) presented with synchronous metastasis. On multivariate analyses, tumour size (>3cm) (p= 0.007, HR 6.29, 95% CI: 1.67 – 21.82), symptomatic cancer (p= 0.039, HR 3.88, 95% CI 1.36 – 10.64), age (>65) (p= 0.004, HR 5.26, 95% CI 1.73 – 16.05) and synchronous tumours (p= 0.019, HR 13.08, 95% CI 1.95 – 33.18) were independent predictors of M1 RCC. A weighted predictive model (Concordance index 0.786, Sensitivity 81.3%, Specificity 73.4% and Negative predictive value 99.3%) showed that score ≥ 2 significantly increases risks of synchronous metastasis (7.8% vs <1% for score <2, p <0.01 HR 12.02 95% CI 5.46 – 32.62). 521 (90.5%) patients underwent nephrectomies, 29 (5.0%) had ablative therapies and 26 (4.5%) patients continued on active surveillance/watchful waiting. Over a median follow-up of 61.8 months, 30 patients (5.8%) had disease recurrence. On multivariate analyses, Fuhrman grade (III/IV) (p <0.001, HR 7.76, 95% CI 2.76 – 20.80) and presence of lymphovascular invasion (p= 0.023, HR 7.58, 95% CI 1.38 – 23.42) were independent predictors of recurrence. A separate predictive model (Concordance index 0.723, Sensitivity 66.7%, Specificity 77.9%, Negative predictive value 97.4%) revealed that presence of either pathological outcome increases recurrence risk up to 15.7% compared to 2.6% when none is present (p <0.01, HR 7.05, 95% CI 3.20 – 15.51).

Conclusion: Apart from tumour size, we have identified several other clinical variables that can better

identify the metastatic potential of SRMs. It is evident some SRMs harbour aggressive potential, which necessitates a complete metastatic workup, aggressive curative therapy and stringent follow-up to ensure favourable prognosis.

UP-249

Evaluation of Postoperative Renal Function in Off-Clamping and Non-Renorrhapy Laparoscopic Partial Nephrectomy

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Introduction and Objective: Although partial nephrectomy is the standard treatment for small renal tumor, temporary clamping of renal artery and renorrhapy were adverse factors for the post-operative renal function. The objective of this study was to evaluate the influence of off-clamping and non-renorrhaphy laparoscopic partial nephrectomy using soft coagulation on the renal function.

Materials and Methods: A total of 100 consecutive patients received laparoscopic partial nephrectomy (LPN) in our hospital between June 2009 and November 2018. LPN was performed with hilar clamping and renorrhapy (conventional technique) until October 2014. Then, we performed LPN with off-clamping non-renorrhapy technique using soft coagulation. Renal function was monitored after LPN with and without hilar clamping and renorrhapy.

Results: Thirty-four and 66 patients were received LPN with conventional technique and off-clamping non-renorrhapy technique, respectively. Of patients receiving LPN with off-clamping non-renorrhapy technique, 35 patients underwent hilar clamping or renorrhapy because of uncontrollable bleeding or suture-repairing of opening the urinary tract in the operation (incomplete group), therefore 31 patients achieved LPN by off-clamping non-renorrhapy technique (complete group). In comparison of perioperative renal function, though the median eGFR significantly decreased only on the day after the operation and improved after 3-5 days in patients of complete group, the significant decline in eGFR continued until one year after the operation in patients with conventional and incomplete groups. The decline rate of eGFR on the day after the operation was significantly higher in patients of conventional and incomplete groups.

Conclusion: Off-clamping and non-renorrhapy laparoscopic partial nephrectomy using soft coagulation was a favorable surgical technique for preservation of the post-operative renal function.

UP-250

Predictive Value of Preoperative Neutrophil-To-Lymphocyte Ratio in Non-Metastatic Papillary Renal Cell Carcinoma Patients after Receiving Curative Surgery

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Introduction and Objective: To determine the predictive value of preoperative neutrophil-to-lymphocyte ratio (NLR) for disease-free survival (DFS) in non-metastatic papillary renal cell carcinoma (pRCC) patients after receiving partial or radical nephrectomy.

Materials and Methods: This retrospective study included 76 non-metastatic pRCC patients (T1-3N0M0) between 2013 and 2018. The receiver operating characteristics (ROC) curve analysis was performed, setting an NLR cut-off of 2.5 to achieve the maximum diagnostic accuracy. Kaplan-Meier method and the Cox regression models were used to determine the relationship of NLR with DFS.

Results: During a median follow-up of 28.0 months (IQR 15.9-42.1, mean 31.4), disease recurred in 12 patients (15.8%) at a median duration of 14.4 months (IQR 8.6-22.9, mean 16.6). The 5-year DFS was 85.5% and 61.6% for the low < 2.5 and high ≥ 2.5 NLR groups, respectively. By Kaplan-Meier analysis, the DFS was significantly worse in high NLR group compared with that in the low NLR group (p= 0.03). Univariate analysis revealed that high NLR level (HR 3.3, p= 0.041), advanced pathological T stage (HR 10.1, p<0.001), larger tumor size (HR 1.2, p= 0.008) and radical nephrectomy (HR 5.7, p= 0.025) were associated with worse DFS. On multivariate analysis, advanced pathological T stage (HR 6.9, p= 0.010) and high NLR level (HR 3.8, p= 0.028) remained the independent prognostic factors for worse DFS.

Conclusion: High preoperative NLR level was an independent prognostic marker for DFS in the patients of non-metastatic pRCC (pT1-3N0M0) who received curative surgery. It may be used as a meaningful adjuvant to select patients for adjuvant clinical trials or more frequent follow-up strategies.

UP-251

Benefit of IHC Staining for VEGF A Expression in Patients with Advanced and Metastatic CCRCC

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Introduction and Objective: Clear cell renal cell carcinoma (CCRCC) is the most predominant renal tumor with unpredictable tumor behavior. The aim of the study is to investigate the prognostic value of vascular endothelial growth factor A (VEGF A) expression in CCRCC.

Materials and Methods: Tumor blocks were taken from 40 patients with histopathology diagnosis of CCRCC and tissue block from 20 normal kidneys as a control group were examined using the immuno-histochemical staining (IHC) for VEGF A.

Results: The VEGF A expression in CCRCC was significantly higher than in the normal kidney tissues (U'=720, P<0.0001). VEGF A expression values in CCRCC were positively correlated with correlated with the tumor necrosis degree (r=0.181, P=0.262) and Disease-Free Survival (r=0.335, P=0.034). VEGF A expression values in CCRCC did not correlate with Progression Free Survival (r = -0.07, P=0.838). VEGF A expression values in CCRCC were negatively correlated with: The tumor nuclear grade (r=-0.161, P=0.318); The pathological tumor stage (r=-0.371, P=0.018); The tumor hemorrhage degree; The tumor size (r=-0.361, P=0.022); and Cancer Specific Survival (r =-0.207, P=0.713).

Conclusion: This study demonstrates that tumor VEGF A expression is a valuable prognostic factor and can be used to stratify advanced and metastatic CCRCC patients into low-benefit and high-benefit groups. Therefore, we recommend that performing IHC staining for VEGF A expression would be very useful in the treatment strategy of patients with CCRCC.

UP-252

Initial Experience of Neoadjuvant Therapy with Pazopanib Plus Peripheral Blood Lymphocytes Incubated with Pembrolizumab in Renal Cell Carcinoma: A Report of 3 Cases

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Introduction and Objective: Tyrosine kinase inhibitors (TKIs) combining with immunotherapy can improve the objective response rate (ORR) of patients with renal cancer, but markedly increase the incidence of adverse events (AEs). We develop a new method of neoadjuvant therapy to treat patients with absolute or relative indications of partial nephrectomy (PN) but in high surgical risk, trying to shrink the tumor, reduce AEs and surgical difficulty.

Materials and Methods: We present 3 cases of renal cell carcinoma with indications of PN but moderate or severe surgical difficulties. Pazopanib was taken 800 mg once a day, and low dose (20mg) pembrolizumab incubated autologous peripheral blood lymphocytes were administrated once a week in the first 4 weeks and then once every two weeks thereafter. The therapeutic course will last no longer than 3 months.

Results: Computed tomography (CT) evaluations had taken after 1.5 month of starting treatment. The therapeutic evaluation of case one was stable disease (SD) (table 1). AEs were grade 2 skin reaction of hands and feet, oral mucositis and elevated alanine aminotransferase (ALT). Case two was evaluated as partial remission (PR), and AEs were grade 2 vomiting and grade 1 thrombocytopenia. Case three was evaluated as SD. AEs were grade 3 elevated ALT and grade 2 skin reactions and hypertension. The AEs had relieved after symptomatic treatment and PN were performed successfully in 3 cases.

Conclusion: Neoadjuvant therapy with pazopanib plus peripheral blood lymphocytes incubated with pembrolizumab in renal cell carcinoma that having indication of PN but in high surgical risk, may shrink the tumor and reduce AEs meanwhile, then PN may be implemented successfully. However, further clinical study is still needed to verify this conclusion.

UP.252, Table 1. Evaluations before and post treatment of 3 cases.

Case	R.E.N.A.L score		Maximum diameter			Tumor volume		
	Prior	Post	Prior (cm)	Post (cm)	Shrunken ratio (%)	Prior (cm)	Post (cm)	Shrunken ratio (%)
One	11p	10p	5.2	3.8	26.9	64.6	26.7	58.7
Two	9hp	7hp	3.1	1.6	48.3	13.0	4.8	63.1
Three	9hp	9hp	6.5	5.8	10.7	92.8	57.6	37.9

UP-253

Three-Dimensional Printing Assisted Laparoscopic Partial Nephrectomy for Patients with Renal Cancer

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Introduction and Objective: To explore the effectiveness of three-dimensional printing physical model assist laparoscopic partial nephrectomy (3D-LPN) in patients with renal tumors.

Materials and Methods: This was a retrospective analysis of data collected from all patients who underwent LPN with or without 3D physical model assisted from January 2016 and February 2018. Demographic characteristics, operative data and clinical outcomes from the procedure were collected and compared.

Results: Data were available from 127 patients of whom 69 were operated on using 3D-LPN and 58 were operated on using traditional LPN. The 3D model assisted, and laparoscopic partial nephrectomy groups were equivalent in terms of age, gender, body mass index, anesthesiologist's status, R.E.N.A.L score and surgical approach, respectively. Comparison of clinical metrics indicated that no difference between groups in operative time, estimated intra-/postoperative blood losses, increased creatinine level and complications, respectively (P>0.05). Warm ischemia time was statistically significantly shorter in 3D-LPN (P<0.05), while surgery waiting time was long for 3D-LPN vs LPN (P<0.05). Subgroup analysis based on complexity indicated that for complex tumor 3D-LPN significantly shorter warm ischemic time and lesser intraoperative blood loss than traditional LPN. Intra-and postoperative hospital complication rates were similar for 3D-LPN and traditional LPN (8.7% vs 13.7%).

Conclusion: 3D physical model is a technically safe and efficient tool to assist laparoscopic partial nephrectomy, offering the advantages of shorter warm ischemia time and less intraoperative blood loss, especially for complex renal tumor.

UP-254

3D Printing Technique in Laparoscopic Partial Nephrectomy: An Additional Tool to Assist Segmental Renal Artery Clamping

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Introduction and Objective: Clamping the segmental renal artery instead of the main renal artery during nephron-sparing surgery is a promising technique to decrease warm ischemia injury, which impacts renal function outcomes following partial nephrectomy. Our objective was to explore the effectiveness and safety of three-dimensional (3D) printing model on preoperative planning and intraoperative guidance for segmental renal artery clamping in laparoscopic partial nephrectomy.

Materials and Methods: 8 patients who qualified for laparoscopic partial nephrectomy with clamping the segmental renal artery were selected. 3D physical models were designed based on these patients' contrast enhanced computed tomography (CT) images data. The target segmental arteries, clamping position, and a different hilar approach accessing target segmental arteries were planned preoperatively. The operations carried out under the intraoperative guidance of the physical model. Patients' demographic, intraoperative parameters and surgical outcome, including operative time, warm ischemia time, intraoperative and postoperative blood losses, increased creatinine level as well as complications, were collected and analyzed.

Results: All patients successfully underwent partial nephrectomy with segmental renal artery clamping and all margins were negative. The mean operative time was 140.5 mins, warm ischemia time was 23.5 mins, intraoperative and postoperative blood losses were 90.7 mL and 140.7 mL, respectively. And the mean increased creatinine level was 16.8 mg/dL. Anecdotally, no delayed complication occurred during the follow-up period.

Conclusion: 3D physical models provide effective orientation for segmental renal artery clamping technique and lead to satisfactory surgical outcomes.

UP-255

The Clinicopathological Characteristics and Prognostic Analysis of Papillary Renal Cell Carcinoma

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Introduction and Objective: To evaluate different clinical factors and pathological characteristics in papillary renal cell carcinoma (PRCC), explore whether those risk factors are suitable to predict the prognosis of PRCC and discuss the relationship between those risk factors and the prognosis of PRCC.

Materials and Methods: Retrospective analysis of the clinical and pathological data of patients with PRCC in the Afflicted Cancer Hospital of Xiangya School of Medicine, Central South University from January 1, 2004 to December 31, 2014 and the corresponding survival status of patients underwent surgery were collected.

Results: Of the 59 patients (46 men and 13 women, mean age 58 ± 6 years) with PRCC, 6 were lost to follow-up. The overall rate of the progress free survival of 1-year, 3-year were 94.3% and 73.6%; the overall survival rates of 3-year were 86.4%. Compared with high-grade stage groups (stage II, III and IV) in TNM stage, the patients with low-grade stage groups (stage I) have better prognosis, the rate of the progress free survival of 1-year, 3-year were 100% and 84.2% in low-grade stage groups, and 78.8% and 57.9% in high-grade stage groups. The rate of the progress free survival of 1-year, 3-year were 100% and 75.6% in type 1 tumors, and 82.4% and 64.7% in type 2 tumors. As have been shown in Cox regression univariable analysis and multivariate analysis, preoperative anemia, tumor size, lymph node metastasis, pathological subtypes and TNM stage were significantly associated with prognosis from papillary renal cell carcinoma, while TNM stage (95% CI: 0.087-0.975, P= 0.030) and pathological subtype (95%CI: 1.124-9.623, P= 0.045) allow for the identification of independent prognostic factors.

Conclusion: Type I PRCC have better prognosis, and preoperative anemia, tumor size and lymph node metastasis also have effect on prognosis. More active follow-up and postoperative adjuvant therapy should be considered for patients with those risk factors.

UP-256

Improved Early Unclamping ("2+1" Method) for Laparoscopic Partial Nephrectomy in Moderately Complex Renal Cell Carcinoma

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Introduction and Objective: To evaluate the clinical efficacy of improved early unclamping (I-EUC) in laparoscopic partial nephrectomy (LPN) for moderately complex renal carcinoma.

Materials and Methods: A retrospective analysis of 130 patients with moderately complex renal cell carcinoma (R.E.N.A.L. score: 7-9) undergoing LPN was carried out from February 2012 to June 2016. During LPN, 58 patients received I-EUC and 72 patients received standard unclamping (SUC). All patients in I-EUC group were used in the "2+1" method: the inner renal wound and outer layers renal wound margin were sutured with renal artery clamping, and the outer layer was sutured and reinforced with renal artery unclamping. The baseline characteristics and perioperative data were compared between the two groups.

Results: Laparoscopic partial nephrectomy was successfully carried out in all cases. There was no significant difference in the sex allocation, age, body mass index, American Society of Anesthesiologists score, tumour size, R.E.N.A.L. score, and follow-up time between the two groups. There was also no significant difference in the estimated blood loss (94.3 vs 86.3 mL, P= 0.143), operative time (108.8 vs 105.3 min, P= 0.464), number of complications (1 vs 5, P= 0.322), and length of hospital stay (7.0 vs 7.5 days, P= 0.076)

between the two groups. Nonetheless, the WIT was significantly shorter in the I-EUC group than in the SUC group (17.1 vs 22.6 min, P <0.001). Incidence of postoperative complications, such as leakage of urine and hematuria, was significantly lower in the I-EUC group than that in the SUC group. Postoperative renal function recovery significantly favoured to I-EUC group compared with the SUC group.

Conclusion: I-EUC is a safe and effective method for moderately complex RCC during LPN owing to clinical benefits of reduced WIT, reduced surgical complications and improved postoperative renal function recovery.

UP-257

Application of 3D-Printing Technique Combined with Ring Suture Technique for Hilar Tumor in Laparoscopic Nephron-Sparing Surgery

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Introduction and Objective: To explore the application of 3D-printing technique combined with Ring Suture Technique for hilar tumor in laparoscopic nephron-sparing surgery and evaluate the value of clinical efficacy and prognosis.

Materials and Methods: 10 patients with intrarenal tumors underwent LPN from May 2015 to December 2017 in our hospital. Among them were 7 males and 3 females, aged 54.2 (42 - 75) years, the tumor diameter of 3.2 (2.1 - 4.3) cm. The 3D models based on computed tomography reconstruction of renal tumor printed by FormlabForm1+ was made for surgical planning and preoperative conversation with patients. All surgical procedures used Ring Suture Technique. Retrospective analysis clinical data such as blood loss, the warm ischemia time, postoperative pathology and surgical margin, etc.

Results: Laparoscopic partial nephrectomy was successfully carried out in all cases: the average operation time was 120.0 (80.0-160.0) min with the ischemia time 20.6 (15.2-26.5) min; Mean intraoperative blood loss was 105.0 (50.0-150.0) mL, and the average postoperative hospital 7 (5-10) days. There were no blood transfusion, urinary leakage, wound infection, high fever or other postoperative complications, the surgical margins were negative. Postoperative pathology confirmed 8 patients with clear renal cell carcinoma, 2 patients with papillary renal cell carcinoma. Patients were followed up for 19.8 (12-34) months, no metastasis and recurrence or continuous deterioration of renal function was found.

Conclusion: Hilar renal tumors before surgery underwent 3D printing model can clarify the tumor locations and nearby relationships, thus reducing the risk of surgery. Meanwhile, using 3D printing model can improve patients' cognition, simplify preoperative conversation. Further Ring Suture Technique can reduce the risk of damaging blood vessels, and then reduce intraoperative and postoperative the risk of bleeding.

UP-258

Application of Early Sequential Unclamping Method in Laparoscopic Partial Nephrectomy for Patients with T1b Renal Tumor

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Introduction and Objective: To analyze the value of early sequential unclamping method in laparoscopic partial nephrectomy.

Materials and Methods: From April 2017 to October 2017, a total of 8 cases of renal tumor patients by early sequential unclamping method of laparoscopic nephrectomy (LPN) were reviewed. The early sequential unclamping method was used as follow: The branches of renal artery and the main renal artery were sequentially blocked. After removal of the tumor, the first layer of bare kidney wound blood vessels and collection system were sutured and repaired. Then released the main renal artery occlusion clamp, restored most of the blood supply to the kidney, but kept the tumor-specific segmental renal artery blocked. Continuous suture of the kidney created a rough combination of the renal wound. After second layers of suture completed, unclamped the segmental renal artery and sutured the renal wound again, made the third layers of suture intersecting with the second seam suture to strengthen the hemostatic effect.

Results: All the 8 patients were performed LPN with early sequential unclamping method successfully. The average operative time was 132.5 (90 - 180) min, the intraoperative blood loss was 142.5 (100 - 200) mL, the completely warm ischemia time was 15.5 (12.0 - 20.0) min, and no blood transfusion was performed intraoperatively and postoperatively. Postoperative complications such as urinary leakage, incision infection and fever were not found. The time of postoperative hospitalization was 4.8 (4-6) days. At 1 month after operation, the GFR level of one side kidney with tumor was 52.3 (43.2 - 59.6) mL/min.

Conclusion: Early sequential unclamping method could shorten the warm ischemia time and reduce the risk of bleeding during the operation.

UP-259

Preoperative Neutrophil-to-Lymphocyte Ratio as an Independent Prognosticator of Recurrence in Hemodialysis Patients with Nonmetastatic Renal Cell Carcinoma

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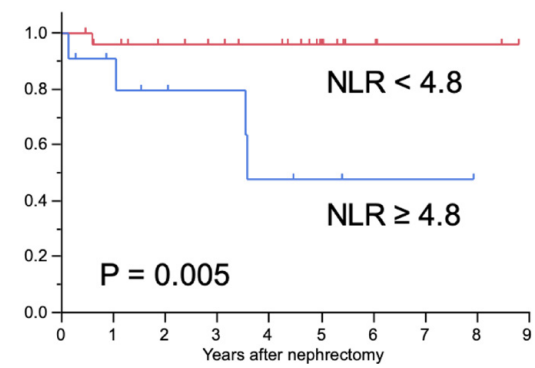
Introduction and Objective: No blood-based prognosticator has been established in hemodialysis patients with renal cell carcinoma. The aim of this study is to evaluate the prognostic value of neutrophil-to-lymphocyte ratio (NLR) in these patients.

Materials and Methods: Preoperative levels of blood-based markers: NLR, hemoglobin, platelet count, and serum calcium were measured in 41 hemodialysis patients with nonmetastatic renal cell carcinoma, who underwent nephrectomy between January 2010 and March 2015. NLR was defined as the ratio of absolute neutrophil count to absolute lymphocyte count. Cut-off values of the preoperative markers were determined by receiver operating characteristic analyses. Prognostic values of the preoperative markers in predicting recurrence were evaluated using multivariate analysis with a Cox proportional hazards model. Recurrence-free survival time (RFS) was calculated from the date of nephrectomy to the date of radiological detection of recurrence using the Kaplan-Meier method with log-rank test.

Results: The median (range) follow-up period after nephrectomy was 55 (3-106) months. The median (range) values of NLR, hemoglobin, platelet count, and serum calcium were 3.4 (1.4-11.3), 11.0 (8.9-16.6) g/dL, 187 (72-352) x10^3/μL, and 9.9 (7.5-11.3) mg/dL, respectively. Prognostic values of NLR (cut-off 4.8), hemoglobin (cut-off 11.0 g/dL), platelet count (cut-off 228 x10^3/μL), serum calcium (cut-off 9.4 mg/dL) were evaluated dichotomously. Multivariate analysis revealed that NLR was the sole independent prognosticator for recurrence among the preoperative blood-based markers (hazard ratio, 15.7; 95% CI, 1.5 to 167.3; P= 0.023). Kaplan-Meier estimates demonstrated that the higher NLR was significantly associated with shorter RFS (P= 0.005).

Conclusion: The current results indicate that preoperative NLR level can be a prognosticator for dialysis patients with nonmetastatic renal cell carcinoma. Fur-

UP.259, Figure 1. Recurrence-free survival curves according to NLR levels.



ther prospective analyses with larger cohorts will be needed to confirm our results.

UP-260

The Number of Metabolic Features as a Significant Prognostic Factor in Patients with Metastatic Renal Cell Carcinoma

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Introduction and Objective: The effect of metabolic characteristics on the prognosis of patients with metastatic renal cell carcinoma remains controversial. We investigated the associations between metabolic features of each individual and disease prognosis in patients with metastatic renal cell carcinoma.

Materials and Methods: Data of 1,584 patients with metastatic renal cell carcinoma from a multi-institutional database were retrospectively analyzed. The entire cohort was stratified into three subgroups according to how many patients had abnormal metabolic features (hypertension, diabetes mellitus, and low body mass index). The Kaplan-Meier and Cox proportional analyses were performed to investigate the associations between abnormal metabolic features and disease prognosis.

Results: There were 465 subjects without any metabolic features, 995 with one or two, and 124 with three. When the survival outcomes were compared according to the number of metabolic features, patients with higher numbers of metabolic features had significantly shorter overall and cancer-specific survival than those with fewer metabolic features (all p values < 0.05). The multivariate Cox analysis showed that the number of metabolic features was an independent predictor for shorter cancer-specific and overall survival (all p values < 0.05). When performing subgroup analysis according to the cellular type, significant results were only obtained among the clear cell subtype subgroup, with the association not being significant in the non-clear cell subtype cohort.

Conclusion: Patients with more metabolic features had significantly worse survival outcomes than those with fewer metabolic features. However, the association was only statistically significant in patients with clear cell-type metastatic renal cell carcinoma.

UP-261

Identification of Long Non-Coding RNA APOC1P1 as an Oncogene in Clear Cell Renal Cell Carcinoma

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Introduction and Objective: Increasing evidence shows that long non-coding RNAs (LncRNAs) play an important role in cancer development. This study aimed to explore the expression and function of LncRNA APOC1P1 in clear cell renal cell carcinoma (ccRCC).

Materials and Methods: LncRNA APOC1P1 expression in 283 ccRCC tissues and 30 normal kidney tissues was detected by quantitative real-time RT-PCR, and its prognostic association with ccRCC was assessed by the Kaplan–Meier method and Cox proportional hazards model. Cell proliferation, apoptosis, migration, and invasion were determined in RCC cells with downregulation of LncRNA APOC1P1 expression.

Results: LncRNA APOC1P1 expression was increased in ccRCC tissues compared with normal kidney tissues (P< 0.001). Its expression was higher in the Fuhrman grade III and IV group than in the Fuhrman grade I and II group (P < 0.05), and significantly upregulated in the advanced stage group (P < 0.05). Kaplan–Meier analyses revealed that elevated LncRNA APOC1P1 expression was significantly associated with poor overall survival (P < 0.05) but may not be an independent prognostic factor. Knockdown of LncRNA APOC1P1 inhibited cell proliferation, induced apoptosis, and arrested cells at G1/S phase (P < 0.05). Silencing of LncRNA APOC1P1 also led to decreased cell migration and invasion (P < 0.05).

Conclusion: LncRNA APOC1P1 acts as an oncogene, plays an important role in ccRCC development, and can be considered a prognostic biomarker and therapeutic target in ccRCC patients.

UP-262

Prospective Evaluation of Bilateral Same Session Ureteroscopy, is it a Valid Option?

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Introduction and Objective: Saudi Arabia has one of the highest upper urinary tract stone rates all over the world. Bilateral renal stone management is controversial; we sought whether bilateral same session FURS was properly evaluated. Thereby, it could be adapted as a practice that potentially reduces costs, hospital stay and the need for second intervention.

Materials and Methods: This was a prospective study, with patients from January 2015 – May 2017; we collected data of patients with bilateral renal stones who went for same session FURS, and these data were reviewed and analyzed. Patients' characteristics as well as operative data were recorded. Outcomes were determined at 6 weeks on renal ultrasound or Non-contrast CT scan (NCCT). Success rate was defined as stone free (SF) or remaining fragments (RF) less than 3 mm.

Results: Thirty-one patients were included in the study. Twenty-five (80.6%) were males, mean stone burden was 11.79 ± 4.79. Mean operative time and hospital stay was 46.53 mins and 17.87 hours respectively. Thirty patients (96.7%) were done under general anesthesia, 2 (3.2%) patients had a UTI post and overall stone free rate was 56 (90.3%) of all renal units.

Conclusion: Bilateral FURS is a safe and highly effective practice for bilateral renal stones patients with good clearance and minor complications and morbidities. However, high stone volume centers should have the upper hand to practice such a technique as well as randomized study should be conducted.

UP-263

Ureteroscopic Stone Lithotripsy: Complications

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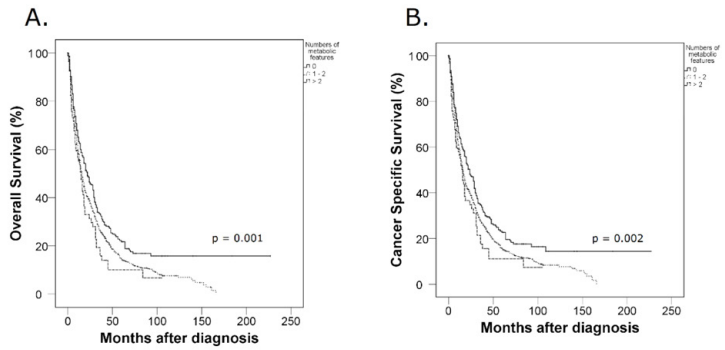
Introduction and Objective: Ureteral stone disease is a common affliction of human beings worldwide. Ureteroscopic stone lithotripsy is the most efficacious minimally invasive treatment option. The aim of this study is to evaluate ureteroscopic stone lithotripsy complications and to compare between the stone-related factors associated with the occurrence of these complications.

Materials and Methods: A prospective cross-section study of 350 patients (200 males and 150 females)

UP.260, Figure 1.



UP.262, Table 2: Frequency table.

	N(%)
Pre stenting	25(40.3)
Stent post op	59(95.2)
GA	60(96.8)
Spinal anasthesia	2(3.2)
UTI post op	2(3.2)
Stone history	22(35.5)
Stone free rate (per renal unit)	56(90.3)
Renal anomalies (polycystic kidney)	2(3.2)
Males	25(80.6)
Females	6(19.4)

who underwent a (366) ureteroscopic procedures for their ureteral stones in Al Basra Teaching Hospital and also in communication with the other centers in Iraq extending from January, 2016 to August, 2018. Full medical and surgical history, routine laboratory investigations and imaging study were done preoperatively. After taking informed consent, preoperative antibiotic was given, procedure done under general or regional anesthesia using (8 or 9.5) ureteroscopy and pneumatic or laser lithotripsy, and DJ stent inserted in most of the patients. Stone free status was reached when all the stones were destructed and extracted while gravels and fragments less than 2 mm left for spontaneous passage. The patient was discharged home after 24 hours unless complications occurred.

Results: Stone free status was achieved in 85% of patients. Regarding intraoperative complications: perforation occurred in 10.1%, of them 8.6% were minor and 1.5% were major, mucosal abrasions occurred in 10%, false passage in 2.25%, stone retropulsion in 7%, and intraoperative bleeding in 1.8%. Postoperative complication include fever (10 %), and ureteral obstruction (6 %).

Conclusion: Ureteroscopy has gained wide acceptance worldwide for managing ureteral stones with low rate of intra and postoperative complications. Most of the complications are minor and can be managed conservatively. Although most of the patients required stent insertion, still some of them were left without in certain situations.

UP-264

A Real-Life Study of the Efficacy of Intravesical Botulinum Toxin Type A (Bont/A) Injection Therapy in Neurological Patients

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Introduction and Objective: Prospective data on the efficacy of the approved dose of 200 U of onabotulinumtoxinA (BOTOX®) in patients with drug-resistant neurogenic incontinence are relatively limited. We present real-life data on the efficacy of intravesical BoNT/A in patients with refractory neurogenic incontinence.

Materials and Methods: This is a prospective observational study of patients with drug-resistant neurogenic incontinence who received intravesical treatment with 200U of BOTOX in the specialized Neuro-urology outpatient Clinic of a public teaching hospital. Patients were subjected to urodynamic investigation before and 6 and 24 weeks after treatment, while recording the presence of urinary tract infection (UTI) before each treatment. The primary outcome was the patient-reported complete cure of incontinence. Secondary outcomes were the post-treatment changes in recorded urodynamic parameters and the associations between pre-treatment UTIs and response to treatment.

Results: Forty-nine (49) patients (28 males and 21 females) received at least one BOTOX injection, 15 received a 2nd treatment, 10 a 3rd, 6 had a 4th, and one had a 5th and 6th session, respectively. Median patient age was 47.04 years (SD: 14.16); 18 (36.7%) suffered from spinal cord injury, 12 (24.54%) from multiple sclerosis and the rest from other neurological conditions. After the first treatment, incontinence was cured in 73.7% of the patients. Incontinence cure rates were sustained after the 2nd, 3rd and 4th injections (66%, 60% and 66%, respectively). There was no significant correlation between gender or neurological background and the persistence of incontinence. The median relapse time after first treatment was 6 months (IQR = 5) and 10.5 months after the second ($p = 0.31$). An increase in maximum cystometric capacity (MCC) was noted after each treatment compared to baseline ($p < 0.001$), while a reduction in Pdetmax only after the first session ($p < 0.05$). Changes in MCC, filling and voiding Pdetmax were no different between the sessions. Fourteen patients (28.6%) were diagnosed with a urinary tract infection (UTI) before the first treatment. The presence of UTI was not associated with post-BOTOX persistence of incontinence and did not affect relapse times or the changes in MCC and Pdetmax after initial treatment.

Conclusion: In this mixed neurogenic etiology cohort, intravesical injection of 200U BOTOX achieved complete cure of drug-resistant incontinence in a significant proportion of patients, with sustained clinical and urodynamic improvements after up to 4 injections. The presence of pre-treatment UTI was not found to affect treatment outcomes, at least after the 1st injection.

UP-265

Comparison of Robot-Assisted and Open Ureteric Reimplantation for Iatrogenic Ureteric Stricture

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Introduction and Objective: In patients with iatrogenic ureteric strictures due to pelvic surgeries and endoscopic procedures, the use of minimally access approach could improve the outcomes. However, pure laparoscopic surgery for ureteric reconstruction is still technically demanding and having a steep learning curve. The employment of robot-assisted approach could be the solution of this complicated condition. The aim of this study is to compare the outcomes of robot-assisted vs open ureteric reimplantation with psoas hitch for distal ureteric stricture.

Materials and Methods: Between 2013 and 2018, 21 consecutive patients with unilateral iatrogenic ureteric strictures underwent ureteric reimplantation with psoas hitch in a single center were retrospectively reviewed. In the middle of the study period, i.e. 2016, there was a shift from open to robot-assisted approach. Thus, 10 robot-assisted and 11 open ureteric reimplantation were evaluated.

Results: There were no demographic differences between robot-assisted and open groups in terms of age (51 vs 51, p=0.48), Charlson Comorbidity Index (score ≥ 3: 30% vs 36%, p=0.76), and the mean number of prior abdominal surgeries (1.30 vs 1.27, p=0.50). For the perioperative outcomes, the mean operative times were the same (robot-assisted: 168 minutes vs open: 169 minutes, p=0.48). Robot-assisted group was associated with less estimated blood loss (10ml vs 154ml, p=0.002) and shorter mean postoperative hospital stay (6.9 days vs 11.9 days, p=0.023). The complications (Clavien-Dindo classification III-V) were similar between the two groups, 1 in robot-assisted group (ureteric stent migration) and 2 in open group (pelvic collection and sepsis). The mean Follow-up period of robot-assisted and open groups were 17 and 26 months respectively, no stricture recurrence observed in robot-assisted group, while one recurrence in open group. The estimated cost of disposables of the robot system was USD $2390 per case, and it was well compensated by the cost saved due to the average 5 days' reduction in hospital stay in the robot-assisted cohort (USD $3182 per patient).

Conclusion: Robot-assisted ureteric reimplantation and psoas hitch has the benefit of less blood loss and shorter hospital stay, while it does not cause significant extra financial burden to the health care system.

UP-266

Changes of Voiding Functions in the Patients with Robot-Assisted Bladder Diverticulectomy or Partial Cystectomy

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Introduction and Objective: Bladder diverticula in adults might be incidentally discovered with low urinary tract symptoms (LUTS), hematuria, bladder outlet obstruction (BOO), or urinary tract infection. Comparing various management options, robot-assisted bladder diverticulectomy presented the greatest magnification, least invasive, and most efficient technique since 2006. Similarly, robot-assisted partial cystectomy was indicated for malignancy (ex: urothelial carcinoma, colon/ovary cancer with bladder invasion) or non-malignancy conditions. Voiding dysfunction can be found during the perioperative period in both procedures. Therefore, we aimed to review the urinary function of patients with these applications.

Materials and Methods: In this retrospective study, all patients who underwent robot-assisted transperitoneal bladder diverticulectomy or partial cystectomy were enrolled. The patients with upper tract urothelial cancer and had bladder cuff excision were excluded. Complete data, including initial symptoms, imaging studies, urodynamic studies, surgical outcome, and follow-up duration, were obtained and analyzed using SPSS.

Results: From Oct. 2011 to Feb. 2019, 33 patients underwent diverticulectomy or partial cystectomy; 4 were for the indication of LUTS (2 men and 2 women, with ages of 70.50 ± 15.26 years). All patients underwent CT or sonography for evaluation. The number of the diverticulum was 1.6 ± 0.89, which showed 4.68 ± 2.65 cm in diameter (range 2.40 – 9.35). All patients had recurrent urinary tract infections, but only 1 had Foley before the operation. Twenty-nine patients had partial cystectomy (7 for urothelial carcinoma, 6 for colon cancer, 6 for gynecological cancer, 4 for sarcoma, 5 for endometriosis) with ages of 56.89 ± 14.49 years. Post-voiding residual urine was 20.64 ± 24.12mL post-operatively (range 0 to 70.74). Four had urge incontinence but no post-operative urine reten-

tion were noticed. The follow-up duration was 35.99 ± 23.50 months.

Conclusion: According to the mechanism of bladder emptying, reducing the volume of the diverticulum may preserve the detrusor contraction. Conversely, detrusor contractility may be impaired after partial cystectomy, and even robotic techniques shorten recovery time. From our experience, robot-assisted bladder diverticulectomy or partial cystectomy is a promising surgical treatment. The impaction on voiding function was not illegible but could be minimized.

UP-267

Recanalization of Pelvic Ureter in Pelvic Neoplastic Obstruction: Efficiency of Our Technique

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Introduction and Objective: Obstruction of the lower ureter by pelvic cancer requires a palliative treatment. Percutaneous derivation is often performed in emergency context. If obstruction is limited to the peri-meatic area; Percutaneous antegrade recanalization can be performed and may require a resection of the ureteral orifice. We evaluate the results of percutaneous antegrade recanalization associated with possible bladder resection in the treatment of pelvic neoplastic ureteral stenosis.

Materials and Methods: A retrospective, descriptive study from September 2015 to January 2019; included all patients with complicated pelvic tumor with ureteric-hydronéphrosis; patients with advanced bladder tumor were excluded. Under general anesthesia, in Valdivia modified position; A guide-wire is passed via the nephrostomy, and retrieved from the bladder to the urethral meat, followed by descent of ureteral-catheter under X-ray control; We might need a resection over the presumed uretric-meat as it will help open the lower extremity of the ureter, so it can be easily catheterized with a double J.

Results: In our study 58 patients, including 23 men and 35 women, with an average age of 65 years (52-78 years). The Karnofsky index was ?80% in 92% and between 80-60% in 8% of patients. The average extent of ureteral stenosis was 2.25 cm (1-3.5 cm). The aetiologies of obstruction were dominated by cervix cancer 60.34%, followed by prostate cancer 39.6%. The recanalization is carried out 40% on the left, 60% on the right, bilaterally in 30% of the cases. The improvement of renal function in 82%, however 18% progressed to chronicity. The disappearance of the dilatation was present in 85%, whereas 15% of the cases presented a residual dilation without alteration of the renal function. The resection of ureteral meat in 75% of the cases. A few rare complications were noted: pyelonephritis (7%), isolated lumbago (10%), and bladder irritative syndrome (13%). The average survival of these patients depended essentially on the pelvic cancer responsible for the obstruction; ranging from 11 months to 45 months.

Conclusion: Percutaneous repermeabilization associated with bladder resection is an attractive, reproducible and well-tolerated technique. Very few complications are reported. It provides a good quality of life to patients.

UP-268

Bilateral Adrenalectomy for Refractory Hypercortisolism

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Introduction and Objective: Cushing's disease refractory to conventional medical and surgical treatment has an impact on patient's mortality, morbidity as well as quality of life. We aim to evaluate the role of bilateral adrenalectomy as a treatment for refractory Cushing's disease/syndrome and its safety, efficacy and surgical outcomes.

Materials and Methods: We reviewed 32 cases of laparoscopic adrenalectomies from Jan 2016 to Jan 2019, of which 3 cases are bilateral adrenalectomies. Surgical outcomes and subsequent follow up results are evaluated. A literature review was conducted to compare outcomes with international studies.

Results: All 3 patients were female of the ages of 39, 42 and 70. 2 of which have persistent CD after transsphenoidal operation and 1 has ectopic Cushing's syndrome. All 3 have undergone laparoscopic bilateral adrenalectomies via transperitoneal approach. Mean operative time is 374 minutes (SD 41.8), with a mean estimated blood loss of 200mL intraoperatively (SD 0). The mean length of stay is 21 days (SD 25.2, 5-50). None were converted to open. No intra-operative complications were noted. Out of the 3 patients, only 1 had post-operative complications more severe than Clavien Dindo I (Clavien Dindo IV). All patients have experienced symptomatic improvement post-operatively. No return to OT or re-admissions required.

Conclusion: Bilateral adrenalectomy is a safe and effective treatment for refractory Cushing's Disease/syndrome, especially in patients who have consequences of hypercortisolism. Success requires working closely with our Endocrinologist colleagues both pre- and post-operatively to ensure medical optimisation and an uncomplicated recovery. Various surgical approaches have been described, our case series has shown transperitoneal approach is safe and produces good surgical outcomes. Patient's quality of life and disease burden have improved post-operatively.

UP-269

3D Modelling as an Intraoperative Reference in Robotic Surgery: A Collision of Technologies

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Introduction and Objective: The Da Vinci surgical system has been adopted by urological surgeons due to its superior visualisation, greater degrees of motion, and precise movements. However, during complex procedures it may be necessary to disengage from the Surgeon Console in order to reference patient imaging. 3D reconstructions allow for the visualisation of complex anatomy with unprecedented ease. Combining the two technologies, we utilised the existing Da Vinci TilePro™ function with the aim of improving operative efficiency by providing a real-time, surgeon-controlled tool to aid in orientation of the displayed robotic surgical anatomical field.

Materials and Methods: Using a laptop and the current Da Vinci models, the TilePro™ input port is accessed at the back of the Surgeon's Console. The laptop is connected via an HDMI output to DVI input cable to the TilePro™ DVI input port. Manipulation of the 3D model is controlled by the surgeon via wireless mouse.

Results: The surgeon is able to manipulate the 3D model as an intraoperative reference without needing to disengage from the Surgeon Console. The models are used to orient structures at times of anatomical ambiguity and used to identify target sites during

UP.268, Table 1.

Age	Diagnosis	Op time (mins)	EBL (ml)	LOS (days)	Complications	If yes, Clavien Dindo	Conversion to open	Return to OT	Re-admission	Recurrence of symptoms
70	Cushing›s syndrome cx HTN, hypokalaemia, compression # 2› osteoporosis	420	200	50	Y	4	N	N	N	N
39	Cushing›s disease s/p transphenoid surgery and pituitary RT	365	200	5	N		N	N	N	N
42	Cushing›s disease s/p Craniotomy and transphenoidal excision s/p RT	338	200	8	Y	1	N	N	N	N

resection. Our qualitative survey revealed that the interface was easy to use; improved understanding of visualised anatomy and that ongoing use of the application would be preferred in future complex cases.

Conclusion: This innovative approach highlights 3D modelling as an invaluable adjunct in the preoperative planning of technically challenging cases in robotic surgery. This may be crucial to the success of oncological resection and functional outcomes of difficult operations. Given the ease this is achieved, the benefits of its use and the low cost of implementation, we suggest that all robotic surgeons consider this as part of standard operative setup.

UP-270

Fully Robotic Retroperitoneal Lymph Node Dissection- A Fusion of Technologies

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Introduction and Objective: Retroperitoneal lymph node dissection (RPLND) is technically challenging, with overall morbidity of 17–33%, and often involving the conversion of laparoscopic approaches to open. Robotic surgery lends itself to RPLND with its superior visualisation, greater degrees of motion, and precise movements. However, visualising complex relationships of tumour to aorta remains challenging. Our group has pioneered the fusion of robotic surgery and 3D modelling in preoperative planning and in intraoperative integration of these models to aid precision dissection. We describe the world's first fully robotic malignant RPLND aided by live intraoperative reference to a 3D model.

Materials and Methods: Using the open source medical image processing software 3D Slicer (version 4.10; Harvard, US, 2019), standard patient CT imaging was 3D reconstructed. The node and aorta to its bifurcation were further highlighted and superimposed on the 3D reconstruction. Using the Da Vinci (Intuitive Surgical, CA, USA) Xi model, the TilePro input port was accessed via HDMI output to DVI input cable. This workflow adds no additional costs to the standard robotic setup.

Results: Informed consent was obtained, and the patient positioned in modified lithotomy. Ureteric stents were inserted for better delineation. Four robotic ports and one assistant port were inserted. The robot was docked to the patient's left. Following adhesiolysis, small bowel loops were reflected superiorly. The parietal peritoneum over the right common iliac artery (CIA) was dissected up to the aortic bifurcation using the monopolar energy device. The left CIA and both ureters were identified and preserved. True to the 3D reconstruction, this revealed the malignant node at the bifurcation, which was sharply dissected, aided by live intraoperative referencing to the 3D reconstruction which could be manipulated live by wireless mouse through the Surgeon Console. This was particularly useful in establishing a plane between the node and anterior aortic wall where dense fibrosis was encountered. The specimen was removed in an endocatch. Operative time was 150 min and estimated blood loss <50 mL.

Conclusion: This innovative case highlights cutting-edge 3D modelling as an invaluable preoperative planning tool and intraoperative reference in technically challenging robotic RPLND.

UP-271

Practice of Percutaneous Nephrolithotripsy (PCNL) and Outcomes at the Philippine General Hospital (PGH)

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Introduction and Objective: There have been refinements on the technique of PCNL over the years, but the Philippine General Hospital has just recently acquired the equipment and materials for this complex procedure. The outcomes and practice of PCNL at a tertiary hospital was analyzed.

Materials and Methods: Medical records of 57 patients who were treated with PCNL from July to December 2018 were retrospectively scrutinized.

Results: Fifty-seven patients underwent percutaneous nephrolithotripsy in the Philippine General Hospital, with a mean age of 48 years (range 21-78 years). Stone burden significantly predicts length of operative time (mean 103 minutes), lithotripsy time (mean 638 seconds), nephoscopy time (mean 43 minutes), fluoroscopy time (mean 10 minutes) and major complications (sepsis and bleeding requiring blood transfusion) but no association was found with the amount of irrigation fluid utilized which ranged from 200 ml to 50 liters (mean of 6.61 liters). Complete stone clearance was achieved in 44/57 (77%) patients. Three patients (5.26%) succumb to urosepsis and one (1.75%) had delayed hematuria. The average length of hospital stay, and postoperative length of stay was 8.6 and 5.2 days, respectively. The morbidity rate was 5.3%, mortality rate was 0%, reoperation rate was 3.5%, and readmission rate was 8.8%.

Conclusion: As a tertiary hospital that caters to about 120 patients for PCNL per year, PGH can be a considered a high-volume center for this procedure. Stone clearance rate is acceptable which can be improved with time as residents achieve maximum learning curves with the techniques of the operation. Practice and outcomes need to be monitored to deliver the best quality of care tailored to the patient characteristics and stone demographics. The figures presented in this study may be quoted in counseling patients who will undergo PCNL.

UP-272

Ureteral Access Sheath - To Use or Not to Use? That is the Question

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Introduction and Objective: The ureteral access sheath (UAS) revolutionized the management of urinary pathology by providing quick access to the ureter and kidney. Several studies questioning the use of UAS against non UAS for intrarenal surgery (RIRS) demonstrates highly contradictory results and a debate rage on. The objective is to analyze the results after RIRS for kidney stones using single use flexible ureteroscope without UAS.

Materials and Methods: RIRS procedures were performed in 51 renal units and treated 65 kidney stones for period of 5 months (Oct 2018 - March 2019). All cases were done using PUSEN digital single use flexible ureteroscope – 270 degrees of deflection up and down, 3.6 Fr working channel, 9 Fr diameter of distal tip inserted over a 0.35-inch hydrophilic guidewire. The irrigation fluid was at 35-40 cm height and when needed irrigation with a 50-cc syringe at a low pressure were applied manually. Rhapsody Holmium laser with two long and short pulse modes with ingle use laser fibers were used in all patients. All procedures were started with energy 20 Hz, 05 J to test the stone at long pulse mode and modified during the procedure if needed. The treatment policy is always to dust the stone and do not use any basketing. In all patient we inserted a 5 Fr J stent for two to four weeks. We analyzed: patient's age and gender; size, number and location of the stone; preoperative CT measurement of HE; pre and postoperative urine culture, duration of surgery, hospital stay, complications including ureteral injuries, bleeding, fever, postoperative pain. Follow up was at month 1 and 3.

Results: In all 51 patients we were able to access the kidney without using UAS. The location of the stones was: 29 (57%) in renal pelvis, 18 (35%) in the lower pole and 4 (8%) in other calices. Combination of lower pole stone and a stone in the pelvis were found in 14 (27%) patients. Mean stone size was 17±9 cm, mean operative time 41±30 min, mean hospital stay 3±2 days. We did not encounter any ureteral injuries; hematuria was observed in 11(21%) of cases. Fever was documented in 13 (25%) patients and all of them were obstructed before the procedure. Bacteremia or sepsis were not observed. Stone free rate (SFR) defined as fragment less than 3 mm was achieved in 41 (81%) of the cases. A redo procedure was done in 5 (6%) of all cases.

Conclusion: There are controversies about UAS and in which cases is it more feasible to use traditional technique and in whom is not necessary to apply access sheath. Based on data from different studies, development in lasers and our limited experience we believe that urologists will move to dusting techniques and RIRS without UAS.

UP-273

Pure Single-Site Robot-Assisted Pyeloplasty with the da Vinci SP® System: Initial Experience

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Introduction and Objective: Laparoendoscopic single-site surgery (LESS) reduces the limited invasiveness of conventional laparoscopy, while providing superior cosmetic results. However, LESS remains a challenging surgical technique even in robotic surgery primarily due to the lack of triangulation and limited instrument movement. The da Vinci SP® system was recently introduced to overcome these limitations. We describe our initial experience with pure single-site robot-assisted pyeloplasty (RAP) for ureteropelvic junction obstruction (UPJO) using the SP system.

Materials and Methods: Three consecutive patients who were diagnosed with UPJO underwent RAP with the SP system from December 2018 to February 2019 at our institution. The surgical technique involved reproducing the steps of multi-port RAP. A 30-mm umbilical incision was made, and the GelPOINT was inserted. The multichannel robotic port and the assistant's port were placed through the GelSeal cap. In all patients, Anderson-Hynes dismembered pyeloplasty was performed. The ureteral double-J stent was inserted antegrade, and the drain was not placed.

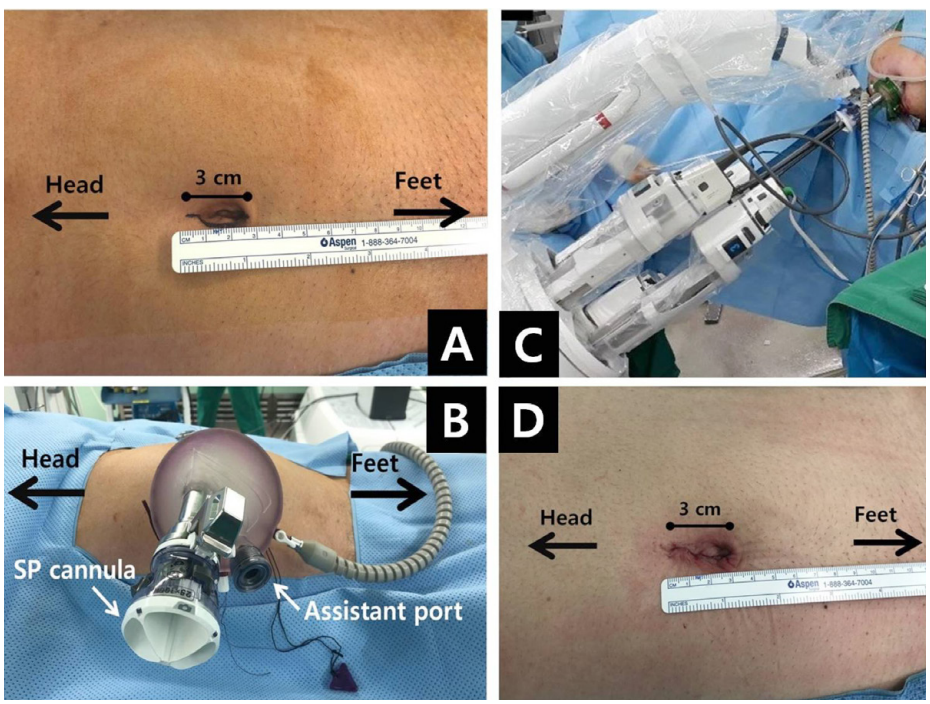
Results: The procedures were successfully completed using a pure single-site approach. There was no need for additional port placement or conversion to laparoscopic or open surgery. The total operative time was 139, 180, and 213 minutes for the three patients. No intraoperative complications occurred, and blood loss was minimal. The postoperative course of all patients was uneventful with no complications greater than Clavien-Dindo grade I surgical complications.

Conclusion: Pure single-site RAP using the da Vinci SP® system is feasible and safe. Further studies involving more patients and long-term outcomes are needed to confirm our results.

UP.273, Table 1. Patients' characteristics and perioperative data.

	Case No.1	Case No.2	Case No.3
Age	42	30	71
Sex	Male	Male	Female
Affected side	Left	Right	Left
BMI (kg/m^2)	22.49	27.08	18.82
Preoperative eGFR (ml/min/m^2)	91	108	43
Grade of UPJO	High	Low	High
Operative time (min)	139	180	213
Docking time (min)	5	10	10
Console time (min)	118	145	185
Suture time (min)	29	47	53
Intraoperative complications	No	No	No
Conversion to other surgery	No	No	No
Estimated blood loss (ml)	Minimal	Minimal	50
Discharge	POD 4	POD 3	POD 3
Postoperative eGFR (ml/min/m2)	105	113	81
Postoperative complications	No	No	No
Pain at discharge, NPIS score	2	2	3

UP.273, Figure 1. Perioperative figures. (**A**) Umbilical incision; (**B**) Placement of GelPORT; (**C**) Docking; (**D**) Cosmetic result.



UP-274

Long-Term Pain Comparison Between Open and Minimally Invasive Nephrectomies

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Introduction and Objective: There are many benefits to minimally invasive surgery (MIS), including less blood loss and faster recovery. On the other hand, long-term performance and symptoms have not been evaluated sufficiently. We present long-term symptom scores of patients who underwent MIS compared to open nephrectomy (Nx).

Materials and Methods: At every visit to the clinic, all kidney patients in our center fill out the Edmonton Symptom Assessment Scale (ESAS) questionnaire evaluating pain, tiredness, nausea depression, anxiety, drowsiness, appetite, well-being, and shortness of breath using a scale 0-10, 0 being the absence of a symptom and 10 being the worst level of it. We used our Institutional Databases to compare this information between patients who underwent open and MIS Nx, considering each of the ESAS domains.

Results: We included 483 patients (406 open, 77 MIS) who underwent Nx in our center between 2007 and 2017. Mean age at Nx was 55.6 (SD 12.4) and 54.8 (SD 13) for open and MIS, respectively. Mean age at last questionnaire was 59.8 (SD 12.6) and 58.5 (SD 13.7), with no statistically significant difference (NS). Most patients were male 63.1% vs. 61% (NS), and 53.7% vs. 89.6% were right sided respectively ($p < 0.001$). A total of, 47% vs. 54.5% of the surgeries were radical Nx ($p = 0.263$), for open and MIS respectively. After surgery, 61.1% vs. 74% were T1 ($p = 0.04$), 6.5% had N+ vs. 1.4% p= 0.096, M+ 3.1% vs. 2.7% (p= 0.840). During follow up, 18.2% vs. 13% (p= 0.266) received systemic therapy for metastatic disease in each group, and 30.5% vs. 26% (p= 0.441) had evidence of disease (open vs. MIS). On multivariable analysis (including gender, TNM, histology, age at Nx, side of Nx, surgical modality and type of surgery [radical or partial]), the only factor associated with higher pain scores was surgical modality (p= 0.014), favouring MIS.

Conclusion: Almost 4 years following surgery, MIS was associated with significantly lower pain scores when compared to open surgery. This should be taken into consideration when deciding what surgical modality is appropriate for the patient.

UP-275

The Outcome of Ultrasound-Guided Percutaneous Nephrolithotomy in the Treatment of Horseshoe Kidney with Calculi: A Decade's Experience

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Introduction and Objective: To evaluate the safety and efficacy of percutaneous nephrolithotomy (PCNL) in the treatment of horseshoe kidney with calculi.

Materials and Methods: Clinical data of 43 patients (50 kidney units) with horseshoe kidney stones performed PCNL from January 2007 to January 2017 were retrospectively analyzed. There were 33 males and 10 females, the mean age was 41.1 years (range, 21-72 years), 20 cases on the left side, 16 cases on the right side, 7 cases on both sides. The group included single stone in 4 kidney units, multiple stones in 39 kidney units, and staghorn stones in 7 kidney units. The mean maximum stone size was 32.8 mm (Range, 10-70 mm). Fifteen patients received extracorporeal shock wave lithotripsy (ESWL) before surgery. The procedure of puncture and dilation were guided by ultrasound solely.

Results: The mean operative time was 80.7 min (range, 35-210 min). The mean nephrotomy tube removed was 3.7 days. The postoperative hospital stay was 7.2 days. The postoperative hemoglobin concentration decreased in 34 patients, and the mean hemoglobin decrease was 12.0 g/L (Range, 0.7-26.8 g/L). The stone-free rate at hospital discharge is 80% (40/50). Postoperative complications occurred in 3 patients including fever (>38.5°C) in 3 (7.0%) cases. There were no patients who received blood transfusion in our study. No sepsis, kidney loss, and adjacent organ injury were observed.

Conclusion: Despite the abnormal anatomy of the kidney, PCNL also has an acceptable stone-free rate and complications in the treatment of horseshoe kidney stones.

UP.275, Table 1. The preoperative characteristics of the HK patients.

Parameter	N(%)	Mean(Range)
Gender (male/female)	33(76.7)/10(23.3)	
Age, y		41.1(21-72)
BMI(kg/m2)		25.3(16.0-34.3)
Side (left/right)	27(54.0)/23(46.0)	
Stone number		
1	4(8.0)	
>1(multiple/staghorn)	46(92.0)	
Location(side)		
Upper ureteral	1(2.0)	
Pelvis	11(22.0)	
Low pole	7(14.0)	
Multiple calyx	31(62.0)	
Stone type		
Single	4(8.0)	
Multiple	39(78.0)	
Staghorn	7(14.0)	
Maximum stone size (mm)		32.8(10-70)
Hydronephrosis	37(74.0)	

BMI= Body Mass Index

UP.275, Table 2. The postoperative outcome of percutaneous nephrolithotomy.

Parameter	N (%)	Mean (Range)
Operative time (min)		80.7 (35 - 210)
Postoperative hemoglobin drop (g/L)		12.0 (0.7 - 26.8)
Punctured calyx (renal units)		
Upper pole	19 (38.0)	
Middle pole	29 (58.0)	
Lower pole	12 (24.0)	
Access (renal units)		
Intercostal/Subcostal	7 (14.0)/43 (86.0)	
Hospital stay (d)		7.2 (3-25)
Nephrotomy tube removed (d)		3.7 (1-13)
Complications		
Fever(>38.5°C)	3 (7.0)	
SFR at hospital discharge	40/50 (80.0)	

SFR= Stone free rate

UP-276

Comparison of Efficacy of Extracorporeal Shock Wave Lithotripsy for Treatment of Ureteric Stones in Children, Adults and Old Age Group: A Single Centre Study

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Introduction and Objective: To retrospectively evaluate the effectiveness of extracorporeal shock wave lithotripsy (ESWL) for treating ureteric stones and compares the results between children, adults and elderly age group.

Materials and Methods: From January 2015 to July 2018, ESWL was performed for treatment of ureteric stones in 46 children (age less than 17 years), 77 adults (age more than 17 years and less than 60 years) and 68 elder patients (age above 60 years). We used Modulith SL X lithotripter 3rd generation Storz medical equipment (Electromagnetic) for ESWL. The stone free rates, number of ESWL sessions required, complication rates and auxiliary procedures used were evaluated in a comparative manner.

Results: Mean Stone size was 0.91 ± 0.20 cm in pediatric age group, 1.09 ± 0.39 cm in adults and 1.18 ± 0.39 cm in elderly age group. Post ESWL stone free rate was 89% for children, 89.6% for the adults and 64.7% in elderly age group respectively (p value=0.04). In children group second session was required in 3 (6.52%) patients, in adults second session was done in 10 (13.3%) patients and 3 sessions in 4 patients, while in elderly age group second session was done in 12 (36%) and third session was required in 6 (15%) patients. Hematuria was seen in 4 (8.69%) children, 5 (6.49%) adults and 6(8.8%) elderly patients. Stein Strasse in 0/46 children, 1 (1.3%) adult and 1 (1.45%) elderly patients. Fever was seen in 2/46 (4.34%) children, 1 (1.3%) adult and 0% elder age group. Post procedure severe Flank pain was seen in 4/46 (8.69%) children, 2 (2.6%) adults and 4 (5.8%) elderly patients.

Conclusion: The results of ESWL for ureteric stones in adults remain similar to that of children. While stone free rate of elderly age group was inferior to that of the adult age group. Complication rates were almost similar in each of the children, adult and elderly age ESWL groups in our study.

UP-277

Adopting the Novel Concept for Reporting Outcomes of a Successful Treatment in Ureteroscopy and RIRS for Stones: The SToNE-FECTA. A Single Center Experience.

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Introduction and Objective: To adopt a new method for reporting outcomes during URS/RIRS for stones, the SToNE-FECTA (Successful Treatment in Endourology) concept at our center. It's said in recent literature that endourological procedures outcomes should be seen as composite in terms of stone free status and the absence or presence of minor/major complications. It's helpful in providing patients with counselling regarding the composite outcomes.

Materials and Methods: From April 2018 till September 2018, total of 210 consecutive patients underwent URS/RIRS by 2 well experienced endourologists at hospital. These patients were prospectively analyzed. Those patients who achieved simultaneously a stone free rate in single procedure, absence of urinary infections and having no urological complications were considered to have achieved the SToNE-FECTA. Continuous and categorical variables were showed as mean, standard deviation (SD) and frequencies, percentages (%) respectively. For the statistical univariate analysis Kruskal-Wallis, chi-squared and Fisher exact tests, were used to compare continuous and categorical variables as needed. A multivariable logistic regression model was prepared to assess independent factors responsible for achieving SToNE-FECTA. A p value < 0.05 was considered statistically significant. All statistical analyses were performed using SPSS v.16.0 (SPSS Inc, Chicago, IL, USA).

Results: Single-procedure stone free rate was seen in 186/210 (89%), absence of UTI in 206/210 (98.10%), and no procedural urological complications rates in 198/210 (94.3%) at a median follow-up of 2 months. SToNE-FECTA rate at 2 months was 87.4%. On multivariable logistic regression analysis, Stone length and width, prior urinary tract infection and impacted nature of stones were independently related with the SToNE-FECTA.

Conclusion: We concluded that adopting SToNE-FECTA outcomes helps manage patients' and surgeon expectations post URS/RIRS procedures. This new predictive model may be useful tool for a composite counseling of patients and can be considered for the improvement of standardized quality assessment during the residents training as well.

UP-278

Interobserver Variability Among Senior and Fresh Graduates Surgeons in Assessment of Guy's Stone Score and S.T.O.N.E. Nephrolithometric Score: A Prospective Evaluation

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Introduction and Objective: Different scoring systems have been proposed recently to grade and predict the operative difficulty, stone free rates and complications. There have been no studies in the past regarding interobserver variability between junior surgeons and senior surgeons. This may lead to poor prediction of stone free rates and complications by junior surgeons while risk stratifying during surgical planning and counselling of their patients. The present study aimed at assessing the interobserver variability among the senior and fresh graduate surgeons in a developing country; performing the PCNL and compared the scoring done by both groups of surgeons for the Guy's stone score and S.T.O.N.E. nephrolithometry score.

Materials and Methods: Patients who underwent PCNL between January 2016 and October 2017 were prospectively enrolled. Preoperative computed tomography was done in all these patients. The Guy's stone score and S.T.O.N.E. nephrolithometry score were calculated by 6 senior surgeons (more than 5 years endourology experience independently) and 7 junior surgeons (less than one year of endourology experience independently). All patients underwent either standard adult size PCNL by the senior consultants or junior consultants. Consistency among the scores was assessed using Cronbach's alpha. Each score was compared between the two groups for the stone free rates achieved and the complications incurred (operatively and postoperatively). Independent t-test was used for continuous variables and chi-square test was used to compare the categorical variables between the two groups value less than 0.05 was considered statistically significant.

Results: The mean Guy's grade was 1.5 and 1.4, while the mean S.T.O.N.E. score was 8.1 and 7.9 in the two groups respectively (P=0.06). The mean operative time was 140 ±64 minutes and 155 minutes while hospital stay was 2.3 and 1.9 days in senior and junior surgeons' group respectively (P=0.07). Mean fluoroscopy time was 6.2 ± 1.2 minutes and 7.4 minutes (P=0.08). The mean Guys score was 1.3 and 1.2 in the stone free patients in the two surgeons operated groups (p=0.07). The S.T.O.N.E. score was 7.8 and 7.6 in the two surgeon groups (P=0.06) for stone free patients. Both scores were strongly correlated to operative time (p value 0.008 for Guys and 0.013 for STONE score) in the senior surgeons' group. Similarly, these scores well predicted the operative time in the junior surgeons' group as well (P=0.004). Ancillary procedures were needed more in the junior surgeons' group when compared the Higher Guys and STONE score patients' subgroups of the patients. The re-admission rate was higher in the junior consultant group for higher Guys and STONE scores (P=0.03). Hospital stay was longer in junior surgeons' group in higher Guys and STONE scores (P=0.04). Need for blood transfusion was seen more in junior surgeons' group (p=0.04).

Conclusion: More complications were seen in higher Guys and STONE scores in junior group. Both of the surgeon groups had good interobserver reproducibility of scores accurately. More studies are needed on how a fresh graduate improves surgical outcomes with time according to these scoring systems.

UP-279

Is it Feasible to Do TURP in Prostate Size More Than 100 Grams? Comparison of Outcomes of TURP in Small Versus Large Prostates

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Introduction and Objective: Benign prostatic hyperplasia is a condition in elderly men in which the prostate gland is enlarged. Trans Urethral Resection of prostate (TURP) has become a gold standard for treating bladder outlet obstruction due to prostate enlargement. In recent guidelines, it has been stressed that prostate should be preferred in prostate size less than 75 mL. It is suggested to opt for procedures such as laser enucleation and resection of prostate for large size prostate. However, such recent and advanced technologies are not easily available in third world countries. So, in poor countries such as Pakistan, either open prostatectomy is the choice or staged TURP is preferred in prostate size more than 100 grams. We aimed here to see single surgeon experiences in which TURP was done in prostate size more than 100 grams. We also compared outcomes between smaller and larger prostates TURP.

Materials and Methods: A total of 205 cases were included in this prospective study, which were operated by a single surgeon trained in endourology and post fellowship experience of 10 years, with conventional monopolar TURP using standard technique. Group A had 116 cases of prostates smaller than 75 grams (based on EAU guidelines Cut off value for TURP), and group B had 89 cases of prostates size more than 100 grams. Intra-operative and post-operative complications, blood loss, pre and post- operative quality of life (QoL) and international prostate symptom score (IPSS), operative time, and hospital stay were compared between these groups.

Results: Mean age of patients in group A was 61.2 ± 11.6 years and 63.4 ± 9.3 years respectively (P = 0.1). The mean preoperative size of prostate was 71.18 grams in group A and 110 ± 22.6 grams in group B (P = 0.001). Mean resection time was 43.4 ± 8.2 minutes and 73.4 ± 11.7 minutes in small and large size prostate groups respectively (P = 0.001). There were satisfactory improvements in terms of IPSS and QoL in both the groups which were comparable. Post-operative retention of urine was seen in 3 and 7 patients in the two groups (P = 0.1). No need for transfusion was seen in the large sized prostate group. TUR syndrome was not seen in any case of the large size prostate group. Urethral stricture was seen in one and two cases in respective groups (P = 0.1).

Conclusion: In poor countries, TURP can be safely used even for large size prostates in single setting with meticulous, smooth and swift resection. Short procedure time is achieved by keeping continuous good vision by balancing suction pressure and the irrigation inflow meticulously. Surgeons hand and experience may have role which needs further research.

UP-280

Can Preoperative Use of Alpha Blockers Make Ureteroscope Insertion Easier at Vesico Ureteric Junction and Decrease the Post-operative Pain. A Single Center Study

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Introduction and Objective: To evaluate if using alpha blockers preoperatively can facilitate the negotiation of the ureteroscope through the ureteric orifice and assess if it can result in decreased pain postoperatively.

Materials and Methods: A prospective, randomized study of 136 patients who underwent procedure of ureteroscopic (URS) stone removal for lower or mid ureteric calculi between January 2018 and March 2018. Patient of age more than 18 years were included in the study. They were divided into two groups, (Group A – who took alpha blockers) and group B (not taken alpha blockers for 5 days preoperatively). Patients with stone size > 1 cm, duplex system, who refused to enroll in study, and previous history of ureteroscopic interventions were excluded from study.

Results: Out of the 136 patients, total of 68 patients were prescribed alpha blockers preoperatively (group A). Mean age of the study population was 32.13 + 11.34 years. Mean stone size was 41.42 + 9.5 mm^2. There was seen no difference in rate of ureteroscope negotiation through ureteric orifice between the two groups while there was slight decrease in pain in the intervention group, but it was not significant (p= 0.61).

Conclusion: It was concluded that preoperative use of alpha blockers had no extra beneficial effect in terms of ureteroscope negotiation in ureteric orifice and post-operative decrease in pain.

UP-281

Laser Lithotripsy Using Dusting Technique (Low Energy, High Frequency) for Symptomatic Upper Urinary Tract Stones

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Introduction and Objective: A prospective study to assess the feasibility of stone dusting technique (low energy and high frequency) during laser lithotripsy in symptomatic UUT (upper urinary tract) stones.

Materials and Methods: Sixty patients with symptomatic single or multiple UUT stones less than 3 cm in diameter were included. Patients with coagulation disorders and active UTIs were excluded. All patients were clinically evaluated and underwent non-contrast spiral CT (NCSCT) to detect stone site, size, number, Hounsfield unit (HFU) and degree of hydronephrosis (HUN). Rigid or flexible ureteroscope was used with stone dusting using the Ho: YAG laser at low energy and high frequency (0.5 J & 20 Hz) set. Operative and fluoroscopy time, total energy delivered, type of stent, hospitalization time, complications and its grade, number of treatment sessions and stone free status using NCSCT after 4 weeks were recorded.

Results: The mean stone size ± SD (range) was 1.55 ± 0.55 (0.5-3) cm, out of sixty patients (50 with single stone and 10 with multiple stones), fifty-five patients were stone free at 4 weeks. Complications had occurred in 11 patients (eight with grade I, two with grade II, and one with grade IIIa) according to Clavien- Dindo grading of surgical complications, Stone size was the only parameter which correlated significantly with stone-free rate. No significant correlation between incidence of complications and other parameters (stone size, site, BMI, age and operative time).

Conclusion: Stone dusting technique is feasible, safe and effective in management of UUT stones.

UP-282

Airseal System: Does it Improve Physiological Outcome in Laparoscopic Radical Prostatectomy?

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Introduction and Objective: To prospectively compare the physiological effects of the Airseal system compared to the standard carbon dioxide (CO_2) insufflator in laparoscopic radical prostatectomy (LRP).

Materials and Methods: Two cohorts of patients who underwent LRP with Airseal versus standard insufflation between January 2018 and October 2018 were prospectively analysed. In addition to clinicopathological data, various intraoperative physiological values (end-tidal CO_2 ($ETCO_2$), pH, pCO_2, and base excess (BE)) were collected per pre-formed proforma and analysed. A $p < 0.05$ was considered statistically significant.

Results: A total of 17 patients were included in this study; 9 (52.9%) had Airseal and 5 (47.1%) had standard insufflation. There was no difference in mean age (68 years vs 61 years, p= 0.34), PSA (12 vs 13, p= 0.99), and Gleason Score (p= 0.76) between Airseal and standard groups. There was significantly lower mean pCO2 in Airseal group at the 2-hour mark (54.9±5.3 mmHg vs 77.4 ± 22.3 mmHg, p= 0.04). There was a trend towards lower mean $ETCO_2$ in Airseal group compared to standard group at both 1 and 2 hours (43.8 ± 3.1 mmHg vs 47.1 ± 7.3 mmHg, p= 0.30 and 40.7 ± 5.7 vs 55.3 ± 11.1, p= 0.12 respectively) with smaller difference in $ETCO_2$ at 1 and 2 hours from baseline (4.3 ± 4.4 mmHg vs 9.8 ± 9.4 mmHg, p= 0.16, 8.8 ± 5.6 mmHg vs 17.4 ± 12.1 mmHg, p= 0.17 respectively). Airseal group was observed to have more stable mean pH at the 2-hour mark, although not statistically significant (7.25 ± 0.05 vs 7.23 ± 0.10, p= 0.71).

Conclusion: Airseal is a novel valve-less system that enables stable pneumoperitoneum with continuous CO_2 recirculation which allows improved patient's exposure to CO_2 during LRP with more stable CO_2 circulation amongst Airseal group as observed by significantly lower mean pCO_2 at 2 hours, lower $ETCO_2$, and less systemic acidosis.

UP-283

Early Surgical Outcomes of Laparoscopic Partial Nephrectomy in T1b Compared to T1a Renal Tumours

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Introduction and Objective: With wide acceptance of laparoscopic partial nephrectomy (LPN) for the treatment of small renal masses < 4 cm (T1a), the concept has been extended to select > 4 cm (T1b) renal tumours. There are few isolated reports for laparoscopic partial nephrectomy for T1b renal tumours. Our objective was to evaluate the early surgical outcomes of LPN for pT1b tumours compared with LPN for pT1a tumours in a single center in India.

Materials and Methods: We retrospectively reviewed data of 97 consecutive patients who underwent LPN in a single tertiary care centre of south India from 2010 to 2019. Patients were stratified into two groups according to radiographic tumour size. Patient demographics, perioperative outcomes and oncologic outcomes were recorded.

Results: A total of 34 out of 97 patients who underwent LPN during the study period, had T1b tumours radiographically. The median tumour size was 4.9 cm (4.1 – 6.6 cm). Two tumours were upgraded to pT3a due to sinus fat infiltration. The variables studied are compared in the table attached.

Conclusion: Laparoscopic partial nephrectomy can be safely extended to select T1b renal tumours. The trifecta outcome was better for T1a tumours but showed no statistical difference. The warm ischemia time, operation time, complication rates and hospital stay were similar with a significantly increased total blood loss for T1b tumours.

UP-284

Management of Atypical Uretero-Pelvic Junction Obstruction in the Robotic Era: Experience from a Tertiary Centre and Algorithmic Approach

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UP.283, Table 1. Surgical outcomes of T1a compared to T1b renal tumors.

Variables	T1a tumours	T1b tumours	*p Value*
Number	63	34	-
R.E.N.A.L score	6.8	8.2	<0.05
D.A.P score	5.6	7.2	<0.05
Warm ischemia time (minutes)	17.9	20.2	0.14
Operation time (minutes)	149	163	0.2
Complication (Clavien-Dindo ≥ 3)	2	3	0.15
TRIFECTA achievement	45 (71.4%)	20 (58.8%)	0.19
Estimated blood loss (ml)	212	442	< 0.05
Post-operative stay (Days)	4.5	4.8	0.09

Introduction and Objective: Uretero-pelvic junction obstruction (UPJO) occasionally present with complex problems such as giant hydronephrosis, atypical uretero-pelvic anatomy, solitary kidney, unavailable ureter (long segment ureteric strictures/previous ureteric anastomosis) and secondary UPJO. Such unusual situations pose significant challenges in surgical management. We aim to present an algorithmic approach in management of these patients along with our experience in robotic repair of complex and atypical UPJO.

Materials and Methods: From 2015 to 2018, 7 cases (8 renal units) of UPJO with complex anatomic problems were operated robotically in our department. Four patients underwent 'Santosh-PGI' tabularized flap pyelovesicostomy in 5 renal units. All of them presented with giant hydronephrosis (HDN). One patient presented with giant HDN in a solitary kidney with multiple secondary calculi and underwent calico vesicostomy. Another female underwent robot assisted boari flap calico vesicostomy following failed robotic ureterocalicostomy for secondary UPJO. A young female with long segment upper ureteric calculus underwent ileocolic vesicostomy. All the patients were drained pre-operatively by percutaneous nephrostomy (PCN) and the anastomosis were based over a 16 Fr Foleys catheter placed suprapubically. The mean operative time was 180 minutes with an average blood loss of 100 mL.

Results: There were no intraoperative or perioperative complications. All patients demonstrated good gravity dependent drainage with no contrast leakage or anastomotic narrowing on postoperative nephrostogram. On a follow-up period ranging from 4 months to 3 years, all patients are asymptomatic with no worsening of renal function. The patients were advised double voiding and are on regular follow up.

Conclusion: The advent of robotic surgery has made complex reconstructions for the management of complex and atypical UPJO feasible and simple with minimal morbidity. A wide gravity dependent drainage forms the basis of these repairs and each case must be individualized according to the uretero-pelvic anatomy, functional status and clinical presentation of the patient.

UP-285

Laparoscopic Single-Channel Varicocele Dissection (LEVD) for Symptomatic Varicocele. A Novel Minimally Invasive Technique

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Introduction and Objective: Varicocele constitutes a significant abnormality in young men that may be a causative factor for infertility or chronic scrotal pain. It may be also an esthetic problem. The standard treatment includes open or laparoscopic spermatic vein ligation with excellent results. Nevertheless, the common tendency to minimize surgical approaches has gained varicocelectomy as well. One of the latest concepts is the Laparoscopic Single-channel Varicocele Dissection (LEVD). We present our initial experience with seven patients treated with this technique.

Materials and Methods: From May 2017 to December 2018, we carried out seven LEVD procedures in 7 males of mean age 26.4 (range 22-40) suffering from infertility or scrotal pain. We used the fabric kit (LEVD, Wolf, Germany Tutlingen) that consists of a 5 mm trockar, 4 mm optic and appropriately designed working instruments (disector, monopolar forceps, scissors). No drainage was needed. We assessed operative and hospitalization times as well as safety and effectiveness of the method.

Results: All patients were operated successfully with no complications or extra port insertion. The blood loss was minimal. The mean operative time was 13.4 min (range 7- 38). The patients were discharged within 9,8 (range 6-22) hours of surgery. During a 1-year follow-up (range 4-20 months) all patients reported significant release of symptoms and two patients became fathers. No hydrocele was observed. In one patient a recurrent varicocele was managed with standard laparoscopy.

Conclusion: The LEVD procedure is a safe and effective option for spermatic vein ligation because of its minimal invasiveness, short hospital stay and fast recovery time.

UP-286

Application of Ureteroscopic Balloon Dilatation in Treatment of Ureteral Stricture

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Introduction and Objective: To evaluate the clinical value of ureteroscopic balloon dilator in the treatment of urethral stricture.

Materials and Methods: A retrospective analysis was performed on 22 patients who underwent ureteroscopic balloon dilatation in our hospital from 2015 to 2018. 5 patients' stricture was caused by a stone, 5 patients of upj and 2 patients was caused after pelvic radiotherapy. F7 double J tubes were indwelling postoperatively. IVP and renal B ultrasound were re-examined.

Results: The ureteral balloon dilatation was successfully performed in 22 patients. The operation time last for 35~80 min. average 42.5 min. All patients were hospitalized for 2.9 days averagely. The tubes were removed or replaced 3 months after operations. Three cases had no obvious improvement after dilatation and required further treatment. Ureteral stricture was not observed in other patients.

Conclusion: Ureteroscopic balloon dilatation is an effective treatment for ureteral stricture. It is a simple, safe and effective surgical method, and with fewer complications, less damage and shorter time.

UP-287

Application of Robotic-Assisted and Conventional Laparoscopy in Ureteral Reimplantation with Psoas Hitch: Our Experience at MPUH, Nadiad

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Introduction and Objective: To compare the efficacy of robotic-assisted laparoscopic and conventional laparoscopic ureteral reimplantation with psoas hitch.

Materials and Methods: We retrospectively analyzed the data of 20 patients undergoing robotic-assisted laparoscopic ureteral reimplantation with psoas hitch and 15 patients undergoing conventional laparoscopic ureteral reimplantation between Jan 2014 and Feb 2016 at MPUH, Nadiad. The indications, surgical techniques and outcomes of the two procedures were compared.

Results: All the patients completed the Robotic and laparoscopic procedures without conversion to open surgery. Robotic-assisted and conventional laparoscopic procedures were comparable in terms of the mean operation time (165.50 ± 52.57 vs 152.50 ± 73.60 min), mean volume of blood loss (81.00 ± 69.35 vs 46.67 ± 31.41 mL), mean duration of catheter retention (6.75 ± 1.74 vs 7.50 ± 2.43 days), and mean postoperative hospital stay (7.10 ± 2.08 vs 8.67 ± 3.14 days). The patients were followed up for a mean of 18 months, during which none of the patients experienced anastomotic leak, vesicoureteral reflux or hydronephrosis.

Conclusion: The study shows no significant differences in surgical outcomes with respect to operative time, blood loss, surgical techniques or postoperative outcome between robotic-assisted and conventional laparoscopic procedures of ureteral reimplantation with psoas hitch.

UP-288

Early Urinary Continence Recovery After Robot Assisted Radical Prostatectomy

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Introduction and Objective: Postoperative urinary incontinence has a relevant negative effect on the satisfaction and quality of life of patients who undergo radical prostatectomy for prostate cancer. More than 80% of men will regain urinary continence at 1 year, and more will regain up to 2 years after the operation. Early urinary continence (UC) rates, however, are much worse. The prevalence of urinary incontinence after Robot Assisted Radical Prostatectomy (RARP) is influenced by preoperative patient characteristics, surgeon experience, and surgical technique. Surgical technique is the only modifiable factor among these, and therefore, identifying and developing an optimal operative technique is likely to impact on continence outcomes. To present the risk factors for urinary incontinence after RARP and to identify surgical techniques which helps in escalating UC recovery within 3 months after RARP.

Materials and Methods: A literature search on studies reporting early UC, different risk factors and surgical techniques was conducted using the Medline. We evaluated our last 50 patients who underwent RARP for early UC at 7, 30 and 90 post-operative days.

Results: High level of evidence for early UC recovery do exist for sparing of the sphincteric mechanism, as well as sparing, and reconstruction of the supportive structures. Using all these surgical techniques, in our series of 50 patients after RARP, the rate of urinary

UP.288, Table 1: Continence Results (0 or 1 pad per day).

	Day 7	1 month	3 months
Continence (n=50)	23 46%	29 58%	36 71%

continence on day 7, 30 and 90 was 45, 58 and 71% respectively.

Conclusion: Age, body mass index, comorbidity index, length of the urethra, and prostate volume were the most relevant preoperative predictors of urinary incontinence after RARP. Various surgical techniques are available to optimize UC recovery post RARP. Early urinary continence recovery is very important for quality of life of patients who undergo radical prostatectomy

UP-289

Utilizing da Vinci® Surgical System to Treat Challenging Urinary Stones

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Introduction and Objective: A worldwide mounting in the incidence and prevalence of urolithiasis has been observed. The standard treatment of urologic stone disease (USD)has changed from open surgery to extracorporeal shock wave lithotripsy (ESWL), percutaneous nephrolithotomy (PCNL) or ureteroscopy depending on the size and location of the stone. we are sharing our experience in utilizing Da Vinci® robotic surgical system to treat patients with urolithiasis instead of open surgical approach.

Materials and Methods: We reviewed prospectively collected data of 19 patients who underwent robotic assisted stone surgery (RSS) between January 2010 and March 2018 at our institute for USD involving 22 nephroureteral units.

Results: A total number of 22 RSS were accomplished with no conversion to open. 3 patients had bilateral stone and needed to have RSS on each side separately. Eleven RSS were performed on the right. The indications for RSS included: morbid obesity (n= 8, mean BMI 56.4 kg/m2), need for concurrent renal surgery (n= 3) severe contractures limiting positioning for retrograde endoscopic surgery or PCNL (n= 2), symptomatic calyceal diverticular stone with failed endoscopic approach (n= 4) and after failed PCNL (n= 2). 20 nephrouretral unit (91%) were rendered stone free on the first attempt with complication occurring after 4 cases (18%).

Conclusion: RSS is viable options in the treatment of challenging urologic stone (CUS) with high success rate and low risk of complication. The need for open stone surgery was eliminated by RSS at our center.

UP-290

Total Clipless Transperitoneal Laparoscopic Nephrectomy: Experience on Five Cases

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UP.289, Table 1. Patient demographics and data.

Variable	Value
Number of patients	19
Number of renal units	22
Gender (male/female)	10/9
Mean number of stone	2.3 (1-7)
Age (years)	53 (19-75)
BMI*, kg/m²	39.5 (17.7-61.4)
Stone size the longest axis (mm)	29 (12-60)
Total stone volume (cc)	16.7 cc (0.7-75 cm³)
Stone side (right/left)	11/11

BMI: Body mass index, BMI*Unit (kg/m²)

UP.289, Table 2. Operative results of the robotic assisted stone surgery.

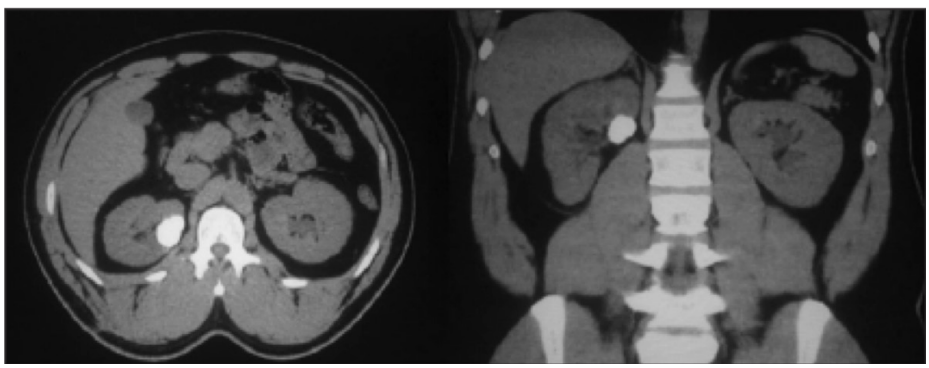
Surgical Outcome	Value
Operative time, min	180 (90-300)
EBL, mL	57.8 (10-400)
Length of hospitalization, days	3.5 (1-12)
Mean follow-up, days	54
Postoperative complications (%)	4/22 (18)
SFR (%)	20/22 (91)

SFR: Stone free rate, EBL: Estimated blood loss

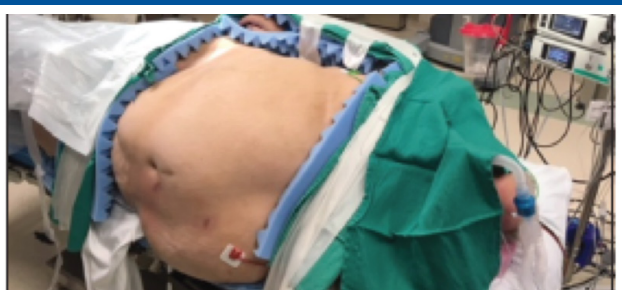
UP.289, Table 3. Stone composition.

Stone composition	Renal unit
Calcium oxalate	7
Calcium phosphate	5
Uric acid	2
Struvite stone	4
More than one component	3

UP.289, Figure 1. Computed tomography urography scan showing renal calculi in a closed diverticulum



UP.289, Figure 5. Patient positioning.



Introduction and Objective: Minimally invasive techniques of kidney surgery have developed worldwide. The technical aspects of laparoscopic nephrectomy have been refined over the years. The purpose of this study was to evaluate the safety, feasibility and efficacy of the LigaSure vessel closure system during laparoscopic nephrectomy.

Materials and Methods: The LigaSure device was used in 5 patients (3 female, 2 male) undergoing laparoscopic nephrectomy for non-functional kidneys between January 2018 and April 2018, three on the left and two on the right. For laparoscopy, all patients were in the lateral decubitus position and a transperitoneal approach was used. Nephrectomy was carried out without the use of clips or sutures for vessel closure. All trocars were removed, and all incisions were closed by suturing of the skin, no drainage was put in the renal lodge.

Results: In all patients, operations were completed laparoscopically, and no conversions to open surgery were needed. All nephrectomy were carried out with the use of the LigaSure device for blood vessel closure. The mean operative time was 29 ± 12.6 min. According to the modified Clavien grading system, no Grade IV or V complication was seen, and no patients required blood transfusion. Mean blood loss was 63 mL (range 45 to 100 mL). The hospital stay was 24 hours for all patients.

Conclusion: For vessel closure during laparoscopic nephrectomy, the LigaSure device seems to be safe, effective and made the procedure easier to do, with shorter operative times and less blood loss. For patients with conditions such as non-functional kidneys

UP-291

A Novel Technique of Access of Peritoneal Cavity and Creation of Tunnel in Laparoscopic Orchidopexy with Points of Technique

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Introduction and Objective: Diagnostic Laparoscopy (DL) & Laparoscopic Orchidopexy (LO) has proved to be the best available procedure for diagnosis and management of impalpable undescended testes. Creation of tunnel in open technique is usually simpler but in LO tunnel creation is little cumbersome usually using haemostatic forceps from below or dissecting forceps from above in grown up children and adults where pneumoperitoneum is usually lost, and procedure becomes blind quiet often. We are using this novel technique to create more precise safe and better controlled access and tunnel. We present our initial experience with points of technique.

Materials and Methods: Thirty patients age 5 to 30 years with low impalpable testes are included in study from 2013 to 18 in Dept. Of Surgery KGMU, Lucknow. We used standard three port technique after DL, cases suitable for single stage LO were taken up and testis mobilisation was done with standard technique. Then scrotal subdartos pouch created and a PCNL guide is passed through pouch via base of scrotum superolaterally to pubic tubercle into the abdomen through neohiatus between medial and lateral ligament. Tract dilated with serial dilators and finally 14 mm Lap-trocar passed, and laparoscopic forceps used to hold Gubraanaculam and testis is brought down to scrotum and placed in subdartos pouch.

Results: LO was done in 30 cases using this novel technique, access & tunnel creation was more precise, simpler, smooth and without any complication.

Conclusion: LO in grown up children and adults using this novel technique of access to peritoneal cavity and tunnel creation is more precise smooth ,simpler and safe with better control on pneumoperitoneum and better visualisation.

UP-292

The Benefit of Robotic Surgery in a Contemporary Practice of Radical Cystectomy with ERAS Protocols – Propensity Score Adjusted Analysis of Peri-Operative Outomes

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Introduction and Objective: While enhanced recovery after surgery (ERAS) in radical cystectomy is established in our institution, the additional benefits of robotic surgery with intracorporeal urinary reconstruction in radical cystectomy (iRARC) have not been evaluated formally. To evaluate the potential benefit of iRARC in a contemporary ERAS practice, comparing peri-operative outcomes with open radical cystectomy (ORC).

Materials and Methods: With CIRB approval (Singhealth CIRB 2009/1027/D), all consecutive patients who underwent radical cystectomy and managed under an ERAS protocol, from December 2013 to October 2018 were reviewed. The demographics and peri-operative outcomes were analysed. Propensity score adjustment was performed to reduce biases attributable to covariate imbalances. iRARC was performed with a Da Vinci Si system with 3 robotic arms. Intracorporeal ileal conduit (IC) reconstruction was performed in a Wallace fashion anastomosis while orthotopic bladder reconstruction (OBS) was created using a modified Studer OBS technique mimicking the open technique.

Results: There were 18 iRARC and 21 ORC patients. There were no significant differences in demographic or pathological characteristics, and no significant propensity score adjustment in baseline characteristics was required between cohorts. The iRARC cohort was associated with lower estimated blood loss (EBL) and transfusion rates (300 vs 600 mL, p= 0.05). There was also a trend towards a shorter duration of ileus (4 vs 5 days, p= 0.09) and shorter duration of post-operative opioid administration (1.5 vs 3 days, p= 0.11). These benefits were apparent despite a longer operative time for iRARC (581 vs 446 min, p= 0.03), and a higher proportion of orthotopic bladder reconstruction (27.8% vs 4.8%, p= 0.07) and salvage cystectomies (11% vs 0%, p= 0.16). Comparable perioperative complications (11 vs 5%, p 0.26) and length of stay (8.2 vs 7.4 days, p= 0.56) were observed in the iRARC cohort.

Conclusion: When compared to an equivalent ORC cohort, iRARC has peri-operative benefits of lower EBL and transfusion rates, with a trend towards faster bowel recovery and a shorter duration of opioid analgesia despite a longer operative time, and a higher proportion of OBS reconstruction. These benefits are apparent even with an ERAS care protocol in contemporary practice.

UP-293

Intermediate Oncological Outcomes in a Contemporary Series of Robotic and Open Cystectomies – A Propensity Score Adjusted Analysis

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Introduction and Objective: Minimally invasive techniques for radical cystectomy have been proposed to reduce peri-operative morbidities associated with open surgeries. However, the oncological benefits of robotic surgery with intracorporeal urinary reconstruction in radical cystectomy (iRARC) have not been evaluated formally. To evaluate the potential oncological benefit of iRARC in a contemporary cohort, compared with open radical cystectomy (ORC).

Materials and Methods: With CIRB approval (Singhealth CIRB 2009/1027/D), all consecutive patients who underwent radical cystectomy from December 2013 to October 2018 were reviewed. The demographics, clinicopathological characteristics and survival outcomes were analysed. Propensity score adjustment was performed to reduce biases attributable to covariate imbalances. Extended template pelvic lymph node dissection was routinely performed in either approach.

Results: There were 18 iRARC and 21 ORC patients respectively. No significant propensity score adjustment in baseline characteristics was required between cohorts. More patients (38.9 vs 14.3%) in the iRARC group received neoadjuvant chemotherapy (NACT) (p= 0.14). A higher proportion of orthotopic bladder reconstruction (27.8% vs 4.8%, p= 0.07) and salvage cystectomies (11% vs 0%, p= 0.16) were performed in the iRARC group. The pathological outcomes were similar in both groups (50 vs 47.6% > T2 disease, p= 0.856; 27.8 vs 33.3% lymph node involvement, p= 0.742). All patients achieved negative margins on final histology. Patients who underwent ORC had a non-significant tendency towards higher lymph node yield (34 vs 28 nodes, p= 0.256). The mean follow up time was 34.0 and 32.4 months in the iRARC and ORC groups respectively. The intermediate oncological outcomes for both groups were similar. The mean recurrence free survival (RFS) in the iRARC group was 37.5 months, compared to 21.4 months in ORC (p= 0.093). The mean overall survival (OS) was 43.0 months in the iRARC group and 35.5 months in ORC (p= 0.14).

Conclusion: Compared to an equivalent ORC cohort, iRARC achieved similar oncological outcomes and survival profile in intermediate-term analyses. Despite a non-randomised study, the cohort is largely equivalent with minimal propensity score adjustment. The favourable oncological outcomes support the implementation of iRARC as a reasonable alternative

approach for treating bladder cancer in centres with modest workload.

UP-294

Experience with Mini-Percutaneous Nephrolithotomy During Learning Curve

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Introduction and Objective: The miniaturization of access sheath in Mini-Percutaneous Nephrolithotomy (Mini – PCNL) surgery has significantly reduced the intervention related morbidity. The clinically relevant endpoints for PCNL are the rates of stone clearance and major complications. Cost is the main barrier behind model or simulator based PCNL training in low income countries. Considering the less invasiveness of Mini-PCNL the outcome was evaluated for learning curve.

Materials and Methods: This is a prospective cohort study where single urologist without previous experience of independent PCNL surgery performed Mini PCNL under supervision. The endpoint was 60 Mini-PCNL procedures. The inclusion criteria were patient age ≥ 15 years and renal stone sized 10-30 mm. Patient with congenital anomalies, solitary kidney and urinary tract infection were excluded. Informed consent was taken, and ethical clearance was taken from institutional review board. All the procedure was performed with Ureteroscope (7.5/11.5 Fr or 6.5/ 9.5Fr) and Pneumatic lithotripter. The outcome is measured in terms of stone free rate and postoperative complications.

Results: The mean age of study group was 37.0 ± 9.9 years. The overall mean operative time was 55.0 ± 19.0 minutes. The mean stone size was 16.8 ± 2.9 mm and stone free rate was 98.0%. The mean drop in hemoglobin was 1.3 ± 0.8 gm/dl. The grade I complications was 16% and grade II and III was 8% each. Stone free rate was significantly associated with stone numbers (r= -0.47, p= 0.004). Similarly fall in hemoglobin was associated with total operative time (r=0.49, p= 0.003). The mean operative time decreases significantly after 30 cases (p< 0.05). 56% patient underwent tubeless procedure and average hospital stay was 2.6 ± 1.3 days.

Conclusion: Mini PCNL is safe and effective for small and medium sized (10-30 mm) renal stones in hands of novice urologist. It can be adopted for hands on training for residents under supervision. Use of Ureteroscope, pneumatic lithotripsy, higher rate of tubeless procedure and lesser hospital stay serve well for low income countries.

UP-295

Review of Extracorporeal Shock Wave Lithotripsy Outcomes in a Newly Established Lithotripsy Service in an Australian Public Hospital

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Introduction and Objective: Extracorporeal Shock Wave Lithotripsy (ESWL) is a widely utilized procedure for the treatment of urinary calculi. We reviewed the efficacy of this treatment modality at a newly established ESWL service through our public hospital over its first 2 years of operation to identify factors that could be modified to enhance the delivery & outcomes of the service.

Materials and Methods: A retrospective review of prospectively collected data were analyzed. All patients underwent day case ESWL between 1st January 2017 to 31st December 2018. Patient demographics, stone size & number, location, number of ESWL treatments, 30-day readmission, and early & delayed complication rate (> 30 days) were reviewed.

Results: N=159 patients underwent ESWL during the period. (Male: 112, Female: 69). Median age was 51 years. Of these, N=129 treated were for intra-renal stones, N=30 were for ureteric stones. The majority, 84%, had a single calculus treated, and 21% had 2 calculi treated & 5% had > 3 calculi treated in single episode. For intra-renal stones: mean calculus size was 7.0 mm (range 2-15mm). For ureteric stones, mean calculus size was 6.9mm (range 4-14mm) and 31 patients had insertion of ureteric stent prior to treatment. Mean treatment time was 49 minutes. Median American Society of Anaesthesiologists (ASA) grade of patients was 2. Stone clearance was achieved in 80% (N=108) of patients. Only 8 patients required readmission for complications following ESWL. N=5 re-admitted for steinstrasse requiring ureteric stent insertion and subsequent endourological clearance, N=2 patients UTI requiring intravenous antibiotics, N= 1 for renal hematoma was managed conservatively. 30-day readmission rate was 5.7%, in which the average stone size was 9.3mm with the majority being lower pole and ureteric stones. Follow up data was not available for N=24 patients.

Conclusion: Day case ESWL service at this site is efficacious in treating renal & ureteric calculi with overall low complication rates and comparable stone clearance rates. Service delivery could be improved by optimizing selection of smaller stones in favorable anatomical positions

UP-296

The Margin Strategy in Laparoscopic Partial Nephrectomy with Selective Renal Artery Clamping: Anatomical Basis, Surgical Technique and Comparative Outcomes

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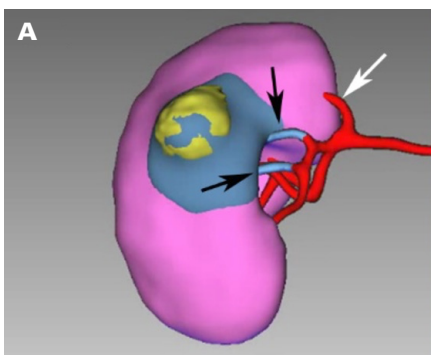
Introduction and Objective: To evaluate the possibility and efficiency of a modified margin strategy in laparoscopic partial nephrectomy with selective renal artery clamping.

Materials and Methods: Seventy-six cases of laparoscopic partial nephrectomy with segmental renal artery clamping in Shanghai Changhai Hospital between July 2014 and September 2017 were retrospectively reviewed. Relevant clinical data were recorded including baseline patient and tumor characteristics, and surgical outcomes (segmental artery mobilization time, operating time, warm ischemic time, estimated blood loss, complications, and so on). A comparative analysis between standard technique and margin strategy was performed.

Results: In 38 cases, margin strategy to mobilize segmental artery was successfully performed. In the other 38 cases, the surgery was performed in traditional

UP.296, Figure 1. A typical case. (A) Preoperative evaluation of feeding border arteries.



UP.296, Table 1. Perioperative outcomes: group comparison.

	Margin strategy (n=38)	Control group (n=38)	p value
Segmental artery mobilization time, min	5 ± 4	12 ± 5	<0.001
Operating time, min	108 ± 19	116 ± 21	0.086
WIT, min	22 ± 5	24 ± 6	0.119
EBL, min	130 ± 82	142 ± 65	0.482
Post-operative affected side GFR, ml/min	31.4 ± 5.2	30.2 ± 4.6	0.290
Overall complications, n (%)	2 (5.3)	1 (2.6)	>0.05
Positive surgical margin	1	0	
Vascular injury	1	0	
Transfusion	0	0	
Hematuria	0	1	

Values expressed as mean ± standard deviation.

method. The use of new strategy led to a shortened segmental artery mobilization time (5 min vs 12 min, p<0.001). There was no difference in terms of perioperative complications between the two techniques.

Conclusion: The margin strategy is a practical method in laparoscopic partial nephrectomy with selective renal artery clamping. It provides a simplified way of finding segmental arteries. Further studies are needed to confirm these preliminary findings.

UP-297

Tubeless and Totally-Tubeless Supine Percutaneous Nephrolithotomy (PCNL) – Lessons Learned and Future Developments

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Introduction and Objective: Traditional practice following percutaneous nephrolithotomy (PCNL) is to leave a nephrostomy drain. 'Tubeless' PCNL involves placement of a ureteric stent in lieu of a nephrostomy drain. In 'totally-tubeless' PCNL, no drainage is left. The purpose of this study was to demonstrate that standard and miniaturised PCNL can be performed tubeless or totally tubeless with excellent outcomes.

Materials and Methods: Fifty-two tubeless or totally-tubeless PCNLs were performed between 2013 and 2018. PCNLs were performed in the modified supine position. Data on outcomes and complications were collected prospectively. Decision to omit nephrostomy drain or ureteric catheter/stent was made at time of surgery in cases that were deemed suitable (e.g. no solitary kidney, minimal bleeding and fluoroscopic/visual complete stone clearance at operation completion). Stone clearance rates, length of hospital stay, and complications were determined.

Results: 13 tubeless and 39 totally tubeless PCNLs were performed. Miniaturised equipment was utilised in 11 of the totally tubeless group. Overall stone-free rate was 86%. Median length of stay was 1 day. The rate of complications (Clavien-Dindo grade 3 and above) was 8%.

Conclusion: Omitting a nephrostomy drain or ureteric stent is a safe option in suitable patients. We have demonstrated excellent stone free rates with minimal complications and length of hospital stay. We plan to conduct a pilot trial assessing the clinical outcomes, feasibility and acceptability of tubeless miniaturised versus tubeless conventional PCNL using validated pain scores and PROMs.

UP-298

Women Should Not Be Urologists in Taiwan? The Differences of Service Patterns of Female Urologists, Gynecologists, and General Surgeons

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Introduction and Objective: Sexual stereotype is a key factor for physicians to choose their carrier. Traditionally, surgery is viewed as the field of man in Taiwan. The condition is even worse in urology, because it deals with the abnormalities of genital areas, especially male patients. Nevertheless, there are more and more females devoting themselves into surgery-related specialties. In this study, we try to compare the differences of service patterns of female physicians among different gender-specific specialties, including urology, gynecology, and general surgery.

Materials and Methods: 2000 Longitudinal Health Insurance Dataset (2000LHID) is one of the datasets of National Health Insurance Research Database in Taiwan, including all the medical insurance information from one million randomly-selected residents in Taiwan. The claim data including the yearly inpatient and outpatient service volumes, total and major surgical volumes, revenues, and sex ratio of patients of each female and male attending urologist, gynecologists, general surgeons with practice more than five years between 1995 to 2013 were recruited. The differences of female-to-male ratio of these factors were compared among urologists, gynecologists, and general surgeons with ANOVA test. P < 0.05 was viewed as statistically significant.

Results: Female accounts for 6.7%, 51.3%, and 7.0% of urologists, gynecologists, and general surgeons, respectively. Their differences of their service and revenue were shown in Table 1. Female urologists and general surgeons had fewer patient services and revenues than male, while female gynecologist performed better. Nevertheless, when it comes to inpatient service, female general surgeons and urologists were doing better than gynecologists. There are no differences between female general surgeons and urologists.

Conclusion: There are limitations of female urologists and general surgeons, rather than gynecologists in their clinical service. Female urologists are non-inferior than other female general surgeons in Taiwan. Efforts should be done to improve the gender inequality in the field of urology and surgery.

UP-299

Chronic Pelvic Pain Patients Who Catastrophize More Have More Pelvic Symptoms and Comorbid Pain Diagnoses

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Introduction and Objective: Chronic pelvic pain (CPP) patients have shown to have associated comorbid pain conditions. It is unclear which factors contribute to refractory chronic pain. Catastrophizing have shown to have a role. This study elucidates characteristics associated with catastrophizing in CPP patients.

Materials and Methods: CPP patients completed histories and standardized questionnaires: genitourinary pain index (GUPI), patient health questionnaire (PHQ-4) for anxiety and depression, interstitial cystitis symptom index (ICSI), and pelvic floor distress inventory (PFDI-20). Scores and number of comorbidities compared to pain catastrophizing scale (PCS) by linear regression. "Extreme catastrophizing" (score ≥ 30) associated with worse outcomes in the literature also analyzed.

Results: One hundred eighty-eight patients (mean age 42), 23 males. Mean of 4 comorbidities. Higher number pain comorbidities correlated to PCS (p <0.001). Higher scores on GUPI, PFDI-20, ICSI, PHQ-4 anxiety and depression all had positive correlations with PCS (p <0.001). 81/184 (44%) extreme catastrophizers scored significantly worse on all standardized measures when compared to non-extreme catastrophizers. Mean scores for non-extreme versus extreme catastrophizers: GUPI (25.7 ± 6.8 v 32.7 ± 6.5, p <0.001), ICSI (6.5 ± 4.7 v 9.4 ± 5.8, p <0.001), PFDI (88.8 ± 52 v 121.1 ± 62.8, p <0.001), PHQ4 anxiety (1.7 ± 2.0 v 3.6 ± 2.1, p <0.001) and depression (1.4 ± 1.6 v 3.3 ± 2.0, p <0.001). Number of comorbidities not significant predictor of extreme catastrophizing (3.5 v 3.7 p= 0.22).

Conclusion: Higher scores on standardized questionnaires and number of comorbidities associated with more catastrophizing in CPP patients may help predict who catastrophizes. It is important to recognize when pain extends beyond the pelvis and to engage collaborators in multidisciplinary approach, seeking systemic pain etiology including counseling and adjunctive therapies.

UP-300

Diagnostic Test Accuracy of Glasgow Prognostic Score as a Prognostic Factor for Renal Cell Carcinoma: A Meta-Analysis

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Introduction and Objective: The objective of this study was to perform a meta-analysis of the diag-

UP.298, Table 1.

Ratio of female to male physicians	Urology	Gynecology	General Surgery	*P value*
Outpatient service				
Patient numbers	0.83±0.30	1.14±0.23	0.75±0.26	<0.001
Revenue	0.73±0.35	1.08±0.24	0.82±0.34	<0.001
Inpatient service				
Patient numbers	0.70±0.63	0.47±0.14	0.72±0.27	<0.001
Revenue	0.66±0.68	0.50±0.17	0.60±0.24	0.001
Total surgical volumes	0.72±0.67	0.46±0.14	0.73±0.30	<0.001

nostic test accuracy of the Glasgow Prognostic Score (GPS) as a prognostic factor for renal cell carcinoma (RCC).

Materials and Methods: Studies were retrieved from PubMed, Cochrane, and EMBASE databases and we performed comprehensive searches to identify studies that evaluated the prognostic impact of pre-treatment GPS in RCC patients. We assessed sensitivity, specificity, summary receiver operating characteristic curve (SROC) and area under the curve (AUC).

Results: Totally, studies were searched under the pre-specified criteria and 8 studies with a total of 1,191 patients were included to evaluate the prognostic impact of GPS in RCC finally. They indicated a pooled sensitivity of 0.785 (0.705-0.848), specificity of 0.782 (0.656-0.871), diagnostic odds ratio (DOR) of 13.089 (7.168-23.899) and AUC of 0.83 (0.79-0.86). Heterogeneity was significant and meta-regression revealed that presence of metastasis was might be the potential source of heterogeneity. Subgroup analysis also demonstrated that presence of metastasis might be the source of heterogeneity.

Conclusion: GPS demonstrated a good diagnostic accuracy as a prognostic factor for RCC and especially in case of non-metastatic RCC.

UP-301

Pilot Study Assessing the Utility of a Novel Uro-Oncology Android Phone Application in the Outpatient Setting

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Introduction and Objective: Uro-oncology follow up has been standardised according to guidelines from international associations such as the European Association of Urology (EAU) and the American Urological Association (AUA). Adherence to guidelines is the standard of care, however in our busy urology outpatient clinics, compliance may be an issue. We created our own android phone application with easy access to a summary of current uro-oncology surveillance recommendations according to the EAU 2018 guidelines. In our pilot study, we assessed the utility of this phone application in the outpatient setting.

Materials and Methods: From January to February 2019, 13 junior doctors at Tan Tock Seng Hospital, Singapore, were encouraged to download an android application which contained the 2018 EAU oncology guidelines surveillance protocols. It was utilised in the outpatient clinics when consulting uro-oncology patients. At the end of the study period, they were given a questionnaire to assess, using a 10-point scale, their knowledge of current EAU oncology surveillance protocols, according to the guidelines, and their confidence of adherence to the guidelines, before and after using the application.

Results: Six doctors managed to utilise the application. The others were non-android phone users. Student Paired T test was calculated. There was a significant improvement in knowledge of the current EAU uro-oncology guidelines ($p \leq 0.01$) and confidence in adhering to uro-oncology surveillance protocols ($p= 0.04$) after using the application. The application was rated as useful, and all the doctors who utilised the application would recommend it to fellow junior doctors in Urology.

Conclusion: Ideally, surveillance of oncological cases should adhere to standardised guidelines. However, certain cases may be unique and follow up plans may be at the discretion of the physician. Nevertheless, clinicians should cultivate their clinical decisions based on guidelines. Our android application has been shown to improve knowledge and confidence regarding adherence to current guidelines. Further work to improve our phone application is in process.

UP-302

Perceived Sources and Consequences of Intraoperative Stress: A Qualitative Study

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Introduction and Objective: Surgical adverse events persist in U.S. hospitals despite extensive improvement efforts. Little attention has been paid to the emotional and behavioral responses to stressors that may influence intraoperative individual and team performance. This study aims to describe surgical team members' perspectives on the causes of intraoperative stress and their impact on performance and team dynamics. A secondary aim is to assess the concordance with the surgical stress effects (SSE) conceptual framework.

Materials and Methods: We recruited participants from surgical team roles (surgeons, nurses, scrubs, anesthesia providers) in one large Midwestern VA and conducted semi-structured individual interviews. We elicited narratives of stressful intraoperative situations involving near misses or adverse events to explore factors and behaviors that influence intraoperative individual and team performance. Two coders inductively identified initial codes from transcripts in Nvivo (version 11). Codes were compared and discrepancies adjudicated. We then ran queries exploring codes to identify themes. Finally, we compared the SSE conceptual framework with these themes to assess how well the SSE predicts team dynamics and performance during high stress intraoperative situations.

Results: We conducted 28 interviews. Results indicate that stress is ubiquitous during surgery, especially from difficult anatomy, equipment issues, and assistant incompetence. The salience of particular stressors varies by role. Emotional and behavioral reactions to stress vary, tending to be negative. Frustration and anger were the most commonly mentioned emotions in these scenarios, followed by fear and anxiety. Negative behavioral reactions to stressors (usually by surgeons) not only upset and distracted other staff, but often led to silence and perceived decrease in psychological safety, reduced communication, and negative patient outcomes. The negative impact of surgeon behavior on team dynamics was perceived to be greater than other roles. The sources and consequences of intraoperative stress described by our cohort are consistent with the existing SSE framework.

Conclusion: This qualitative study describes various causes and consequences of intraoperative stress. Subjective experiences of surgical team members are consistent with the existing surgical stress effects (SSE) conceptual framework and additionally suggest that interventions targeting surgeon behavior (or reducing stressors surgeons perceive as important) have the greatest potential to improve team performance and patient outcomes.

UP-303

Predictors for Abnormal Male Bone Density Associated with Low Testosterone Level

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Introduction and Objective: Testosterone deficiency is a known risk factor for osteopenia and osteoporosis in elderly men. The aim of this study is to investigate the relationship between low testosterone level and male bone density.

Materials and Methods: We retrospectively reviewed all male patients who underwent bone density measurement by DEXA scan in the period from September 2016 to September 2018 including patients who had pre-scan testosterone, FSH, LH, estrogen, and vitamin D level. Patients with parathyroid dysfunction, renal dysfunction, or those receiving androgen deprivation therapy were excluded. We studied the group of patients who had a testosterone level below 15 nmol/L. Data were analyzed using appropriate statistical tests and SPSS package, version 20. The analysis included factors that may affect bone density.

Results: Out of the 715 patients who underwent bone density measurement, 85 met the inclusion criteria. The mean age of these 85 patients was 50.08 ± 19.2, the mean testosterone level was 8.8 nmol/L, FSH level 14.4, LH 8.5, estrogen level 117.3, and the mean vitamin D level 59.3. Of the 85 patients, 51 (60%) had normal bone density, while 34 (40%) had low bone density or osteoporosis or osteopenia. On multivariate analysis, testosterone level, estrogen level, FSH and LH had no statistically significant impact on bone density (p 0.767, 0.350, 0.364, 0.564, respectively). Factors that were found to affect bone density were the age and vitamin D level ($p <0.001$).

Conclusion: Bone density as assessed by DEXA scan is mainly affected by the age and vitamin D level. The variations in testosterone level and other related hormones have no effect on bone density. However, further study using tubercular bone function is needed.

UP-304

Cystoscopic Removal of Misplaced Intrauterine Device in the Bladder

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Introduction and Objective: Intrauterine devices are one of most popular, cheap and reversible contraception methods, but in rare cases they can cause uterine perforation. The mechanism is unknown, but there are underlying risk factors such as congenital anomalies, infections, and history of abortion. The aim of this study is to report on a unique case of misplaced

intrauterine device in the urinary bladder, which was removed and treated endoscopically.

Case report: A 35-year old lady, mother for 3 kids underwent placement of intrauterine device (IUCD) for birth control in the office 4 Months prior to her presentation. She presented with lower abdominal pain, and recurrent urinary tract infection (UTI). On CT scan, she was found to have misplaced IUCD in the urinary bladder. After starting IV antibiotics, she underwent cystoscopy, which revealed a Copper T 380A (IUCD) penetrating the posterior bladder wall with redness and edema around its exit point in the bladder with no other bladder pathology. The Device was grasped and delivered to urinary bladder lumen without any resistance at exit point then extracted completely with its thread. The urinary bladder defect was fulgurated, and patient was kept on urinary catheter. Follow up cystogram after one week showed normal study and the catheter was then removed.

Conclusion: Endoscopic management of misplaced intrauterine device (IUCD) is feasible endoscopically in similar situations. Recurrent cystitis and lower abdominal pain can be the presenting symptoms of misplaced IUCD in the urinary bladder.

UP-305

Predicting Patient Anxiety During Flexible Cystoscopy: A Single Tertiary Hospital Experience

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Introduction and Objective: It is well documented that a flexible cystoscopy performed under local anaesthetic can provoke anxiety. The objective of this study was to provide a better understanding of the patient, procedural and pathological factors that contribute to anxiety during a flexible cystoscopy.

Materials and Methods: Patients enrolled for a flexible cystoscopy at Royal Hobart Hospital were prospectively asked to complete a standardized questionnaire. One male doctor performed flexible cystoscopies under local anaesthetic in an outpatient setting. Data collection included patient demographics, medical history, preference for surgical gowning and gender of medical personnel present. Univariate statistical analysis and ANOVA testing was conducted using Microsoft Excel with p values <0.05 considered statistically significant.

Results: 70 males and 35 females (n = 105) completed the questionnaire. Throughout the cohort overall anxiety levels were decreased after the procedure (pre cystoscopy 3.05 vs. post cystoscopy 1.69, p <0.05). ANOVA analysis showed anxiety scores to be highest amongst those aged 40-70, lowest amongst those > 70 years and patients <40 years showed the greatest decrease in anxiety scores. Patients who had a preference for the gender of medical staff present had overall higher levels anxiety before and after the procedure compared to the rest of the cohort (pre cystoscopy 4.64 vs. 2.81, p <0.05 and post cystoscopy 2.92 vs. 1.49, p<0.05). Patients with pre-existing mental health burden had higher pre-cystoscopy anxiety scores (4 vs. 2.63, p<0.05). Level of education, income, rurality, religious affiliation, drug and alcohol dependency did not have a significant impact on patient anxiety. Indication for cystoscopy, number of previous cystoscopies and operative gowning preferences did not impact anxiety levels significantly.

Conclusion: From this cohort, the overall anxiety burden during a flexible cystoscopy remains low, however patients with pre-existing mental health conditions, those with a gender preference for their urologist (male or female) and those aged between 40-70 are likely to have higher anxiety levels. Interestingly, the cohort data also reflects that conventional socio-economic determinants including patient gender as well as indication and frequency of cystoscopy surveillance do not significantly affect pre and post procedure anxiety scores.

UP-306

Stabilization of GFR in Hypogonadal Men Receiving Long-Term Treatment with Testosterone Compared to a Hypogonadal Control Group for up to 7 Years of Observation

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Introduction and Objective: Hypogonadism was added to the 2018 AUA Guidelines with 31 Statements, none of which mentioned kidney function. In an ongoing registry study in a single urology practice, we monitored treated and untreated hypogonadal men and continuously calculated GFR.

Materials and Methods: We report data from 776 men with symptomatic hypogonadism participating in our registry study started in 2004. 400 men received testosterone undecanoate (TU) injections 1000 mg/12 weeks following an initial 6-week interval (T-group), 376 opted against TTh serving as controls (CTRL). Longitudinal changes of GFR and T-levels were compared between the two groups. Mixed effect model with a random intercept and fixed effects including testosterone, time, age at entry, baseline BMI, waist circumference, blood pressure, fasting glucose, lipids and quality of life was fit to the data among controls only to investigate the natural association between GFR and T-levels. GFR was calculated using the Modification of Diet in Renal Disease (MDRD) formula.

Results: Mean follow-up: 84 months. Age at study entry was 57.7±7.4 years in T-group and 63.9±4.7 years in CTRL. Testosterone levels at baseline were 9.7 nmol/L in both groups (p=0.841). Systolic blood pressure decreased from 152±17 to 131±5 mmHg (T-group) and increased from 142±14 to 148±15 mmHg (CTRL). As compared to the control group, which experienced a more rapid decline in both T-levels and GFR, those measurements in the T-group remained relatively stable over time. The mixed-effect model showed that for one nmol/L increase in serum T-levels, the GFR increases by 0.308 ml/min/1.73 m2 (p=0.005), after adjusting for confounders. During observation, there were 16 deaths (3.9%) in the T-group. In CTRL, there were 74 deaths (18.8%), 70 MIs (17.8%) and 59 strokes (15%).

Conclusion: Long-term testosterone therapy in hypogonadal men may stabilize GFR despite advancing age. In an untreated control group, GFR deteriorated.

UP-307

An Audit of Hospital Admissions for Haematuria Secondary to Pelvic Radiotherapy

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Introduction and Objective: Haemorrhagic cystitis is one of the complications associated with pelvic radiotherapy. It can be associated with significant patient morbidity and mortality, resulting in multiple presentations to hospital and subsequent burden to the healthcare system. This study aims to establish the incidence of radiotherapy exposure in admissions for haematuria and characterise its significance.

Materials and Methods: We conducted a retrospective audit of patients admitted between 30/10/2017 and 30/10/2018 to the Urology department at The Canberra Hospital with haematuria. Patients were identified through the electronic medical record system with a primary diagnosis of "haematuria", "clot retention" or "radiation cystitis". Patients meeting the inclusion criteria were collected consecutively from the electronic Clinical Record Information System (CRIS). Patients directly transferred from other hospitals or left against medical advice were excluded due to incomplete data.

Results: A total of 128 admissions were included in the study- 84 (65.6%) elective and 44 (34.3%) from the emergency department. 21 of the admissions (16.4%) had documented history of previous radiotherapy, with the majority for treatment of prostate cancer (16), followed by bladder cancer (3), endometrial (1) and colorectal (1). Admissions via ED were associated with higher odds of having previous exposure of radiotherapy (13/44) compared to elective. Additionally, patients with history of radiotherapy were more likely to have multiple presentations to hospital for haematuria, with 5/14 (35.7%) of radiotherapy-exposed patients admitted 2 or more times within the study period. This is in contrast to 5/100 patients with no radiotherapy history. The average duration was also higher in patients with a history of radiotherapy exposure (6.7 vs 1.2 days, p= 0.05).

Conclusion: This study confirms that radiation cystitis is a common complication of pelvic radiotherapy, associated with recurrent presentations to the emergency department with haematuria. This may have implications for deciding between radiation vs surgical management of pelvic malignancies, particularly for prostate cancer. Additionally, due to the higher re-admission rates, patients with radiation cystitis may benefit from more aggressive early treatment with intra-vesical agents, cysto-diathermy or in severe cases conduit diversion.

UP-308

A Novel Urinary Catheter for Use in Haematuria

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Introduction and Objective: A common problem is a patient on a standard Foley catheter who develops gross haematuria and clot retention. A manual bladder washout using a syringe and sterile water often cannot be performed satisfactorily through this existing foley catheter as the excessive negative pressure applied to evacuate clots often results in catheter wall collapse. We have designed a new rubber catheter with a unique balloon insufflation channel that runs in a spiral along the surface of the catheter. It is soft and atraumatic for easy insertion but when its balloon is insufflated the catheter walls become turgid allowing increased negative pressure before collapse.

Materials and Methods: Initial prototypes were made in 70-80 Fr sizes for proof of concept testing. The final prototype was 3D printed to a 20 Fr size using a rubber polymer. 8 catheter prototypes were subjected to suction pressure using a 150-cc nozzle syringe. Catheter tips were occluded (simulating blockage from a clot) and increasing negative pressure via suction from the syringe was applied. At the point of wall collapse, the volume of air within the syringe was recorded and this was then repeated again, with the balloon channel insufflated. We utilised Van der Waals equation to calculate the pressure that led to the wall collapse in mbar.

Results: 8 different catheter prototypes were tested, and the collapse pressures recorded (see table 1). In our final prototype, with the balloon channel insufflated, the catheter was able to withstand more than double the negative pressure before collapse.

Conclusion: We have shown that a catheter with its balloon port channels running in a spiral through its walls can increase its rigidity and defer the point of collapse when suctioning and negative pressure is applied. This would be specifically useful in the context of evacuating blood clots causing catheter obstruction.

UP.308, Table 1.

Prototype number	Collapse pressure at baseline (mbar)	Collapse pressure with water channel insufflated (mbar)
1	-14	-27
2	-15	-29
3	-15	-28
4	-14	-26
5	-15	-24
6	-16	-33
7	-15	-30
Final	-16	-34

UP-309

Limitations or Advantages? The Differences of Female and Male Urologists' Career in Taiwan

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Introduction and Objective: Urology is the field concerning the abnormalities of genital areas of human bodies, especially male patients. It is believed that female urologists have more limitations in career development because embarrassment of male patients and childbearing. In the present study, we try the reveal the differences of practice pattern of male and female urologist in Taiwan.

Materials and Methods: The 2000 Longitudinal Health Insurance Dataset (2000LHID) is one of the datasets of the National Health Insurance Research Database in Taiwan, including all the medical insurance information from one million randomly-selected residents in Taiwan. The claim data including the yearly inpatient and outpatient service volumes, total and major surgical volumes, revenues, and sex ratio of patients of each female and male attending urologists with practice more than five years between 1995 to 2013 were recruited. Student's t-test was used to compare the differences of these factors between female and male attending urologists. P <0.05 was viewed as statistically significant.

Results: One-hundred-and-eighty male (93.2%) and 13 female (6.8%) urologists were included. Their differences of their service and revenue were shown in Table 1. Female urologists had significantly more female patients than male urologists. Although they had similar volumes of outpatient service, the yearly revenue attributed to female urologists was significantly less. On the other hand, there is no differences when it comes to inpatient service or yearly surgical volumes.

Conclusion: Female patients are prone to visit a female urologist in Taiwan. There are minor limitations of female urologists in outpatient services, representing as less yearly outpatient revenue, but not in inpatient care and surgery. Efforts should be done to improve the gender inequality in the field of urology.

UP.309, Table 1.

	Female urologists	Male urologists	P value
Outpatient service			
Patient numbers	122.4±52.4	147.2±30.6	0.116
Patients' sex ratio	0.6±0.09	0.73±0.01	<0.001
Revenue	193886.78±100644.63	266631.17±51786.51	0.023
Inpatient service			
Patient numbers	3.4±2.9	4.8±1.2	0.108
Patients' sex ratio	0.56±0.14	0.73±0.03	0.001
Total surgical volumes	3.01±2.70	4.18±1.05	0.145
Major surgical volumes	1.42±1.72	1.74±0.62	0.513
Revenue	113175.56±116080.30	171062.26±38791.91	0.098
Total revenue	307062.34 ± 209995.23	437693.43± 86278.88	0.045

UP-310

Quality of Life (QOL) Evaluations Following Percutaneous Nephrostomy as a Treatment for Ureteral Obstruction in Malignancy Case

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Introduction and Objective: The dilemma regarding percutaneous nephrostomy is about patient quality of life (QOL) and advantages of this procedure in improving kidney function in patient with uropathy obstructive due to malignancy. This study was made to evaluate patient QOL who underwent percutaneous nephrostomy as the treatment for ureteral obstruction in malignancy case in Dharmais National Cancer Hospital Jakarta, as the main referral cancer hospital in Indonesia.

Materials and Methods: We selected 33 patients who underwent percutaneous nephrostomy during January 2019 - March 2019. Patient quality of life was then evaluated by using Quality of Life-C30 (EORTC QLQ-C30) questionnaire before and 1 month after nephrostomy procedure. Variables described in this study includes gender, age, quality of life, hemodialysis after nephrostomy, and complication after procedures.

Results: From 33 patients, we evaluated 24 female patients (72.7%) and 9 male patients (27.3%), aged between 29-62 years old (mean 51.39±86). Most of the malignancies found were gynecology, 22 case (66.6%), following by urinary tract malignancies, 8 case (24.3%) and 3 digestive case (9.1%). Quality of Life (QOL) scoring in patients with digestive cancer before nephrostomy was 87-103 points, 74-100 points for gynecology cancer, and 75-100 points for urinary tract (bladder) cancer. In one month's follow up, Quality of life score in patients were improved in digestive, gynecology, and urinary tract malignancies (87-101, 73-104, 70-90) respectively. About 18 patients underwent hemodialysis around 1-3 times a week before nephrostomy. After nephrostomy, 23 patients (69.7%) showed improvement in kidney function, proven by reduced frequency of hemodialysis after nephrostomy procedure. Complication that mostly found in

nephrostomy insertion were dislodged and reinsertion (4 case, 12.1%). About 3 patients (9.1%) came to repair the fixation. Two patients (6%) died before 1 month's follow-up due to sepsis and coagulopathy problems.

Conclusion: Nephrostomy might be chosen as the treatment for uropathy obstructive due to malignancy. Despite the change in patient quality of life was insignificant, it does show improvement in patient kidney function.

UP-311

Anticoagulants (AC) and Antiplatelets (AP) Use by Patients Undergoing Urological Procedures

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Introduction and Objective: Urologists are often presented with patients managed by oral AC and oral AP drugs recommended for prevention of recurrent events related to coronary artery disease, cerebrovascular accidents and peripheral artery disease as well as for primary prevention of cardiovascular disease. Data on the use of oral AC and AP therapy amongst patients undergoing urological procedures are lacking. We investigated the prevalence of AC/AP use in these patients in relation to their estimated thrombotic risk.

Materials and Methods: We studied a cohort of 450 patients (81.5% men, age 64.1 ±15.7 years) hospitalized for emergency or elective urologic surgery between February and April 2018. Records of prescriptions and indications for AC/AC use were obtained during admittance. Risk of venous thromboembolism (VTE) was calculated according to recent EAU recommendations.

Results: The vast majority (89.5%) of the cohort was hospitalized for elective surgical procedures Almost a quarter of them (23.6%) were receiving anticoagulants; 87.8% of them were on single AP therapy. Patients' risk of VTE was low (no risk factors) in 313 (69.6%), medium (any of the following: age ≥ 75 years, body mass index ≥ 35 Kg/m2, VTE in first degree relative) in 134 (29.8%), and high (prior VTE or any combination of three or more risk factors) in 3 (0.7%). Half of the already anticoagulated patients had no risk factors of VTE while the other half had medium risk.

Conclusion: Urologists should familiarize with estimation of baseline risk of VTE. Managing patients who are already anticoagulated is challenging; carrying out randomized clinical trials is difficult; therefore, recommendations can only be based on credible observational studies of procedure-specific risks. Urologists should also be familiar with the stipulated time period needed to elapse for performing a certain procedure after stopping an anticoagulant as well as with the bridging therapy protocols.

UP-312

Deep Infiltrating Endometriosis Affecting the Urinary Tract. Disease Management at a High-Volume Center

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Introduction and Objective: Deep infiltrating endometriosis (DIE) affecting the urinary tract is a rare condition. Its presence augments the complexity of DIE, making difficult the surgical treatment, and if misdiagnosed can lead to irreversible loss of renal function. We describe our experience in the management of this condition.

Materials and Methods: Retrospective study analysing the cases of DIE affecting the urinary tract treated in our center between 2006-2018. Preoperative data recorded include age, serum creatinine, renogram and imaging studies performed. We analyzed the location of DIE, surgical approach, and the type of intervention. Complications related to treatment were also recorded according to the Clavien-Dindo classification.

Results: From 255 patients with DIE, 47 (18%) presented urinary tract involvement. The most frequent site was the left ureter (23 cases, 9%), followed by the right ureter (21, 8%) and the bladder (13, 5%). Median age at the time of surgery was 37 years (22-54). Median creatinine value was 0.8 mg/dL (0.4-1.6), only 3 patients had impaired renal function (6.25%). Renogram was performed in 18 patients (37.5%) and 14 of them showed renal impairment. Main imaging technique used for diagnosis was MRI (73%) followed by ultrasound (71%), and 71% of the patients had 2 or more imaging tests documented. Median hospital stay was 8.5 days (3-42). Laparoscopy was the main surgical approach (83%), needing to turn into open surgery in two cases. Interventions performed included 25 ureterolysis (53%), 9 ureteral reimplantations (19%) and 13 partial cystectomies (28%). Direct ureteral reimplantation technique was more performed than the psoas hitch technique (6 vs. 3). Nephrectomy was performed in two cases. A total of 16 complications were documented, six of them Clavien 3, and four Clavien 4.

Conclusion: Urinary tract impairment due to DIE is a rare condition. Collaboration between Gynecology and Urology departments is of high importance for optimizing the diagnosis and treatment of these patients, in order to preserve good renal function.

UP-313

Is Twitter Just Social? The Use of Twitter at Urological Conferences: 2017-2018

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Introduction and Objective: The use of Twitter® has been largely encouraged at Urological conferences; including asking delegates their 'Twitter handle' at registration. Some value it as a method of education and networking, others view as social media platform. However, there have been controversies; including photographs taken at conferences and then disseminated on Twitter which can breach intellectual property rights and/or patient confidentiality. Our aim is to better understand the evolving content of photographs shared via Twitter during urological conferences.

Materials and Methods: The 'top Tweets' of Urological conferences were compared using respective hashtags: #AUA18, #BAUS18, #EAU18, #WCE18. The inclusion of photograph(s) and content was analysed according to predefined categories of presentation slides, clinical, research, speaker, social and industry. Results were compared to previous work analysing tweets: #BAUS17, #EAU17, #WCE17.

Results: The majority of tweets analysed contained photographs; the proportion of tweets containing text-only was 12-35% in 2017 and 14-26% in 2018. 4 videos of conference presentations were tweeted in 2018. Photographs containing presentation slides were the most common in 2017: 21-33%. In 2018 social themed photographs were the most common at #AUA18 and #WCE18, and pictures of presenters at #BAUS18 and #EAU18 (see table). 'Research' related photographs made up 6-7% of tweets in 2017 compared to 8-20% in 2018. 'Clinical' tweets (including radiological or operative photos) has increased from 1-4% in 2017 to 0-8%; furthermore, there were 4 tweets that were analysed as containing 'sensitive content' (2018). Overall non-academic tweets (excluding industry) accounted for 42-53% in 2018 and 13-29% in 2017. 'Industry' tweets were analysed in 2018 only: 10-20%.

Conclusion: There is a predominance of 'social' tweets sent at Urological conferences, but there is also ongoing dissemination of photographs containing presentation slides, research findings and confidential

UP.313, Table 1.

	#AUA18	#BAUS18	#EAU18	#WCE18
Presentation slides / posters	12 (10%)	17 (19%)	19 (23%)	21 (24%)
Research (including graphs/ tables)	20 (16%)	7 (8%)	16 (20%)	9 (10%)
Clinical à(including operative/ radiography pictures)	3 (2%)	0	6 (7%)	7 (8%)
Picture of presenter	26 (21%)	27 (30%)	12 (20%)	14 (16%)
Industry	25 (20%)	18 (20%)	8 (10%)	15 (17%)
Social	38 (31%)	22 (24%)	20 (25%)	23 (26%)

patient data. Guidance is suggested to ensure 'fair use' of sharing photos via social media at conferences.

UP-314

Bone-Anchored Penile Implants in Transgender Men After Phalloplasty

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Introduction and Objective: Penile prostheses in transgender males have unique challenges. Given the high rate of prosthesis revision and explantation in this population, we have been using removable bone-anchors for proximal fixation to facilitate removal of hardware in case of explantation. We describe bone-anchored penile prosthesis placement in transgender males as an alternative technique.

Materials and Methods: Retrospective study analyzing patient characteristics and outcomes. Descriptive statistics used to define study population and results. Operative techniques outlined in detail.

Results: 19 implants were placed in 15 patients using a bone-anchored technique from February 2015 to January 2019. Mean age was 34.8 ± 9.6. There were no patients with diabetes mellitus; although none were active smokers, 40% of patients had a smoking history. Most patients had a radial forearm free flap phalloplasty. Five patients had undergone prior penile prosthesis placement. A total of 11 inflatable and 8 malleable implants were placed. Surgery was performed through a 3 cm incision lateral to the neoscrotum, contralateral to the vascular pedicle of the neophallus. The distal tip of the cylinder was capped with a 2 cm long piece of hernia mesh or alloderm. The proximal tip was secured to the pubic rami using Twinfix Titanium (Smith&Nephew) bone anchors. Sutures attached to the bone anchors are sutured to the rear-tip extender to prevent device migration. Mean OR time was 280 ± 91 minutes. Postoperatively, there were complications in 13 cases. There was a 21% infection rate, 26% revision rate and 26% explantation rate for erosion. During explantation, the bone anchors could be identified and removed. Mean follow-up was 340 ± 440 days.

Conclusion: Our overall complication rate is comparable to contemporary studies for penile implants in a neophallus. The use of bone anchors is an alternative technique for penile prosthesis placement after phalloplasty.

UP.314, Table 1: Surgical History and Outcomes.

Phalloplasty type	Radial Forearm	93%
	Anterolateral thigh	7%
Prior genitourinary procedures	Glansplasty	37%
	Urethral procedure	74%
	Testicular prosthesis	10.5%
	Prior penile implant	26%
Implant type	Inflatable penile prosthesis (IPP)	58%
	Malleable penile prosthesis (MPP)	42%
Implant size	median = 18cm (12-22)	
Number of bone anchors used	1	5%
	2	42%
	3	53%
Reservoir location (IPP only, n=11)	Space of Retzius	73%
	Subrectus location	18%
	Ectopic location	9%
Concomitant genitourinary surgery	Fat graft to neoscrotum	5%
	Testicular prosthesis	42%
	Urethral procedure	16%
	Fat graft to neophallus	5%
	Glansplasty	5%
Operation time (minutes)	280 ± 91 minutes	
Intraoperative Complications	0 (# patients)	
Postoperative complications	Infection	21%
	Revision	26%
	Explantation	26%
Follow-up	340 ± 440 days	

UP-315

Socio-Economical Burden on Health Care System Due to Delaying Surgically Active Renal Stone Management: Survey Based Analysis of Tertiary Care Centre.

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Introduction and Objective: Symptoms that are not bothersome and subtle are ignored by patients many a times. Renal stone are presented many times with mild symptoms. Sometimes patients were diagnosed with stone on imagine but they are not seeking for management as symptoms are not bothersome. Lack of awareness to renal health can lead to delaying the management. We have analysed the socio-economical burden on health care system due to delaying the stone management.

Material and Methods: After institutional ethical and scientific committee approval prospective analytic study was conducted from January 2018 to January 2019. All the patients who were admitted for their stone management were asked about predefined sets of questions regarding their stone disease symptoms and their previous reports were noted in data sheet. Cases were considered as delayed management if there is a gap of > 8 weeks between diagnosis of surgically active stone and its management.

Results: Out of 1000 patients we had reviewed 67% had delaying their stone management. Average delaying time was 5 months. 78% patients had consulted multiple urologist for their symptoms. 54% had multiple radiological investigations. 13% were presented to emergency at least once in their delaying period and 27% had more than 1 course of antibiotics during their delaying period. 29% had increase stone size or number, 4% needed nephrectomy and 9% had any form of complications due to delaying the management. Average economical lost per patient was 12000 – 15000 INR.

Conclusion: Delaying the stone management of surgically active stone for >8 weeks increase socio-economical burden to health care system of developing countries. As a health care provider, it is also our duty to provide awareness to the society regarding their renal health.

UP-316

Cancellation of Planned Surgery in a Tertiary Hospital in the United Kingdom

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Introduction and Objective: Operating theatres require high cost and resources to maintain and run smoothly yet provide a main source of income for hospitals. The cancellation of elective cases not only results in loss of income but also negatively affects patient experience. We report on reasons for elective theatre cancellation in a major trauma centre in England.

Materials and Methods: Retrospective analysis of cancellations and their reasons for a period of one month was performed using data collected through the Trust's annual report as well as Performance and Programme Management office. Qualitative data

analysis of semi-structured interviews with surgeons, anaesthetists, theatre managers, admissions unit and recovery unit staff was conducted to supplement the retrospective analysis.

Results: A total of 453 cancellations were recorded across all surgical specialities. Eighty-four cancellations were urology cases, representing an estimated loss of ≤26,928 in earnings. Across the specialities the most common category for cancellation was a 'non-clinical hospital related' reason (37.5%) followed by a 'clinical hospital related' reason (29.8%), 'patient related' reason (27.2%) and 'other' reason (5.5%). Interview data analysis highlighted that some causes for cancellations may not be accurately represented due to limitations with cancellation reporting.

Conclusion: Cancellation of theatre cases is a result of both modifiable and non-modifiable causes. Mismatch between the available staff as well as resources to accommodate the volume of operations listed appears to be central to many modifiable causes. Novel improvements in efficiency of patient flow through theatres must be implemented to avoid cancellations – examples of this being staggered working patterns to maximise use of resources.

UP-317

Factors for Clinical Coding Errors in a Single Centre Urology Department in the United Kingdom

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Introduction and Objective: Clinical coding is important for income, policy making also research in healthcare. Remuneration of National Health Service (NHS) trusts has greatly depended on accurate coding of care provided to its patients. We examine the accuracy of coding and the factors that influence this within a single centre urology department in England.

Materials and Methods: Retrospective review of completed consultant episodes for Endourology over a 30-day period was performed with a clinical coding manager. Any coding errors or deficiencies were revised to populate correct healthcare resource group codes. Further qualitative analysis was conducted using semi-structured interviews of clinicians and coders as well as non-participant observation of the coding process. Thematic analysis of the interviews and observations was performed to identify factors for coding errors.

Results: A total of 49 completed consultant episodes were identified in the specified period. Inaccuracies were identified in 40.8% of episodes. Of these inaccurately coded episodes, 80% resulted in reduced income while the remaining 20% made no change to income. Once correctly coded, an increase income of ≤17,226 was generated. Analysis of interviews and observations highlighted several factors, which contribute to coding errors. Chiefly among these include limited clinical knowledge by coders, clinicians' limited understanding of the coding process, time constraints and lack of engagement between clinicians and coders.

Conclusion: The cause of clinical coding errors is multi-factorial and implicates both clinicians and coders. We recommend changes that could improve the coding process to accurately represent services provided by the urology department.

UP-318

Ileal Conduit with or without Cystectomy for Benign Bladder Conditions: A Comparative Study

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Introduction and Objective: Ileal conduit for benign bladder conditions is last resort in cases of intractable lower urinary tract conditions. There has been a debate on how to manage the bladder at the same time. Diversion without a cystectomy may result in pyocystis, bladder spams or possibility of a malignancy. However, cystectomy can increase the operative time and morbidity of the procedure. The decision can be difficult as these patients are seldom encountered in day-to-day practice.

Materials and Methods: From January 2014 to December 2017, 18 patients underwent urinary diversion in the form of an ileal conduit for benign disease. 7 underwent cystectomy and 11 had bladder preservation. We retrospectively compared the demographics, comorbid illness and primary indication for surgery. Primary outcome measures were length of hospital stay, mortality and complications – highest Clavien grade complication at POD 30 (early), and 90 (late).

Results: Indications for ileal conduit were - neurogenic bladder (5), radiation cystitis (4), complex vesico-vaginal fistula (3), recto-urethral fistula (1), genitourinary tuberculosis (4), exstrophy bladder (1). Important results are tabulated in the table given

Conclusion: Although associated with a high risk of perioperative complications, urinary diversion in the form of ileal conduit might offer these patients their only chance at relief from their debilitating urological conditions. Predicting feasibility of cystectomy in patients requiring urinary diversion remains a perioperative decision, subject to patients' comorbidities, and intraoperative feasibility of dissection in the pelvis. It is imperative that patients be individually counselled regarding the anticipated risks and benefits of undergoing cystectomy versus not undergoing it at the time of diversion.

UP-319

Urology One Stop Clinic: Sustainability and Feasibility

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Introduction and Objective: The one-stop clinic (OSC) was devised to improve the efficiency of outpatient urology services by streamlining investigations. The concept facilitates consultation, investigation and management plan in a single appointment, with the aim to improve patient experience by reducing the

UP.318, Table 1.

	Patients without cystectomy (11)	Patients with cystectomy (7)
Age (median, range)	38 (19–65)	41 (18–62)
No. of females	9	5
Mean Charleson Comorbidity index (CCI)	5.4+/-1.3	3.8+/-1.9
No.of patients with chronic kidney disease	4	0

The decision to avoid a cystectomy depended upon the preoperative comorbidity status and ECOG score. Those with a higher score (≥2) tended to not undergo cystectomy inorder to reduce operative time and blood loss.

Cystectomy was avoided in the patients with "frozen pelvis" as seen in patients with genitourinary tuberculosis, radiation cystitis with fistula and previously operated vesicovaginal fistula.

Mean operating time (hours)	1.86 +/- 0.45	3.78 +/- 0.75	P <0.05
Mean blood loss (ml)	370 +/- 210	940 +/- 440	P<0.05
Postoperative stay (days)	8 +/-4.5	10.3 +/- 4.3	p = 0.16
Complications			
No. of patients with Clavien dindo Grade II or higher at 30 days	5	5	
Mortality	1	1	
Clavien Dindo ≥ II at 90 days	3	0	p <0.05

Problems related to the retained bladder (assessed at 90 days)

Complication	Number of patients
Bladder spasms	3
Pyocystis	2

number of attendances and delays in communication of results. To evaluate the sustainability of this service, the efficacy of the OSCs were assessed immediately after initiation of the service (2011), and at 3 and 7 years to assess ongoing use of resources and patient outcomes.

Materials and Methods: Clinic data were analyzed for all OSC appointments (405) over a period of 1 month. In-depth clinic activity data was recorded for one weeks' attendances (101) including presenting complaint, investigations performed and clinical outcomes. Patient satisfaction questionnaire results were analyzed. Results were compared to our previous analyses of OSC.

Results: There were 13 OSCs over the month assessed. DNA rate 2.27%. Average wait between referral and appointment was 7.9 weeks. Average number of admin letters generated was 1.3/patient. 58.4% of patients had investigations performed on the day compared to 52.6% in 2013. Average patient satisfaction score was 9.5/10 (n=104). 100% of patients reported they would recommend the OSC to a friend or family member.

Conclusion: The results suggest that the OSC is sustainable - our data compares favorably with previous analysis and the published literature. In a climate of limited resources, the OSC approach is efficient and we have maintained a high-quality service with excellent patient satisfaction.

UP.319, Table 1. Reason for referral to OSC.

Primary presenting complaint (n=101)	
Haematuria	n=25 (24.7%)
LUTS	n=21 (20.7%)
Recurrent UTI	n=11 (10.8%)
Raised PSA	n=11 (10.8%)
Scrotal/Penile condition	n=16 (16%)

UP-320

Calcium Peroxide-Loaded Hollow Mesoporous Silica Nanoparticles Coating Polyacrylic Acid as an Anti-Cancer Agent for Tumor-selective Reactive Oxygen Species Controlled-Release

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Introduction and Objective: In recent years, the nano drug delivery system with mesoporous silica as the carrier has overcome many flaws of traditional anti-tumor treatment, especially the mesoporous silica nanosystem for controlling reactive oxygen species (ROS) generation which has excellent tumor targeting property and biocompatibility, and minimal injury effects on normal tissues. Herein, we report a ROS controlled-release nanoplatform using hollow mesoporous silica nanoparticles (HMSNs) as carriers, loading calcium peroxide (CaO2) in the channels and cavity of HMSNs and coating polyacrylic acid (PAA) on the functional materials (CaO2@HMSNs-PAA). CaO2@HMSNs-PAA could release more ROS in a simulated tumor acidic microenvironment (pH 6.5), which could provide efficient anti-tumor efficacy without obvious damage to normal tissues.

Materials and Methods: Structural morphology of the nanosystem was observed by transmission electron microscope. The preparation process was monitored using Fourier-transform infrared spectroscopy, zeta potential measurement, thermogravimetric analysis and nitrogen adsorption/desorption isotherm. CaO2 loading capacity and release profiles in different buffer solution were measured by inductively coupled plasma-optical emission spectrometry. In vitro drug delivery efficacy was evaluated on PC-3 prostate cancer cell line using confocal laser scanning microscopy. ROS produced by CaO2@HMSNs-PAA was detected by fluorescence microscopy and fluorescence spectroscopy. CCK-8 assay, scratch wound healing assay, transwell assay, and flow cytometry were used to evaluate *in vitro* anti-cancer effects including inhibition of proliferation, migration and invasion and promotion of apoptosis. In vivo biosafety and therapeutic experiments were carried out using BALB/c mice and BALB/c nude mice subcutaneously transplanted with PC-3 prostate cancer cells respectively.

Results: The experimental results evidently demonstrate that the developed nanocarrier could effectively deliver CaO2 to the tumor site and release them in response to the decreased pH of tumor microenvironment, resulting in improved anticancer efficacy both *in vitro* and *in vivo*. Moreover, this nanosystem caused no obvious damage to normal tissues according to the vivo experiments.

Conclusion: CaO^2@HMSNs-PAA could provide efficiently anticancer effects by controlled-releasing ROS under acidic tumor microenvironment, while simultaneously alleviating the adverse effects. The current study presents a promising integrated nanosystem toward effective and safe cancer treatment.

UP-321

Reducing the Hospital Stays for Hernia Surgery by Process Modification

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Introduction and Objective: Taiwan's national health insurance system aims to reduce unnecessary surgery, examination and medication. The leaders of hospitals try their best to reduce medical costs, such as promote clinical pathways, strengthen management mechanisms, improve medical care quality and efficiency, and reduce hospital stays. Even so, the patients can still satisfy with the content and quality of medical services. We try to adjust the hospitalization process in our urology department. The patients who will undergo hernioplasty come to the urological clinic. We complete the relevant examination before admission to the ward. This can reduce the unnecessary time after checking-in the ward for the surgery-related examination. The working hours of medical staffs also decrease. Completion of all the surgery-related examination in the outpatient clinic, hospitalization days could be shortened, and the turnover rate of the bed would be increased.

Materials and Methods: Since March 2017, we established a team, calculated the time of waiting for examination and surgery, and designed questionnaires for those who will receive hernioplasty in the urology department. We evaluate current situation. Then we separately develop improvement strategies and choose selected programs, such as: establish the standardization process before the operation of hernia surgery and simplify the computerization of the outpatient computer. The outpatient department completes the pre-operative examination preparation and consent form. Special urological outpatient nurses were arranged to teach and explain the inspection sequence and uses the QR code to clearly guide the examination room route.

Results: The completion rate of pre-operative examination in hernia surgery increased from 41.7% to 66.7%. The total waiting time from 783.2 minutes to 93.1 minutes. The number of hospital stays decreased from 3 days to 2 days. The waiting time for all examinations decreased, including 18.8 to 10 minutes for blood test, 12 to 7 minutes for the X-ray examination, 14 to 8 minutes for the ECG examination, 18 to 7 minutes for anesthesia visits. The overall satisfaction increased from 89.2 points to 98.1 points.

Conclusion: This project objectively improves all the various tasks for operation. With these obvious improvements, we promote the satisfaction and quality of medical care in patients who will receive hernioplasty in our hospital.

UP.319, Table 2. Patient outcome following OSC appointment compared to previous evaluation.

Patient outcome	2011	2013	2018
Discharged	19%	26.3%	40.6%
Added to list for theatre	21%	24%	22.8%

UP-322

Lack of Consensus in Uncommon Urethral Obstructions in Children: Results of the International Web Based Obscure (Obstruction to the Child Urethra) Study

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Introduction and Objective: Obstructive urethral lesions except posterior urethral valves (PUV) are uncommon in children and lack firm treatment algorithms. We report the findings of an international survey that examines the consistency of diagnosis,

prognosis and treatments in uncommon urethral lesions in children.

Materials and Methods: An ethics approved, online survey was administered to members of various international Urological societies. The survey included 22 questions including those on diagnosis (n=7), investigations (n=4), prognosis (n=2) and management (n=1) in children with uncommon posterior urethral obstructive lesions with two questions on PUV as embedded controls. The index cases involved children of various ages and presentations with circumferential narrowing in the posterior or bulbar urethra. Two sets of paired questions were offered with an increasing amount of information provided to see the effect of endoscopic appearances on urologists' decision making. Kappa estimates were developed for intra-rater and inter-rater concordance in these paired questions with additional clinical information. Gini indices were estimated for the majority of multiple-choice questions.

Results: 121 participants responded to the survey including members of ESPU (20); SAUA (18) and SPUNZA (13). 71% of respondents attested to seeing less than 5 cases of urethral obstructions other than PUV every year. The majority admitted to answering based on extrapolation rather than specific teaching. 75 (IQR 67-90) responses were received for each question. Moderate to high intra-rater concordance (kappa 0.4-0.6) was observed for paired questions with additional clinical information with only 7% of participants changing their answers (17/242). However, in the diagnostic group, the kappa estimate was low (0.17 95%CI 0.13, 0.21) suggesting a high inter-rater variability and 0.1 (95%CI 0.05, 0.15) between questions in the investigation group. Gini coefficient was lower for the diagnosis of uncommon urethral lesions (0.35) indicating a higher variability in responses compared to posterior urethral valve (0.51).

Conclusion: This international web-based survey identifies significant variability among paediatric urologists in dealing with cases of atypical posterior and bulbar urethral obstructive lesions. Participants' responses confirm a lack of reference resources and hence, the urgent need for firm guidelines.

UP-323

Cyclic Abdominal Pain in a Patient with Vaginal Agenesis

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Introduction and Objective: Vaginal agenesis is a very rare congenital anomaly, with an incidence of 1/4000 to 1/10000 women. Generally, patients with vaginal agenesis and functional endometrium present with primary amenorrhea and cyclic chronic abdominal pain related to hematometra.

Materials and Methods: A 14-year old girl was referred several times to the pediatric emergency department, complaining to the abdominal pain without menarche. Clinical and laboratory finding was normal. Further abdominal echotomographic examination revealed abdominal cystic mass positioned in the lower part of abdominal cavity. After magnetic resonance was performed, we discovered lower vaginal atresia with extremely distended proximal vagina, filled with blood, and with constriction at the level of the cervix. Any associated anomaly was not found, and uterus was normally developed. Explorative laparoscopy and vaginoplasty by using local skin flaps were performed.

Results: Follow-up was 22 months. Depth of vagina at the last examination was 10 cm. Excellent aesthetic outcome and good vaginal outlet were achieved. Moderate introital stenosis was treated with regular dilations and laser treatment.

Conclusion: Vaginal agenesis is a rare diagnosis but should be considered when dealing with adolescent girls with lower abdominal pain.

UP-324

Clitoral Disassembly in the Treatment of Congenital Adrenal Hyperplasia

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Introduction and Objective: The treatment of congenital adrenal hyperplasia (CAH) is multidisciplinary, and cooperation of a neonatologist, pediatric endocrinologist, pediatric urologist and pediatric psychologist is necessary for successful outcome. The aim of clitoral surgery is to achieve typical clitoral anatomy without compromised sensation and sexual pleasure in the future.

Materials and Methods: During ten-years period (March 2008-March 2018), 11 patients with CAH, aged from 1 to 12 years (mean 3.5 years), underwent reduction clitoroplasty together with urethroplasty and introitoplasty. Surgical treatment included complete disassembly of the clitoris into glans with neurovascular bundle and urethral plate and cavernosal bodies. Degloving of the clitoris begun with circumferential incision line about 1 cm under the corona level. Neurovascular bundle was dissected from the corpora cavernosa with caution to preserve its' structures. Glans cap was then separated from the tips of the cavernosal bodies, avoiding the injury of arteries. Maximal reduction of cavernosal bodies and glans reduction were performed, followed by glans reconstruction and reassembly of all entities, in order to attain characteristic clitoral morphology. It is very important to maximally reduce cavernosal bodies and prevent postoperative pain related to erection of cavernosal remnants.

Results: Follow-up ranged from 12 to 132 months (mean 54 months). A satisfying aesthetic outcome with normal appearance of the clitoral glans was achieved in all cases. Sensitivity of the reduced clitoris seemed preserved in all patients, but complete assessment was impossible due to the patients' age.

Conclusion: Clitoral disassembly followed by reduction clitoroplasty presents a good choice for clitoromegaly in patients with CAH. This approach leaves the neurovascular bundle intact and completely preserves the glans cap and urethral plate blood supply. It also prevents pain due to erection of cavernosal bodies' remnants during the arousal. Long-term follow-up and psychosexual assessment are necessary for evaluation of sensation and sexual function in these patients.

UP-325

Analysis of Uropathogens of Febrile Urinary Tract Infection in Infant and Relationship with Vesicoureteral Reflux

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Introduction and Objective: This study aimed to investigate the relationship between uropathogens of infants with febrile urinary tract infection (UTI) and vesicoureteral reflux (VUR).

Materials and Methods: We analyzed 308 infants who were hospitalized for febrile UTI and assessed voiding cystourethrography (VCUG) from January 2010 to December 2015. Medical records including clinical symptoms, laboratory findings, urinalysis, urine culture tests, ultrasound (US), dimercaptosuccinic acid scan, and VCUG were obtained in a retrospective manner. The incidences of VUR and high-grade VURs (III, IV, and V) were analyzed in 4 groups categorized by uropathogens and renal US findings.

Results: The mean age of the 308 infants was 3.29 ± 2.18 months. The male-to-female ratio was 3.46:1. In urine culture tests, 267 infants (86.69%) had single bacterial uropathogen: Escherichia coli (E. coli) as single uropathogen in 241 infants (78.25%) and uropathogens other than E. coli in 26 infants (8.44%). Multiple distinctive microorganisms were identified as causative uropathogens in 41 infants (13.31%). The abnormal findings of US KUB and VCUG were identified in 216 and 64 patients, respectively. In 308 infants, the incidences of VUR and high-grade VUR were not different among the 4 groups. In 239 male infants, the incidences of high-grade VUR were higher in patients with single uropathogen other than E. coli or multiple uropathogens and abnormal US findings (p= 0.042).

Conclusion: In male infants with non-E. coli uropathogen or multiple uropathogens and abnormal US findings at febrile UTI, high-grade VURs were more likely to be found on subsequent VCUG tests.

UP-326

Parental Satisfaction After Surgical Treatment of Concealed Penis

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Introduction and Objective: We conducted a parental survey to assess parental satisfaction with the surgical correction of concealed penis.

Materials and Methods: We reviewed 28 medical records of patients treated for concealed penis between October 2017 and June 2018. The parental survey was performed via paper interview after operation 3 months later. The questionnaire addressed the appearance and accessibility of the penis, hygiene care, severity of concealment, negative concerns about the appearance of the penis, and parent satisfaction. Pa-

rental satisfaction was also analyzed according to age, phimosis, and body mass index (BMI).

Results: The mean patient age and BMI was 71.1 ± 59.2 months (range 14 months to 15 years) and 20.1 ± 4.0 respectively. The mean preoperative stretched penile length and perpendicular penile length was 3.6 ± 1.1 cm and 1.8 ± 0.7 cm respectively. The mean operative time was 78.2 ± 18.3 minutes. Admission date was 3.2 ± 0.8 days. The mean postoperative stretched penile length was 3.6 ± 0.9 cm. Before surgery, 14/28 50.0% of parents complained of difficulty with hygiene care, 22/28 78.6% complained of a completely hidden penis, and 14/28 50.0% complained of negative feelings about the appearance of the penis. However, most of these complaints resolved after surgical correction. On the final interview, 85.7% of parents said there was improvement in the accessibility of the penis, 75.0% said there was improvement in the length of the penis, and 96.4% said they would recommend the surgery to another boy with the same problem. There were no significant differences in parental satisfaction with respect to age, phimosis, or BMI.

Conclusion: Our data demonstrate that most parents were satisfied with the surgical correction of concealed penis, regardless of patient age, phimosis, surgical method, or BMI.

UP-327

Risk Factors of Fistula Recurrence After Urethrocutaneous Fistulectomy in Children with Hypospadias

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Introduction and Objective: To study the risk factors of recurrence after primary urethrocutaneous fistulectomy in children with hypospadias.

Materials and Methods: In the period from 2009 to 2019 sixty-three patients underwent a urethrocutaneous fistulectomy after hypospadias repair in our hospital. Patients were divided into two groups: group 1, patients with successful urethrocutaneous fistulectomy 51 (81.0 %) and group 2, children who had a failed urethrocutaneous fistulectomy 12 (19.0%). The study was analyzed retrospectively, according to the demographic factors of the patients, findings of the previous urethroplasty and location, type, meatal stenosis, postoperative stricture, and size of urethrocutaneous fistula. All data was statistically analyzed on SPSS.

Results: The overall success rate of primary fistula repair was 81.0% (51 of 63 fistulae). Most recurrences (8 of 12 fistulas, 66.6%) occurred in fistula at the penoscrotal area. Demographic factors show no difference between the two groups age (p=0.501), weight (p=0.063), low body weight (p=0.454), BMI (p=0.924) and prematurity (p=0.381). Types of hypospadias (p = 0.007) and urethral defect length (p = 0.021) were identified as independent risk factors for failed outcome. Meatal stenosis (p=0.431), postoperative stricture (p=0.587), location of the fistula (p=0.173), multiplicity (p=0.588) and size (p=0.530), were also not significant.

Conclusion: Type of hypospadias and urethral defect length are significant risk factors of secondary fistula recurrence after primary urethrocutaneous fistulectomy.

UP-328

Risk Factors for Febrile Urinary Tract Infection after Ureteral Reimplantation in Children

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Introduction and Objective: Patients with febrile urinary tract infection show significant morbidity in patients with vesicoureteral reflux, especially in patients undergoing surgery. After ureteroneocystostomy, the incidence of febrile urinary tract infections ranged from 10% to 24%. To investigate the incidence and risk factors of febrile urinary tract infection after ureteroneocystostomy in our hospital.

Materials and Methods: We retrospectively reviewed patients who underwent ureteroneocystostomy from January 2015 to December 2018. Patient data were analyzed to evaluate the predictors of febrile urinary tract infection after ureteroneocystostomy.

Results: Ureteroneocystostomy was performed in 67 patients (112 ureters) at a mean of 33.4 ± 34.0 months. Preoperative diagnosis was VUR 57 (85.1%), obstructive megaureter 4 (6.0%), reflux megaureter 3 (4.5%), duplicated ureter 2 (3.0%), and ureterovesical junction obstruction 1 (1.5%). The incidence of postoperative febrile urinary tract infection was occurred in 12 patients (17.9%) during the follow-up period. Urinary tract infections occurred at 64.1 ± 60.4 (15-187) days after surgery. Thirty-six ureters were implanted with a ureteral catheter for 3 days and 53 ureters were with double J ureteral stent for 6 weeks and 23 ureters were without any catheter. The young age at the time of surgery was the only significant risk factor for postoperative febrile urinary tract infection (p= 0.034). The patient's sex, diagnosis, surgical method, renal scar, reflux grade, laterality, persisting VUR and presence of double J ureteral stent did not predict postoperative febrile urinary tract infection (p > 0.05).

Conclusion: The incidence of febrile urinary tract infections after ureteroneocystostomy was 17.9% and all occurred within 6 months after surgery. The young age at the time of surgery was a factor for postoperative febrile urinary tract infection.

UP-329

Current Trends in Testicular-Sparing Surgery in Children: A Literature Review

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Introduction and Objective: Testicular tumors in children account for 1-2% of all solid tumors, with a high incidence of benign lesions (BLs). Testicular-sparing surgery (TSS) has been suggested when α-FP is negative, and USS suggests a BLs. This literature review aims to describe current trends in TSS.

Materials and Methods: A literature review was performed by two revisers on MEDLINE/PubMed using Keywords: 'Testicular tumor children', 'Pediatric testicular sparing surgery', 'Testis sparing surgery children', 'Testicular sparing surgery children'. Published series before 2000, with patients >18 years-old, with less than 10 patients, on a single tumor-type and non-English literature were excluded. Demographical, histological, surgical and follow-up data were recorded.

Results: There were 1305 lesions included from 25 retrospective studies (2 multicentric). Series size varied from 10-209 patients (mean 52). Teratoma, yolk sac tumor (YST) and Epidermoid Cyst (EC) accounted for 78% of all tumors. Sex cord-gonadal stromal tumours, paratesticular rhabdomyosarcomas, mixed germ-cell tumors accounted for 9.6%. Other BLs were diagnosed in 6% of cases, mostly capillary haemangioma, cystic dysplasia and simple cysts. Use of TSS for BLs varied from 9-94%. Teratoma was most common tumor: 484 (37%) lesions in 23/25 series. Exposure to teratoma varied from 0.1-9.7 cases/year (mean 1.3). 190/480 (39%) teratoma received TSS (no data for 4 mature teratoma) with 80/190 (42%) trans-scrotal TSS, all for mature teratoma. 122 (9%) EC were treated (no data for 9 EC), 107/113 (95%) with TSS of which 33/107 (31%) via trans-scrotal TSS. 408 (31%) yolk-sac tumors were found, 367 with full data on α-FP which was elevated in 348/367 (95%). All except one YST underwent radical orchiectomy via inguinal approach. Four teratomas recurred, 3 after TSS (3/190,1.6%), mean follow-up 68.5 months (30-204). Nine patients with YST died (9/367, 2.4%), mean follow-up 76 months (23-204).

Conclusion: Experience with testicular lesions is generally low. The incidence of uncommon BLs is not exceptional. TSS is a safe and acceptable surgical choice for BLs, teratoma and EC, especially when they are well recognizable at USS. TSS should continue to be done via inguinal approach. Trans-scrotal TSS is reserved for high volume centers only until prospective data will be available, preferably from large series.

UP-330

Anterior Corporeal Mobilization with Subperiosteal Osteotomy: Application of a Recognized Epispadias Technique in DSD for Phallus Elongation

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Introduction and Objective: A paradigm shift has happened in surgical management of under masculinized male patients from complete feminization toward masculinizing the poorly developed male structure. Techniques for phallus elongation in these cases are clearly required. A recent development in the territory of exstrophy modern reconstruction has been RSTMI. In this technique every effort including sub-periosteal osteotomy has been made for penile elongation.

Materials and Methods: Thirteen patients of 46 XY DSD and/or gonadal dysgenesis spectrum considered to be assigned to male gender with severe hypospadias and small phallus were operated between 2014 to 2015. The classic coronal incision was done, and corpora were released down the pubic bone at dorsal aspect. Ventrally first urethral plate was elevated, and dissection continued till bulbar urethra reflecting off the Denonvillier fascia sometimes to the level of bladder neck. The urethral plate was transected. At dorsal

aspect, dissection was continued down reaching inferior aspect of pubis. A bone flake was avulsed in a sub periosteal plane underneath the pubis either the flake was detached or left alone on the corpora. In 4 cases that the elongation above the superior level of pubis was deemed insufficient, laterally subperiosteal osteotomies were done partially on inferior pubic rami on both sides. Pulling the glans stitch up the phallus was positioned in the maximal stretched upright position; corporal midline septum was longitudinally tagged on superior pubic bone by 3/0 Prolene suture holding the phallus in new uplifted position. The rest of the procedure was continued applying principles of STAG including serial ventral corporotomies and either preputial or buccal grafts.

Results: Age of patients was between one year and 13 years with a median of three. Stretched penile length was below two standard deviations of penile length in age matched normal children in all patients. After subpubic release and subperiosteal osteotomy in each case 0.5-1 m was added to the stretched suprapubic length appraised during the operation.

Conclusion: This surgical technique may be an effective way to increase penile length in cases of 46 XY DSD/microphallus.

UP.331, Table 1. The preoperative characteristics of the pediatric patients.

Parameters	No.(%)	Mean(range)
Patients	114	
Kidney left/right	68 (53.5) / 59 (46.5)	
Gender male/female	76 (66.7) / 38 (33.3)	
Age,year		3.5 (0.5-13)
Stone type		
Upper ureteral	11 (8.7)	
single	46 (36.2)	
Multiple	58 (45.7)	
Staghorn	12 (9.4)	
Stone size,mm		20.6 (10-50)
Hydronephrosis, side	94 (74.0)	

UP.331, Table2. The postoperative outcome of mini-percuntaneous nephrolithotomy.

Parameters	No.(%)	Mean(range)
Puncture site		
Upper pole	20 (15.6)	
Middle pole	88 (68.8)	
Lower pole	20 (15.6)	
Operative time,min		69.3 (15-195)
Postoperative hemoglobin drop,g/L		10.6 (1-37.8)
Preoperative creatine,umol/L	30.4	
Postoperative creatine,umol/L	37.5	
Nephrotomy tube removed,d		3.9 (1-11)
Postoperative hospital time,d		6.6 (3-20)
Initial SFR	87.4	
Final SFR	95.2	
Major complications		
Fever (>38.5°C)	17 (14.9)	

UP-331

The Outcome of Ultrasound-Guided Mini-Percutaneous Nephrolithotomy in the Treatment of Pediatric Patients with Upper Urinary Calculi: A Single-Center 10 Years' Experience

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Introduction and Objective: To evaluate the effectiveness and safety of ultrasound-guided mini-Percutaneous nephrolithotomy in the treatment of pediatric patients.

Materials and Methods: From March 2006 to April 2017, the clinical data of 114 pediatric patients of Peking university people's hospital who underwent MP-CNL were retrospectively reviewed. Under general or epidural anesthesia, the 17.5-gauge needle was introduced into desired calyx under US guidance. Then a guide-wire was inserted into collecting system. The access was dilated by serial facial dilators through the guide-wire. A 14 to 16 Fr renal access was established. Nephroscopy was performed using an 8/9.8 Fr rigid ureteroscope. Lithotripsy was performed using pneumatic or holmium laser. Then we inserted a 4.7 Fr double-J stent and placed a 14 Fr nephrostomy tube after procedure. To assess the results, type-B ultrasonic or CT was performed at the time of 3 days after the procedure. The initial SFR was calculated at hospital discharge. The final SFR was calculated 3 months later. Postoperative recurrence and renal function in children were followed up.

Results: The stone of 124 kidney units were removed with one session while 3 kidney units were removed with two sessions. Single tract established in 126 kidney units and two tracts established in 1 kidney unit. The mean operative time was 69.3 ± 29.9 min and mean hemoglobin drop was 10.6 ± 6.9 g/L. The time of nephrostomy removal was 3.9 ± 2.0 days and the mean postoperative hospital stay was 6.6 ±3.7 days. The stone-free rate at hospital discharge was 87.4% (111/127). The final stone free rate was 95.2% (121/127). Complications occurred in 17 (16.4%) patients included fever in 17 (14.9%) patients. The mean follow up was 8.6 months (range, 3-18 months). The renal function was in normal range and hydronephrosis was not aggravated in these patients. Stone recurrence (>5mm) was found in 13 (11.4%) pediatric patients but without surgical treatment.

Conclusion: The MPCNL has a high stone free rate and low incidence of complications in the treatment of upper urinary calculi.

UP-332

Managing Glanular Hypospadias - Modified Circumcision and Firlit Procedure - Single Centre Experience

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Introduction and Objective: We wanted to share the outcomes of using a simple technique of Firlit procedure with modified circumcision for treatment of glanular hypospadias at our centre.

Materials and Methods: The subjects included pediatric patients at Department of Urology, Shifa International Hospital, Islamabad, from January 2011 until February 2018. These children underwent repair of glanular hypospadias by using technique of modified circumcision and Firlit procedure. One year follow up was done. Patients were analyzed for variables such as operative time, age, hospital stay, perioperative and postoperative complications, and one year follow up in terms of cosmetic outcome and the urinary stream. Chart review was done for collection of data on specified proforma.

Results: There were 83 patients with mean age of 1.71 ± 0.62 years. They were discharged on the same day. None of these children needed catheterization and dressing. Temporary dressing had to be used for mild bleeding immediate post op in 15 (18%) cases only. Other postoperative complication like urinary retention, fever, severe pain, or urinary tract infection were not seen in any of the children. Meatal stenosis was not seen on a 12-36 months' follow-up. Satisfactory urine stream and good cosmesis was noted by the parents.

Conclusion: The Firlit technique used for the repair of glanular hypospadias was a simple and satisfactory procedure in terms of urine stream and cosmesis with minimal complications.

UP-333

Utility of Mitrofanoff as Bladder Draining Tool: Experience in Pediatric Patients

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Introduction and Objective: Mitrofanoff procedure has been employed commonly as bladder draining tool in patients unable to do clean intermittent self-catheterization through native urethra. Single centre experience of pediatric age group patients undergoing Mitrofanoff procedure has been presented here.

Materials and Methods: It was a retrospective study of 62 children who underwent continent catheterizable conduit (CCC), from January 2009 till March 2018. Charts were reviewed for age, gender, presenting complaints, need for augmentation cystoplasty, Mitrofanoff channel source such as appendix or ileal patch, duration of surgery in minutes, hospital stay in days, per operative and postoperative complications. Preoperative evaluation of the children was done by doing complete blood picture, serum electrolytes, and renal function tests. Radiological evaluation included ultrasound kidney, ureter and bladder, voiding cystourethrography, urodynamic analysis and a nuclear renal scan with 99m Technetium dimercapto-succinic acid or MAG-3 scan. The abdominal end of the conduit was brought through the abdominal wall, and a stoma was fashioned by the V-quadrilateral-Z technique.

Results: Twenty-nine children having mean age of 9.54±4.88 years underwent CCC. There were 44 males (68%) and 18 females (32%). Augmentation cystoplasty plus Mitrofanoff was done in 34 children while only Mitrofanoff in 28 children. Stuck catheter was seen in one patient which was removed successfully via normal urethral route under general anesthesia. Stomal stenosis in first year was noted in 6 patients (11%).

Conclusion: Based on Mitrofanoff principle have durable outcome over long term follow up in terms of urinary continence and complications.

UP-334

Repair of Exstrophy-Epispadias Complex by Adopting Kulkarni Method

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Introduction and Objective: The repair of exstrophy-epispadias complex (EEC) poses a challenge to pediatric urological surgeons. Many techniques have evolved over time to treat this congenital anomaly and they have their own pros and cons. In any type of epispadias repair care is taken of achieving goals of correction of dorsal Chordee, glanular reconstruction and satisfactory cosmetic appearance. In 2002 Bharati Kulkarni reported a new method for repairing of exstrophy-epispadias complex (EEC) at a second stage by using flaps from the area of skin between the penis and scrotum. They said that it had good cosmetic outcome in terms achieving normal penoscrotal relation in all patients, who underwent repair by this technique. We evaluated outcome of epispadias repair by this technique in 5 children in terms of successful cosmetic results and complications.

Materials and Methods: We used this technique in 5 patients (age between 1 and 7 years). All of them were males. As described by Kulkarni Flaps were marked on normal pigmented skin area lying between penis and scrotum. Incision was then encircled around root of penis and urethral strip of adequate size was marked. Flaps were raised exposing attachment of corpora cavernosa to ischiopubic rami and bulbospongiosus muscle. Urethral strip was tabularized over 6 or 8 Fr feeding tube. Absorbable 6/0 suture was used for this tabularization of urethra. Corpora cavernosa were approximated in midline over ventralized urethral tube. Normal pigmented skin flaps (skin area between penis and scrotum) were rotated superiorly and sutured in symphyseal area by absorbable vicryl rapid 4/0. A tight dressing was placed around the penis for 7 days and catheter kept in place for 7 to 10 days. Patients were followed for 1 to 6 months. They were evaluated in terms of cosmetic appearance and correction of Chordee and quality of urine stream.

Results: The Cosmetic and functional results were much satisfactory in all of the 5 patients in terms of penis dependent appearance, urine stream was good in all patients and near to normal penoscrotal anatomical appearance was achieved in all operated cases. No wound infections or other complications were seen.

Conclusion: This modified technique can give good results in terms of successful repair and good cosmesis.

UP-335

Outcome of Pyeloplasty in Children: A Single Centre Experience

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Introduction and Objective: To retrospectively evaluate the effectiveness of pyeloplasty in children for treating pelviureteric junction obstruction.

Materials and Methods: It was a retrospective descriptive study from January 2009 to January 2018, in which total of 47 patients underwent Anderson- Hynes pyeloplasty by standard technique. Children diagnosed with primary pelviureteric junction (PUJO) were included in this study. Children presenting with PUJO secondary to infections, stones and adhesions were excluded from the study. In pre-operative work up all patients underwent investigations like Complete blood picture, Routine biochemistry, Renal function tests, Urine routine examination and culture, Ultrasound kidney Ureter Bladder (USG KUB), Intravenous pyelogram and nuclear renal scan studies. Patients were evaluated for per operative and post-operative complications and post op preservation of renal function. Patients underwent follow up of 6 months to 3 years. In follow up investigations serum creatinine and urea were measured along with the USG KUB. Data was collected on specified Performa from data chart review.

Results: Total of 47 patients underwent Anderson-Hynes pyeloplasty including 41 (87.2%) male and 6 (12.8%) female patients with an age range from 2 months to 144 months. Right sided PUJO was present in 10 (21.2%), Left sided PUJO in 34 (72.3%) and bilateral PUJO in 3 (6.4%) children. Mean operative time was 131.59 ± 33.75 minutes and mean hospital stay was 3.64 ± 2.22 days. In complications Fever developed in 1 (2.1%) patient and one (2.1%) patient had anastomotic leak which required drain and Double J stent post operatively.

Conclusion: Pelviureteric junction obstruction treatment in children by Anderson-Hynes pyeloplasty is an effective method in terms of renal function preservation and has low complication rate.

UP-336

Penile Hair Tie in Young Children

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Introduction and Objective: Penile hair tie is one of the entrapment syndromes that can occur in extremities like the genitalia, the penis, toes and fingers and mostly due to hair shed by the mother specially in young children but may be other materials are involved like machine belts specially in adults. Penile hair tie is an uncommon health problem that leads to devastating injuries to the urethra and penis including urethral fistula up to urethral complete transaction and penile injury up to penile amputation. We are going to discuss our experience with the problem.

Materials and Methods: 17 patients had been operated upon for various degrees of Penile hair Entrapment syndrome. 12 had simple single urethral fistula, and 5 had complete urethral fistula including one with incomplete glanular bisection. Their ages ranged between 1.5 years to 4.6 years. Follow up ranged between 6 months to 1.4 years. Each patient was investigated and examined at the emergency room for other entrapment syndromes and the causative agent was removed and the patients were admitted for managing their urethral and penile injuries. Simple urethral fistula was managed by fistulectomy after fistulous tract dissection and urethral closure with dartos fascial cover. Complete urethral transection was managed by dissection of a ventral penile skin onlay flap to cover the defect followed by using a dartos fascial cover for the repair

Results: All 15 patient but 1 had complete healing with fistula healing and normal voiding with no meatal stenosis or urethral diverticulum. 1 patient had incomplete urethral closure with redo operation and fistula closure.

Conclusion: We should emphasize on penile hair tie prevention. There should be public awareness and mothers should seek medical advice in case of any suspicious finding. Penile hair tie syndromes are uncommon urological health problems that can affect young children and the urologist should be prepared to manage it as early as possible to prevent further damage of the valuable urethra and penis.

UP-337

Challenges in Wilm's Tumor - Impact of Subject, Source and Support System: 15 Years' Experience from a Tertiary Care Centre in Northern India

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Introduction and Objective: To study factors affecting outcome of multimodality treatment in Wilms tumor in low income country.

Materials and Methods: Retrospectively data of patients presenting from 2003-2018 was studied. Factors studied: subject factors (age, sex, nutrition, stage and size of disease), socioeconomic factor (source factor - literacy, income and employment of parents), and healthcare facilities available (support factor - cost of treatment, specialties and services available in India).

Results: Total 60 patients were included. 64% patients with age < 10yrs were underweight. 50% patients presented after 5 years of age. Average size of tumor was 10cm in each stage (range 5cm - 20cm). Most common presentation was lump followed by pain. 52% patients presented with stage I, 23%, 10%, 8% and 7% with stage II, III, IV and V respectively. Only 33% parents had their graduation completed. 40% families had no permanent source of income and their mean income was $305 USD/month. Average cost of hospital stay during surgery was 546USD. Mean cost of single cycle of chemotherapy was 87 USD.Most of the centers dealing with Wilms tumor lack specialized pediatric staff and doctors. Special stains and flow cytometric evaluation of DNA-ploidy is also not routinely done in low- and medium-income countries. Mean follow up period was 50 months. The estimated 5 years survival rate was 84%, 80%, 66%, 60% and 50% for stage I, II, III, IV and V respectively. Mean survival time was 94, 77, 36, 49 and 31 months for stage I, II, III, IV and V respectively. Overall 5-year survival was 72% and event free survival was 67%. Total 9 events occurred in total including metastasis and recurrences.

Conclusion: Although multimodality treatment has significantly increased survival in Wilms tumor but in low income population there are many other challenges which restricts full utilization of these new approach. Education of parents, their level of awareness and financial status leads to late presentation with advance disease, malnutrition and failure to complete treatment. Healthcare facilities are overburdened and far less specialists are there then needed. Social assistance and treatment adapted to local circumstances are key to improving results.

UP-338

Efficacy and Safety of Supracostal Access for Percutaneous Nephrolithotomy in Pediatric Patients

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Introduction and Objective: To evaluate the efficacy and safety of supracostal percutaneous nephrolithotomy (PCNL) through the 11th intercostal space and compare it with subcostal PCNL in children with renal calculi.

Materials and Methods: Patients younger than 18 years with renal calculi who underwent PCNL between January 2010 and December 2017 were divided into two groups: supracostal PCNL (group 1) and subcostal PCNL (group 2). Patient characteristics, stone location, stone burden, location of the access points, operative time, postoperative pain according to visual analog score (VAS), success rate, hospital stay, and complications according to the modified Clavien Dindo classification were compared between group 1 and group 2. For statistical analysis, comparison of medians was done using the Mann Whitney U test and the means were compared using t test. Statistical analysis was done using SPSS (version 16.0).

Results: In total, 110 pediatric patients underwent PCNL during this period. Group 1 had 50 patients while group 2 had 60 patients. The stone-free rate was 84.0% and 85.0% in groups 1 and 2 respectively after one session of PCNL (p= 0.77). After auxiliary procedures, it increased to 96.0% and 96.6% respectively (p= 0.98). The mean fall in hematocrit was 0.9% in group 1 and 1.5% in group 2 (p= 0.26) whereas the median VAS score was 4 in group 1 and 3 in group 2 (p= 0.37). In all, 54 complications were recorded, the most common among which were grade I (81.5%). Twenty-nine complications were observed in group 1 while 25 complications were observed in group 2 (p=0.79). One patient developed nephropleural fistula while another patient developed hydropneumothorax. Both belonged to group 1.

Conclusion: Supracostal access for PCNL is an effective and safe alternative to subcostal access for children with renal calculi in terms of stone free rate and complications.

UP-339

Testicular Asymmetry in Adolescent Males with and without a Left Varicocele

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Introduction and Objective: To assess the evolution of the Testicular Atrophy Index (TAI) in adolescent boys with and without a left varicocele with special attention for the currently postulated cut-off value of 20%.

Materials and Methods: We conducted an observational longitudinal study from April 2015 until February 2019 in which we recruited 758 adolescent boys aged 11–16 years. A clinical examination including testicular size measurement by ultrasonography was performed. Testicular volume (TV) was calculated using the Lambert formula (length x width x height x 0.71). The TAI was calculated using the formula [(right TV – left TV)/TV of the largest testis] x 100. Chi-square analyses were used to compare the evolution of the TAI between groups.

Results: We included 239 participants in our final study population, of which 161 (67.36%) controls and 78 (32.64%) boys with a left varicocele. The mean amount of measurements per participant was 3.82 ± 1.08. The average follow-up length was 2 years and 2 months ± 8 months. The median amount of Tanner stages passed during study was 2. A TAI ≥ 20% at first measurement occurred in 35.90% and 9.94% of the boys with and without a left varicocele, respectively. However, of these only 46.43% and 31.25% boys with and without a varicocele respectively had a TAI ≥ 20% at the last measurement. The normalization rate was the same between both groups (p= 0.182). Normalization occurred most frequently Tanner stages 3 and 4. However, when a TAI ≥ 20% was measured at the first measurement a higher chance of ending with a TAI ≥ 20% was observed (p= 0,041 for controls and p= 0,002 for varicoceles), as of those with a TAI ≥ 20% at the last measurement 65% and 21.74% also had a TAI ≥ 20% during the first measurement for boys with and without a varicocele respectively. Of the 29 adolescents without varicocele and of the 35 boys with a left varicocele whose TAI normalized during follow-up, 24 (83%) and 26 boys (74%) experienced a catch-up growth of the left testis and 5 (17%) and 9 boys (26%) had a hypotrophy of the right testis, respectively.

Conclusion: A TAI ≥ 20% is a rather prevalent phenomenon in boys with and without a varicocele. Although normalization of a high TAI occurs in the great majority of cases, both boys with and without a left varicocele who have an initial TAI ≥ 20% have a higher risk at a TAI ≥ 20% in the future. The normalization of a high TAI is most frequently due to catch-up growth of the left testis which usually occurs in Tanner stages 3 and 4 and at a mean age of 15 years for boys without a varicocele and 14 years and 10 months for boys with a left varicocele. In conclusion, the TAI has to be considered as a fluctuating parameter which should be interpreted carefully and should be evaluated by means of multiple measurements.

UP-340

A Rare Case of Primary Bladder Wilm's Tumor in a 1-Year Old Boy

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Introduction: Nephroblastoma or Wilms' tumor is one of the most common kidney malignancies, while extrarenal wilm's tumor is a rare entity. Extrarenal Wilms' tumor most commonly occur in retroperitoneum, pelvic or inguinal region. In previous reports, bladder wilm's tumor were extensions from renal pelvis or ureter to the bladder, while primary bladder Wilms' tumor is extremely rare, with only 1 case reported previously. This case provides new possibility of tumor origin among the rare case of pediatric bladder cancer.

Case Presentation: A 1-year-old boy was brought to hospital by his parents with voiding difficulty accompanied with intermittent fever, there was no history of reddish urine or sign of renal insufficiency. Cystoscopic findings revealed the bladder mass was arising from anterior bladder wall, extending to the prostate and the bladder neck. Pathologic findings from transurethral resection revealed granuloma of bladder mucosa. Abdomen and pelvis CT scan revealed isodens, inhomogenous mass arising from anterior bladder wall extending to the prostate and bladder neck. Due to discrepancy between pathologic finding from cystoscopy and clinical findings, we decided to perform partial cystectomy. Intraoperatively we found a 3x2 cm pedunculated mass from anterior wall of the bladder. There was no sign of abdominal wall infiltration or ureteral orifices obstruction. Pathologic examination revealed composition of sheets, which were randomly arranged and tightly packed. Small blue cells were arranged in serpiginous aggregates (blastemal component) and primitive neuroepithelial cells between fibromyxoid tissues, suggested extrarenal Wilms' tumor without lymphovascular infiltration

and favorable histopathology. The patient had vesicocutaneous fistulae that developed at second post operation day but require no further surgical management. The fistulae resolved spontaneously at 10th post operation day with just maintaining a larger foley catheter.

Conclusion: Bladder cancer in pediatric population is a rare entity, and primary Wilms' tumor of the bladder is even rarer. The pathologic finding from cystoscopy and specimen from surgery may be different. In this condition, clinical decision based on clinical findings of malignancy may be essential in management of these patients.

UP-341

Single-Stage Urethroplasty: An 8-Year Single Center Experience and its Associated Factors for Urethrocutaneous Fistula

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Introduction and Objective: This study aims to describe our single-stage urethroplasty experience and determine factors associated with urethrocutaneous fistula after the procedure in our institution.

Materials and Methods: We include all hypospadias patients without any prior urethroplasty history, who underwent single-stage urethroplasty, dated from July 2010 until January 2018. Total 179 patients, aged 6 months until 29 years, were included in this study and followed for at least 1 year after the operation. The types of hypospadias were recorded, as well as operation techniques, chordee degree, preoperative pyuria (urine white blood cell >5/HPF), urethral length defect, and urethrocutaneous fistula formation.

Results: The posterior hypospadias (penoscrotal, scrotal, perineal) were the most common found with 103 cases (57.5%), followed by middle (57 cases) and anterior (19 cases). The most versatile techniques used were Onlay preputial island flap (71 cases), then Snodgrass' Tubular Incised Plate (46 cases) and Duckett's transverse preputial island flap (35 cases). The mean follow up time was 47.1 ± 25.8 months. Urethrocutaneous fistula were formed in 23 patients (12.8%) and significantly occurred in posterior hypospadias group ($p = 0.025$). Chordee degree was not associated with urethrocutaneous fistula formation ($p = 0.886$), while preoperative pyuria ($p < 0.001$) was significantly associated. Nonparametric analysis showed that longer urethral defect was significantly associated with fistula formation (median difference 10 mm; $p = 0.007$). Whilst age was not a significant factor associated with urethrocutaneous fistula formation ($p = 0.187$).

Conclusion: Single-stage urehtroplasty is an amenable procedure for various hypospadias cases with urethrocutaneous fistula rate 12.8%. Posterior hypospadias, preoperative pyuria, and longer urethral defect were associated with urethrocutaneous fistula formation.

UP-342

The Relationship Between Voiding Cystourethrography and Cystoscopy in Boys with Posterior Urethral Valves

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Introduction and Objective: Our aim is to standardise radiological findings on voiding cystourethrography (VCUG) and transabdominal ultrasound in a new scoring system and assess its validity to predict the presence of posterior urethral valves (PUV) on cystoscopy.

Materials and Methods: Between January 2017 and December 2018, a total of 52 patients underwent VCUG, transabdominal ultrasound and cystoscopy. The decision to perform cystoscopy was based on clinical consensus between a paediatrician, paediatric urologist and paediatric radiologist disregarding the total score of the VCUG on the scoring system. Mean patient age was 4.5 years (range 1 week to 12 years); 38/52 (73.1%) patients had PUV on cystoscopy. The total score is calculated as follows: the visible urethral obstruction – vesicoureteral reflux + residual volume + bladder wall thickness. Table 1 shows the weight of each parameter in the total score. A total score of 3 or more was defined as suspected for PUV. Interobserver agreement is calculated between three investigators, one experienced radiologist and two blinded research students.

Results: If we define the cut-off value at 3 the sensitivity and specificity are 89.5% and 57% respectively. The area under the curve is 0.799. In our study population, 6/52 (11.54%) patients scored 3 or more than 3 but did not have PUV on cystoscopy. 4/52 (7.69%) were false negatives. The interobserver agreement on visible urethral obstruction (mean kappa= 0.62) and residual volume (mean kappa= 0.63) was good. The agreement for vesicoureteral reflux was very good (mean kappa= 0.8).

Conclusion: Our scoring system has a high sensitivity of 89.5%, indicating that this scoring system is useful for ruling out PUV. The overall interobserver agreement among 3 investigators was good. Therefore, this tool can be easily used in practice.

UP-343

Expression of mRNA Mastermind-Like Domain Containing 1, Androgen Receptor, Estrogen Receptor, and Vascular Endothelial Growth Factor in Hypospadias Patient

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Introduction and Objective: Androgen (AR) and Estrogen (ER) hormones play an important role in the prenatal and postnatal development of the urogenital tract and especially the penis. Growth factors also influence the development of genital structures. Little is known about the exact role of Mastermind Like Domain 1 (MAMLD1) in sexual development. A role in sex differentiation through supporting testosterone production in critical periods of male development has been suggested. MAMLD1 mutations result in hypospadias with and without a disorder of sexual development (DSD) primarily because of compromised testosterone production around the critical period for fetal sex development, but the underlying etiology remains unclear.

Materials and Methods: From September 2017 – May 2018, 70 patients underwent repair of hypospadias without DSD and 10 normal patients underwent circumcision as control. We divided the samples into distal hypospadias, proximal hypospadias and control. We used periurethral dartos obtained during chordee excision. The expressions of mRNA MAM-

UP.342, Table 1: Parameters of scoring system.

VCUG		Points
Vesicoureteral reflux	No reflux	0
	Grade 1-3	1
	Grade 4-5	2
Bladder neck	Normal	0
	Abnormal	1
Visible urethral obstruction	No obstruction	0
	Indistinct obstruction	3
	Distinct obstruction	6
Residual volume	No residual volume	0
	Residual volume	1
Ultrasound		
Bladder wall thickness	Normal	0
	Thickened (> 4 mm)	1

UP.343, Table 1. Compared mean analysis among groups.

Variable	Distal Hypospadia	Proximal Hypospadia	Control	*p*
MAMLD1#	5.33 ± 2.21 4.59 (2-10.55)	4.82 ± 2.42 4.28 (1.86-10.55)	9.55 ± 0.93 9.84 (8-10.55)	<0.001
AR*	6.27 ± 2.18 6.28 (2.63-11.32)	6.52 ± 2.61 6.73 (1.62-13.92)	9.69 ± 1.10 9.51 (8-11.31)	<0.001
ER1#	17.93 ± 8.22 16.57 (9.18-39.39)	15.31 ± 6.49 14.92 (4.59-32)	12.82 ± 2.23 13.02 (9.18-16)	0.158
ER2*	21.22 ± 5.38 21.11 (11.31-29.85)	24.44 ± 8.41 24.25 (9.18-42.22)	11.79 ± 2.49 12.12 (8-14.92)	<0.001
VEGF#	11.43 ± 4.14 11.72 (6.06-21.11)	12.09 ± 5.37 11.31 (6.49-33.62)	10.03 ± 1.58 10.19 (7.46-12.12	0.579

Kruskal-Wallis, * One Way ANOVA, p<0.05;
AR, Androgen; ER, Estrogen; MAMLD1, Mastermind Like Domain 1; VEGF, Vascular Endothelial Growth Factor

UP.343, Table 2. Post Hoc Analysis.

Variable Dependent	Hypospadia type		*p*	95% CI	
				Lower	Upper
MAMLD1#	Distal	Proximal	0.l99	N/A	N/A
	Distal	Control	<0.001	N/A	N/A
	Proximal	Control	<0.001	N/A	N/A
AR*	Distal	Proximal	1.00	-1.69	1.21
	Distal	Control	<0.001	-5.59	-1.26
	Proximal	Control	<0.001	-5.19	-1.17
ER1#	Distal	Proximal	0.195	N/A	N/A
	Distal	Control	0.059	N/A	N/A
	Proximal	Control	0.121	N/A	N/A
ER2*	Distal	Proximal	0.230	-7.60	1.17
	Distal	Control	0.002	2.87	15.98
	Proximal	Control	<0.001	6.56	18.72
VEGF#	Distal	Proximal	0.891	N/A	N/A
	Distal	Control	0.274	N/A	N/A
	Proximal	Control	0.347	N/A	N/A

Kolmogorov-Smirnov, *Bonferroni, p<0.05;
AR, Androgen; CI, Confidence Interval; ER, Estrogen; MAMLD1, Mastermind Like Domain 1; VEGF, Vascular Endothelial Growth Factor

LD1, AR, ER1, ER2 and Vascular Endothelial Growth Factor (VEGF) were investigated by one step quantitative polymerase chain reaction.

Results: Median age was 5 years old in 70 patients with hypospadias and 6 years old in control group. Total specimens taken included 24 distal penile, 46 proximal penile and 10 normal penile specimens. We found decreasing mRNA MAMLD1 and AR expressions with statistically significant decreased ER2 expression in hypospadias patients compared to control, ($p < 0.001$). A positive correlation between mRNA MAMLD1 and AR was found in hypospadias ($r= 0.062$; $p= 0.038$).

Conclusion: Decreasing of mRNA MAMLD1 and AR expression was followed by non-decreased ER2 expression in hypospadias patient. MAMLD1 had positive correlation with AR so the defect of MAMLD1 may influence AR and increase incidence of hypospadias.

UP-344

Canine Model as a Dependable Animal Model for Male Urethral Stricture Disease

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Introduction and Objective: Stricture urethra is relatively common and leads to debilitating conditions if not well treated. Novel biological injections and grafts were potential to replace the current surgical treatments. Rats, rabbits and porcine urethra were utilized as an animal model for stricture urethra. Our aim was to create a durable larger animal model of urethral stricture.

Materials and Methods: Seven male Mongrel dogs, 2 years old, average weight 20 kg, were randomized into three groups. One animal utilized as a negative control, three animals had a urethral injury by sharp perforating needle, three animals had a surgical urethrotomy distal to the penoscrotal junction. The animal protocol was approved by the animal research committee. After anesthesia, ascending urethrograms were performed for all animals using Urografin 76% through 12 Fr. catheters. After 4 weeks, ascending urethrograms were obtained under anesthesia. Urethral tissues were harvested afterward for histological evaluation.

Results: All animals showed normal caliber urethras without strictures before the intervention. All animals were able to survive without retention. The urethrotomy injured animals presented mild gross haematuria after the procedure which resolved within the first postoperative week. After 4 weeks of induction of urethral damage, the minimally injured urethra (sharp perforating needle group) didn't present a change in the caliber of the urethra in the urethrogram. However, epithelial thinning and mild spongiofibrosis were observed in histological sections. Surgical urethrotomy group presented radiologically identified urethral stricture after one month of injury.

Conclusion: Urethral stricture is a fibrotic process with varying degrees of spongiofibrosis related to the extent of the injury. Surgical urethrotomy might be sufficient to create a reliable canine model of urethral stricture disease. However, a larger number of animals, different urethral areas, and longer time points are needed. Urethrotomy incision revealed urethral stricture after a month of the injury which might be utilized for testing of novel cellular, biological or tissue engineering modalities.

UP-345

The Outcome of Stented Versus Stentless Snodgrass Urethroplasty for Distal Hypospadias Repair

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Introduction and Objective: Hypospadias is one of the most common congenital anomalies in children. Patients with distal hypospadias can be treated successfully with TIP (tubularized incised plate) urethroplasty with a urethral stent to divert urine into the diaper or urine bag for approximately 1 week, but sometimes the stent causes unwanted adverse effects and complications. My objectives are to determine the safety of distal penile hypospadias repair without a postoperative stent and to look for any unacceptable complication which might justify its use.

Materials and Methods: A prospective study was done in Basra center of urology from May 2016 till August 2018 for 50 patients with distal penile hypospadias. Full history, routine laboratory investigations and imaging study were done preoperatively. After taking informed consent, operations were done by using Snodgrass urethroplasty by the same surgeon. Preoperative antibiotics were given in selected patients. The average hospital stay was ranged from 24-

48 hours unless complications happened. The patients were followed for 6 months, looking for, recording and managing any complication that may happen.

Results: During this study, 50 children underwent tubularized incised plate urethroplasty for distal hypospadias repair, their age ranging from (2-12) years, and mean age was 5.96 years old. In 25 cases stent removed within one week and other 25 cases, no post-operative stents were placed. The overall complication rate for a stentless group was 17 (68%), and for a stented group was 12 (48%). In a stentless group, 2 patients (8%) developed fistula after surgery, while in stented group, only one patient (4%) had a postoperative fistula, surgery for repair the fistula was done after 6 months. Neourethral stenosis occurred in one case (4%) of non-stented repair and one case (4%) of stented repair. Glans dehiscence occurred in one case (4%) of non-stented repair and one case (4%) in stented repair.

Conclusion: According to our evidence in this study, it is suggested that there is no outcome difference between stented and stentless distal hypospadias repair.

UP-346

Hypospadias Repair During Adulthood

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Introduction and Objective: Hypospadias is generally diagnosed and treated during early childhood, however, several patients with hypospadias require surgical intervention during adulthood because of missing mild disease or complications related childhood hypospadias repair. We report our surgical outcomes of hypospadias repair during adulthood.

Materials and Methods: We retrospectively reviewed the records of hypospadias patients who required surgical intervention during adulthood between 2015 and 2019. Data on the presenting complaints, past medical and surgical history, surgical approach and postoperative complications were collected and analyzed.

Results: A total of 18 patients were included, of which 4 presented for primary repair and 14 for secondary repair because of complications related past surgical treatments. In primary repair group, their complaints were abnormal penile appearance or downward urinary stream in all patients. Preoperatively the urethral meatus was glandular in 1 patient, coronal in 2, distal shaft in 1. All patients underwent dorsal inlay graft (DIG) urethroplasty using prepuce at the mean age of 21 years, and had no postoperative complications such as stricture, fistula and curvature at the mean follow-up of 13 months. In secondary repair group, their complaints were difficulty on urination related stricture in 11 patients, urinary and ejaculation disturbance related fistula in 2, glandular dehiscence in 1. In all 3 patients with fistula or glandular dehiscence, their complaints began during childhood. However, difficulty on urination related stricture was developed at the mean age of 41 years. Ten patients with stricture underwent 2-stage urethroplasty using buccal mucosa. DIG urethroplasty using redundant prepuce was performed in 1 patient with stricture and all 3 patients with fistula or glandular dehiscence. One patient had postoperative urinary tract infection, however, no patient had postoperative stricture, fistula or curvature at the mean follow-up of 15 months.

Conclusion: Follow-up of patients performed hypospadias repair should extend into adulthood, as a significant portion of adult presentations ultimately require surgical intervention. DIG urethroplasty using prepuce or 2-stage urethroplasty using buccal mucosa are effective methods for hypospadias repair during adulthood and leads to good cosmetic outcome with low risk of complications.

UP-347

Combined Sleeve-Slit Technique for Adult Circumcision

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Introduction and Objective: Circumcision is a common day-case procedure performed using a multitude of techniques and instruments. Here we describe a novel technique for performing circumcision named the "combined sleeve-slit technique" (CSS). A step-by-step description of the technique accompanied by images and post-operative images are presented. We compared the outcomes of this technique versus the standard sleeve technique performed by the same surgeon.

Materials and Methods: A retrospective review of 95 patients who had circumcision performed by a single surgeon. The first 29 patients underwent a standard sleeve (SS) technique circumcision; the subsequent 66 consecutive patients had circumcision performed by the combined sleeve-slit technique. Data on indications for surgery, co-morbidities, histology, operative time and complication rates was obtained.

Results: Median ASA for both groups was 2. However, 3 (6%) patients were diabetic in the SS compared with 12 (18%) in the CSS group. The patients in the CSS group also contained more patients with a BMI > 30, 7 (24%) versus 21 (32%), for the SS and CSS group respectively. The mean operative times were 34 minutes for the SS technique and 32 minutes for the CSS technique. 4 (7%) patients experienced a complication in the SS group compared with only 2 (3%) in the CSS group.

Conclusion: The CSS technique was quicker to perform, resulted in a lower post op complication rate, and no instances of patient dissatisfaction with the cosmetic result. These results were achieved despite a higher proportion of obese (BMI >30) and diabetic patients in the CSS cohort. This data lends support to performing this novel technique for circumcision.

UP-348

Predictors of Testicular Pain Relief Post Sub Inguinal Varicocelectomy

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Introduction and Objective: About 15% of men suffer from scrotal varicocele and 2% to 10% of them complain of pain. The many mechanisms for pain were suggested. Nearly 80% of testicular pain relived post varicocelectomy. The grade of varicocele, the nature and duration of pain, body mass index, prior conservative management, and the type of surgical method used, are predictors for the success of varicocelectomy. Our aim was to explore the predictors of pain resolution post varicocelectomy on our patients.

Materials and Methods: All cases who underwent varicocelectomy for mainly testicular pain were collected, excluding pain patients who have done varicocelectomy for other indications like infertility or military purpose; all demographic data collected, duration of pain, clinical grading , ultrasound grading, maximum dilated vein diameter, unilateral or bilateral, type of surgery and technique, complications. Then, the data was analyzed using SPSS version 20.

Results: In our study, 66 patients were included with a mean age 32.2 ± 7.7. For all of them, the indication of varicocelectomy is the pain. Bilateral varicocelectomy was done in 16 (24.2%), unilateral left side 46 (69.7%) and unilateral right in four (6.1%), post-operative complication documented in 3 (4.5%) (wound infection, haematoma and hydrocele). During follow up, 55 (83.3%) reported pain relived and feeling better, 11 patients still complaining of pain and not feeling better. Most of the preoperative parameters cannot predict the pain resolution apart from patient underwent unilateral varicocelectomy for unilateral testicular pain showed statistical significance (p= 0.011).

Conclusion: Patients with unilateral testicular pain have a great chance for pain relief post unilateral varicocelectomy.

UP-349

Experience with Implantation of AMS 700 LGX Penile Prosthesis Preserves Penile Length

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Introduction and Objective: The purpose of this study was to report the outcomes of patients undergoing penile implantation with an AMS 700 LGX inflatable penile prosthesis (IPP) in a single center by a single surgeon.

Materials and Methods: A total of 342 patients with erectile dysfunction who underwent implantation with an AMS 700 LGX IPP between October 2014 and April 2016 were included in this study. All patients were evaluated using the International Index of Erectile Function questionnaire preoperatively and 3, 6, and 12 months postoperatively. We also investigated the mean stretched flaccid penile length before and after surgery, as well as the complications that are related to and mechanical reliability of the IPP.

Results: The questionnaire scores at 12 months were statistically, significantly higher than the baseline scores. The mean stretched flaccid penile length was 11.1 ± 0.8 cm at baseline and was longer at 6 months (12.0 ± 0.9 cm, P<0.001) and 12 months (12.2 ± 0.7 cm, P<0.001) postoperatively. There were no intraoperative or perioperative complications. However, one patient experienced infection, and mechanical failure

developed in 10 patients during the follow-up duration.

Conclusion: The results of our study suggest that the AMS 700 LGX IPP could be used to preserve the penile length in patients undergoing IPP implantation. Furthermore, erectile function and patient satisfaction were improved excellently.

UP-350

Predictive Factors to Determine Treatment Course of Patients with First-Time Priapism

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Introduction and Objective: Most clinical guidelines advocate management of ischemic with intracavernosal injection therapy (IIT) of sympathomimetic agents, with or without aspiration and irrigation. Subsequent therapy includes corporoglandular shunting (CS) for refractory cases of first line therapy procedures. We sought to establish predictive factors of patients who present with first-time ischemic priapism episodes who fail IIT and ultimately require CS.

Materials and Methods: A retrospective review was done of all patients over the age of 18 who presented with first episode ischemic priapism over the past ten years to our institution. Variables assessed are included in Table 1. A receiver operating characteristic (ROC) curve was performed to determine the duration of erection at which proceeding to CS directly would be optimal (Table 2).

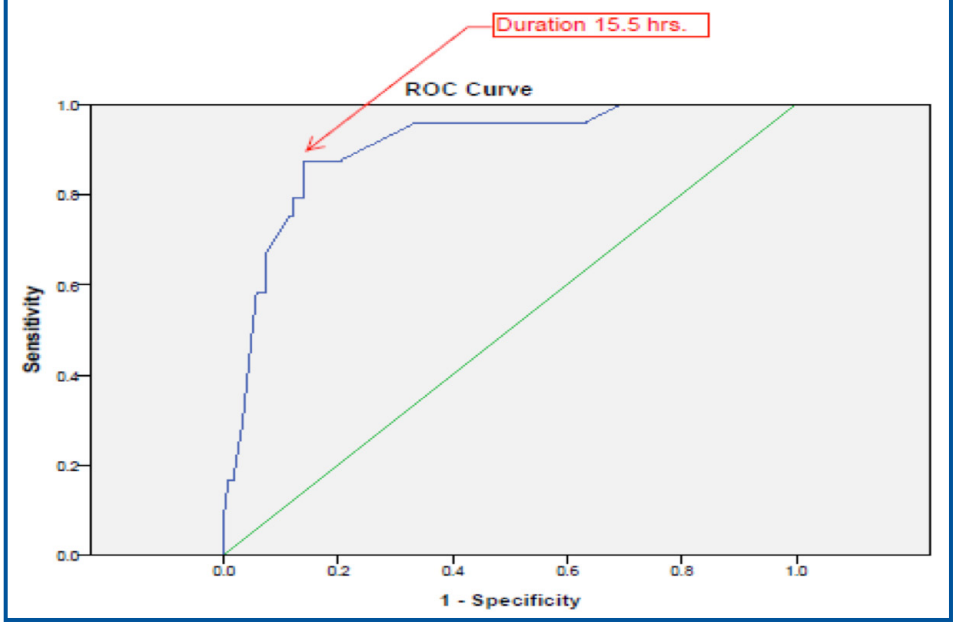
Results: 147 patients met inclusion criteria of which 24 patients underwent CS. There was no difference between shunted patients and non-shunted patients with regards to age or etiology. Patients who underwent CS required more phenylephrine, were more likely to undergo penile irrigation, and were more likely to follow up with Urology post-procedure. ROC curve analysis revealed an area under of the curve of 0.9 with an optimum cut-off point of erection duration of 15.5 hours with 87.5% sensitivity and 86.1% specificity.

Conclusion: Our study suggests that patients who present with erections lasting greater than 15.5 hours may be spared the morbidity of corporal aspiration and irrigation, and may benefit by proceeding directly to CS.

UP.350, Table 1. Comparison of patients requiring penile shunting for ischemic priapism and those without need for shunting

	Non-shunted (n = 123)	Shunted (n = 24)	*p* - value
Age, years	41.5	43.9	0.38
Etiology			0.81
Unknown	27	7	
Sickle cell	20	4	
Medications	73	12	
Cocaine	3	1	
Mean amount of phenylephrine, mcg	655.7	1161.9	< 0.05
Irrigation performed	73 (59.3%)	22 (91.7%)	< 0.05
Urology performed phenylephrine injection	44 (35.8%)	19 (79.2%)	< 0.05
Follow up with Urology	29 (23.6%)	14.0 (58.3%)	< 0.05

UP.350, Figure 1. ROC curve with duration of erection



UP-351

Urethral Rupture Secondary to Corpora Cavernosa Fracture: About 6 Cases

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Introduction and Objective: The rupture of the penile urethra during penile fracture is a rare condition. It mainly concerns young men. Our objective is to evaluate the frequency of this association during a long term study and to evaluate the results of its surgical treatment.

Materials and Methods: Our study is retrospective spread over 28 years (1991- 2018) and covers 6 cases of rupture of the penile urethra among 107 cases of Corpora Cavernosa Rupture: a rate of 5.6%.

Results: The average age of our patients was 36 years old (17 to 45 years). Diagnosis was suspected by the presence of a painful penis hematoma. The associated urethral rupture was suspected by the presence of urethrorrhagia in all patients. The treatment was surgical for all patients. In 3 cases, the urethral rupture was incomplete associated with a fracture of a single cavernous body; in the other 3 cases, it was a complete urethral rupture associated with a fracture of both cavernous bodies. The procedure consisted of a suture of the cavernous bodies and a urethrography after urethral catheterization. The immediate postoperative course was favorable for all patients. Two patients had urethral stricture, one at 6 months well evolved with calibration, the other at 2 years requiring endoscopic internal urethrotomy.

Conclusion: Urethral rupture can be associated with Corpora Cavernosa Rupture, it must be diagnosed and managed quickly. Long-term complications are dominated by urethral stricture.

UP-352

Don't Get CAUT Out! Difficult Catheterisation and Iatrogenic Catheter Associated Urethral Trauma Audit

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Introduction and Objective: In circumstances of difficult catheterisation the urologist on-call may be asked to catheterise; a range of specialist equipment is available, however iatrogenic urethral trauma is associated with early and long-term morbidity, is costly, causes patient distress and should be avoided. We aimed to

examine the prevalence of difficult catheterisation +/- iatrogenic Catheter Associated Urethral Trauma (iCAUT), understand the precipitating factors and develop prevention strategies.

Materials and Methods: Prospective data collection (from January 2019) of patients referred to on-call Urologist with one or more of the following inclusion criteria post-catheterisation: failure to catheterise, haematuria, non-draining catheter. Failed re-insertion of SPC was also included. Exclusion criteria: traumatic removal of catheter. Data was collected and a suggested grading scale applied: 0 – underlying urological problem preventing catheterisation (e.g. stricture) +/- previous SPC in situ, 1 – suspected urethral trauma (e.g. haematuria) + standard urethral catheter +/- urological advice, 2 – suspected urethra trauma + urological intervention +/- specialist catheter, and 3 – cystoscopic proven urethral trauma +/- theatre +/- SPC. Results: Eleven patients met inclusion criteria in 3 months of data collection: mean age 75 years. Five had a urological diagnosis requiring long term catheterisation: 4 SPC, 1 Urethral.64% (n=7) were referred from Emergency department; 64% (n=7) were referred by SHOs. As per our suggested grading scale: Grade 0 =3, Grade 1 =2, Grade 2 =2, Grade 3 =4. Six patients (55%) required theatre; 2 were found to have cystoscopic proven, significant urethral trauma as a result of multiple catheter attempts (Grade 3); both required SPC insertion. 3 patients with SPC in-situ (history of urethral stricture) had failed catheterisation leading to SPC re-insertion in theatre. Two patients required urology review and manipulation/ re-insertion of urethral catheter. The urology team did not re-attempt catheterisation in 2 patients as advice was sufficient.

Conclusion: Cystoscopic confirmed iCAUT occurred in 2 patients; this represents a small, but significant cohort with subsequent SPC dependence and urological follow up. The majority of surgical interventions were related to SPC re-insertions and suggests increased education may be required in this area. This ongoing project will continue to assess iCAUT and implement education and training.

UP-353

Surgical Outcome and Prognostic Factors of Varicocelectomy for Pain Resolution

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Introduction and Objective: The studies on varicocelectomy for pain were mostly performed with a small number of patients and a short follow-up period, the success rate and prognostic factors were also different. The purpose of this study was to evaluate the long-term outcome and improvement factors for pain resolution.

Materials and Methods: We retrospectively analyzed 312 patients who were treated with pain resolution out of 490 patients who underwent varicocelectomy from 2004 to 2017. The success of surgery was defined as resolution of both varicocele and pain, otherwise, it was defined as failure. The improvement of semen analysis was defined as when an increase of more than 20% was observed based on preoperative semen analysis.

Results: Mean age, duration of pain and follow up period were 24.4 ± 7.6 years, 17.2 (0.25-192) months and 8.9 (0-108) months, respectively. 96.5% of the varicocele were unilateral, grade I, II and III were 2.6%, 22.1% and 75%, respectively. The testis volume difference over 20% was 35.3%. Dull pain and dragging pain were 88.5% and 4.2%. Complete resolution of varicocele, pain and semen analysis were 96.8%, 78.8%, and 33.3%, respectively. Total success rate of surgery was 77.2%. In multivariable analysis, younger age (p= 0.020), shorter duration of pain (p= 0.001) and non-surrounded of internal spermatic artery (p= 0.037) were good prognosis factors of pain resolution.

Conclusion: It has been found that varicocelectomy was an effective treatment for patients with varicoceles who were suffering from scrotal pain. The younger the age, the shorter the duration of pain, the better.

UP-354

Urologist Directed Varicocele Embolisation - Outcomes Over a 10-Year Period

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Introduction and Objective: Varicocele is a common disorder typically affecting younger males and is the most common correctable cause of male infertility. Varicocele repair is indicated in patients with palpable varicocele and abnormal semen parameters. Treatment options for varicocele are surgical and radiological. We aimed to determine the efficacy and complications of radiological embolization for the treatment of varicoceles over a 10-year period. Materials and

Methods: We retrospectively analysed all varicocele embolization procedures performed at our tertiary centre from July 2005 to June 2015. Information including side, indication, duration, length of coil and case abandonment were collected from operation reports. To determine if recurrence occurred treating urologists were contacted. Documentation of a follow-up visit or phone call was obtained up to a maximum period of 18 months post procedure. Recurrence was defined as sonographic presence of varicocele or referral for repeat procedure. Results: We collected data for 131 patients who had varicocele embolization. Allowing for a 3.8% abandonment rate, we obtained complete follow-up data for 124 patients. There was an intraoperative complication rate of 6.3%, all of which were minor with no recorded post-operative complications. Analysing follow-up data demonstrated a recurrence rate of 4.0%.

Conclusion: We demonstrate that radiological embolization is an effective modality for the treatment of varicoceles with comparable results in terms of completion, complication and recurrence rate versus surgical treatment. Our findings, together with ability to perform embolization as a day procedure under local anaesthesia make it an effective option comparable to surgery for the treatment of varicoceles.

UP-355

Painful Nocturnal Erections - The Development of a Novel Diagnostic and Therapeutic Pathway

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Introduction and Objective: Painful nocturnal erections (PNE) refer to repeated, prolonged and painful erectile episodes during sleep that resolve spontaneously upon awakening. Patients also present with significant sleep disturbance, irritability and fatigue. The aetiology of PNE remains unknown, yet an association to REM sleep has been proposed in view of its occurrence in this sleep cycle stage. We aim to develop a new treatment protocol that reduces the burden of currently prescribed drugs such as benzodiazepines and their side-effects. Materials and Methods: Information on patient and disease characteristics as well as previous treatments were collected prospectively from PNE patients in our unit. A sleep diary and standardised template were used to collect sleep-wake pattern, blood results, visual analogue of pain score (VAS) and international index of erectile function (IIEF). Results: Nine patients were identified as PNE sufferers with a median age of 55 (IQR:46-57), all of whom had normal baseline IIEF and testosterone levels. PNE episodes occurred at least once per night in these patients, ranging from 5-30 minutes in duration. Treatments used included baclofen, etilefrine, clonazepam and corporal aspiration (table 1). We have developed a new protocol that involves a brain MRI scan, sleep study and referral for pelvic floor physiotherapy (PFPT) (table 2). Early results show improved VAS scores (reduction in mean from 2.6 to 0.4) following PFPT.

Conclusion: Our new protocol was utilised by all patients referred with PNE to our tertiary centre. We hypothesize that this defined stepwise pathway will reduce the requirement for such drugs, as well as streamlining PNE management.

UP-356

Penile Cancer - What Happens When the Disease Gets to Nodes?

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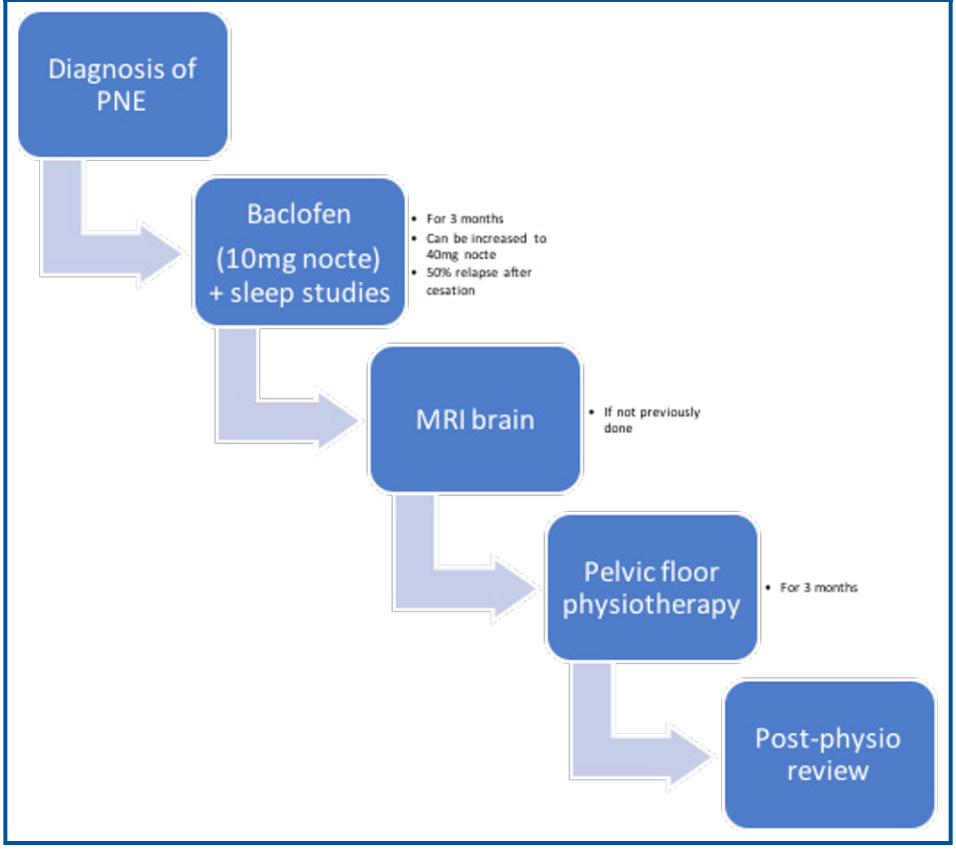
Introduction and Objective: Penile cancer, especially node positive disease continues to challenge clinicians with difficult decisions for maximizing the survival. Objectives behind this analysis were to quantify efficacy of treatment modalities, to search prognostic factors affecting outcomes, to check concordance in inguinal and pelvic nodes and to calculate survival in node positive patients treated with various combination therapies.

Materials and Methods: We retrospectively analyzed penile cancer patients with positive nodes, treated from 2013 to 2018 at tertiary cancer hospital. All patients underwent template based dissection for superficial inguinal node dissection or modified inguinal dissection followed by conversion to complete ilioinguinal dissection in case of node positivity on frozen. Neoadjuvant chemotherapy (NACT) was giv-

UP.355, Table 1. Patient Demographics

Patient No.	Age	Treatment	Duration of Usual PNE Events (mins)
1	59	Corporal aspiration + cyproterone acetate, etilefrine	>30
2	57	Baclofen, clonazepam, cyproterone acetate	10-30
3	57	Clonazepam + baclofen	>30
4	63	Baclofen, clonazepam	10-30
5	47	Baclofen, clonazepam	10-30
6	55	Baclofen	10-30
7	40	Baclofen, clonazepam	5
8	46	Baclofen, etilefrine, corporal aspiration	30
9	32	Etilefrine, baclofen	5-20
% of patients prescribed baclofen treatment		89%	
% of patients prescribed baclofen treatment		33%	

UP.355, Figure 1. Proposed treatment pathway



en for fixed, bulky nodes at presentation whereas adjuvant treatment (Chemotherapy/Radiotherapy-RT/Chemo-radiotherapy-CTRT) was considered as and when indicated.

Results: Median age of cohort was 55 years. 13 patients had pelvic node positivity in addition to inguinal nodes. pT stage, grade of primary, PNI, pelvic node positivity were the predictors for poorer disease specific survival (DFS) on univariate analysis whereas, on multivariate analysis, only pelvic node positivity was a significant factor. Mean DFS for pelvic node positive and negative patients were 22.78 and 46.05 months respectively. Amongst inguinal only positive patients, mean DFS with or without PNE were 45.28 and 54.61 months respectively. Mean survival for adjuvant treatment group and NACT group were 43.14 and 25.93 months respectively. (Table-1)

Conclusion: Node positive penile cancer carries bad outcome and poor prognosis. These results underline the importance of seeking early treatment and help us discuss prognostics with the patient. Pelvic node positivity stands as the worst prognostic factor.

UP-357

Partial Orchiectomy in Treatment of Benign Testicular Lesions

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Introduction and Objective: Small testicular masses are described as non-palpable asymptomatic lesions with diameter less than 2 cm. They can be benign in up to 80% of cases implying that radical orchiectomy may represent an overtreatment in these patients. We present a series of benign small testicular lesions in our institution.

Materials and Methods: Between January 2010 and August 2015, 18 patients with potentially benign testicular lesions underwent partial orchiectomy in our institution. Testicular exteriorisation was executed via inguinal approach. Intraoperatively, the localization of the lesion was performed via palpation or by intraoperative ultrasound examination. Tunica albuginea above the tumor was incised and the tumor was removed together with the surrounding apparently healthy tissue and sent for pathological examination. Follow-up of patients consisted only of scrotal and abdominal ultrasound and was performed once in 6 months.

Results: No perioperative surgical complications requiring further interventions were witnessed. Eighteen lesions included five Leydig cell tumors, three Sertoli cell tumors, three adenomatoid tumors, two fibrosis, one dermoid cyst, three segmental infarctions, and one hemangioma. No malignant characteristics were found in Leydig cell tumors (diameter >5 cm, nuclear atypia, >3 mitoses per 10 high-power fields, infiltrative borders, necrosis, and vascular invasion). No patients developed distant metastases or a contralateral testis tumor. Conclusion: Outstanding results for benign tumors using partial orchiectomy could be accomplished.

UP-358

Is Age an Independent Predictor for Survival Outcomes in Penile Cancer

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Introduction and Objective: Penile cancer is increasingly diagnosed in men >60 years. However, there is a commonly held presumption that younger patients have a more aggressive phenotype with higher risk of progression and death.

Materials and Methods: A prospectively collected database of patients with penile cancer between 2002-2017 referred to our supra-regional centre, was interrogated. Patients were split into three age groups: <55, 55-74, and >74 years, straddling the median age. Survival was calculated from date of index surgery/referral to date of death. Cancer specific mortality calculated. Hazard ratios for death were corrected for T-stage, grade and lymph node status. The Kaplan Meier method was used to analyse survival, and Cox

UP.356, Table 1. Demographic profile and outcomes of node positive patients of penile cancer

Total (n)	71
Age (median), years	55 (27 - 77)
Pathological T stage T1- n, (%)	7 (9.9)
T2- n, (%)	36 (50.7)
T3- n, (%)	26 (36.6)
T4- n, (%)	1 (1.4)
Pathological N stage pN1- n, (%)	8 (11.3)
pN2- n, (%)	9 (12.7)
pN3- n, (%)	54 (76.1)
Inguinal only positive	58 (81.6)
Inguinal + pelvic positive	13 (18.3)
Peri-nodal extension (PNE) - n, (%)	55 (77.4)
Lymphovascular invasion in primary (%)	18 (25.4)
Peri-neural invasion in primary (%)	26 (36.6)
Grade G1- n, (%)	0
G2- n, (%)	34 (47.9)
G3- n, (%)	37 (52.1)
Locoregional or metastatic recurrence- n, (%)	22 (31)
Disease free survival (mean), months	43.09 (34.04-52.15)
Estimated DFS 1 year (%)	67.2
3 years (%)	58.9
5 years (%)	37.1
Predictors for DFS	**p value**
Age	0.166
pT stage	0.000
pN stage	0.283
PNE	0.804
LVI	0.650
PNI	0.049
Pelvic node positivity	0.013
Grade	0.034
CT+/- RT	0.785
Inguinal node only positivity – DFS (mean), months	
with PNE	45.28 (33.81-56.75)
without PNE	54.61 (37.63- 71.59)
Pelvic node positivity – DFS (mean), months	22.78 (7.00- 38.55)
Pelvic node negative – DFS (mean), months	46.05 (34.85- 57.25)
Adjuvant CTRT or RT - DFS (mean), months	43.14 (32.91 - 53.37)
Neoadjuvant Chemotherapy - DFS (mean), months	25.93 (5.20-46.66)

regression tables to analyse hazard ratios for death. Patients were followed up to 5 years.

Results: 900 patients were included in the study. The median age was 63 (range 19-91). 270 patients were in Group 1, 438 in Group 2, and 192 in Group 3. Kaplan-Meier curves show a clear disparity in survival rates (Log Rank p<0.027). A greater proportion of patients in the older age groups had higher stage/grade of disease and N2/N3 disease. When corrected for stage, grade and nodal status, the hazard ratio for death between groups was still significant at 1.44 (p=0.03) for the oldest cohort.

Conclusion: This study shows that penile cancer specific survival is incrementally worse with increasing age. Factors other than recognised prognostic indicators may be involved. Possible explanations include patient co-morbidities and less access or desire for radical and adjuvant treatments.

UP-359

Carcinoid Syndrome Masquerading As a Testicular Tumor

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Introduction and Objective: Primary carcinoid tumor of testis is a rare neoplasm of neuroectoderm origin. This study presents a rare case of primary carcinoid tumor of testis.

Materials and Methods: A 53-year-old gentleman presented with painless swelling of the left testis with normal tumor markers, and underwent left high inguinal orchidectomy. The histopathology revealed an atypical carcinoid tumor with insular and trabecular growth pattern and mitotic activity of more than 3 per 10 high power fields with no other germ component or teratomatous components identified after extensive sampling. The tumor cells were diffusely immunopositive for cytokeratin, synaptophysin, and chromogranin but immune-negative for SALL4. Following a diagnosis of carcinoid tumor, serum testing for chromogranin A level and urinary excretion of 5-hydroxy indole acetic acid (5-HIAA) were done, which were within normal limits. Further staging whole body ^{68}Gallium- DOTANOC Positron Emission Tomography (PET) scan was done, which did not reveal any evidence of somatostatin receptor expressing residual disease in the body. Patient has been kept on surveillance with follow up CT scan and metabolic markers with no evidence of recurrence at six months follow-up.

Results: Though the carcinoid tumors conventionally described as tumors of low malignant potential, atypical carcinoids are known to be associated with 25% prevalence of metastasis and hence, close follow-up forms an integral part of management

Conclusion: Carcinoid syndrome rarely presents as an atypical carcinoid tumor of testis and surgical management along with metastasis workup and close surveillance form an integral part of management.

UP-360

Mucinous Adenocarcinoma of the Skene's Gland - A Case Report

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Introduction and Objective: We report one case of mucinous adenocarcinoma of Skene's gland in a 55-year-old female who presented with mild pain and swollen around urethra.

Materials and Methods: There was a cyst in periurethral glands, reaching bladder on MRI. We have performed laparoscopic and transvaginal resection of the cyst. Pathological result of the tumor was Mucinous adenocarcinoma of urethra staging pT3N0M0. Chemotherapy with Xeloda and radiation therapy was added one month after the surgery. Thereafter, we have performed laparoscopic radical cystectomy, urethra removal, total laparoscopic hysterectomy with bilateral salpingo-oophorectomy, anterior vaginal wall resection, ileal conduit procedure and both sides in the internal iliac and obturator nerve lymph node resection. The Pathology showed residual mucinous

adenocarcinoma of Skene's gland involving the urethra and urinary bladder with negative margins. The two-month follow-up, the abscesses ware found in the left labia majora, adductor muscle and dorsal part of pubis on the CT. We have drained the abscesses of all of those areas.

Results: During over the three-year follow-up, there was no evidence of recurrence and metastasis by radiologic evaluation after the surgeries.

Conclusion: We have experienced a very rare case of mucinous adenocarcinoma of Skene's gland with no recurrence or metastasis over three years after the surgery.

UP-361

Comparison of Inflammation-Based Scoring Systems as Predictors of Bleomycin Pulmonary Toxicity in Patients with Metastatic Germ Cell Tumors

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Introduction and Objective: Bleomycin pulmonary toxicity (BPT) is the most feared complication for patients who received first-line chemotherapy for metastatic germ cell tumor (GCT). However, predictive biomarkers of BPT have not been investigated. The aim of this study is to assess the predictive value of inflammation-based scores. Materials and Methods: Fifty-seven metastatic GCT patients were retrospectively evaluated. BPT was defined as the presence of asymptomatic decline in pulmonary function test, pulmonary symptoms, or interstitial pneumonia on computed tomography without infection. Patients were divided according to the neutrophil to lymphocyte ratio (NLR), platelet to lymphocyte ratio (PLR), systemic immune-inflammation index (SII), albumin to globulin ratio (AGR), Prognostic Nutritional Index (PNI), Glasgow Prognostic Index (GPS) and C-reactive protein (CRP). The area under the receiver operating characteristics curve (AUC) was calculated to assess the predictive ability of each scoring systems. Univariate and multivariate analyses were performed to identify the predictive scores associated with BPT. Results: Of the 57 patients, 15 patients developed BPT. The NLR had a highest AUC value (0.763) followed by PNI (0.749) in comparison with other inflammation-based scores. In the multivariate analysis, the NLR (odds ratio 11.5, p= 0.009) and PNI (odds ratio 9.07, p= 0.013) were independently associated with development of BPT. Conclusion: This study demonstrated that the NLR and PNI are independent predictive markers of developing BPT and superior to the other inflammation-based predictive scores.

UP-362

Cryptorchid Testicle Cancer Associated to Persistent Mullerian Duct Syndrome

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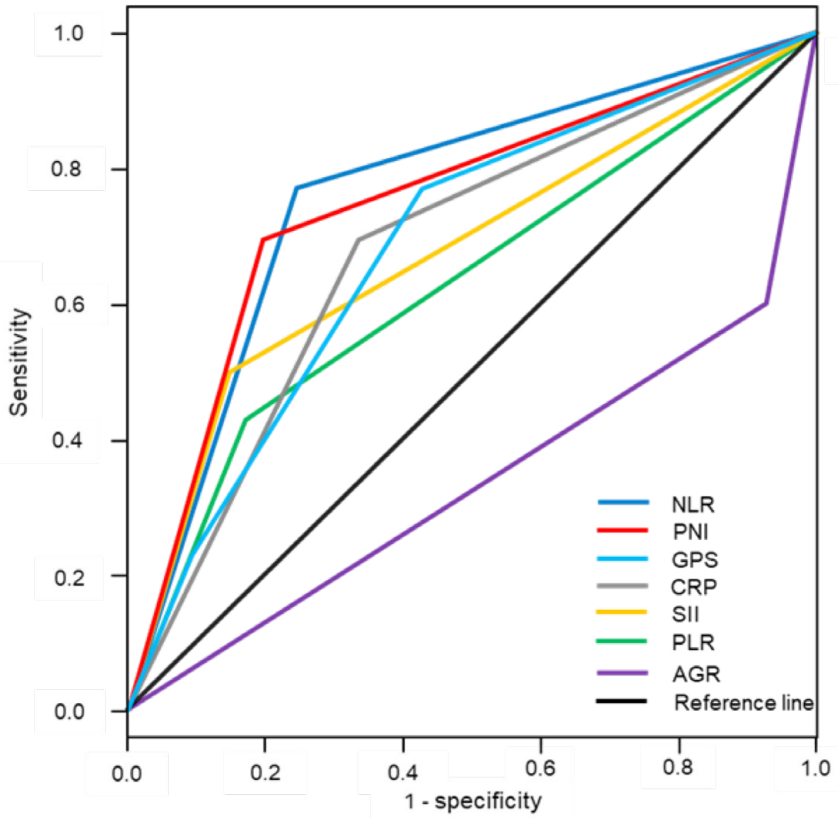
Introduction and Objective: Persistent mullerian duct syndrome (PMDS) or male with uterus is an autosomal recessive and rare disease which is usually discovered intra-operatively; only 222 cases are reported in the literature. Testicular cancer is more frequent with males aged between 15 and 34. Its incidence is 0.5 to 0.7% in the general population, whereas it is 2 to 3% in cryptorchid patients even the descended ones. The association between cancer in ectopic testis and PMDS is exceptional, only 58 cases were reported, 7 of them were bilateral with an impact of 12%. The objective is to specify etiopatogenic particularities, clinical, histological, therapeutic and particularities of this rare syndromic association.

Materials and Methods: Our study consists of a descriptive and retrospective analysis of 6 cases of cancer occurring among non descended cryptorchid testicles in abdominal position associated with PMDS, out of a total of 162 testicular tumors indexed over a period of 34 years.

Results: The average age was 39.8 years. Abdominal pain was the main revealing symptom associated with abdominopelvic mass. All patients were infertile except one. A primary infertility exploration constituted a circumstance of cancer discovery in 1 case. Excision of Mullerian duct was performed for all cases. The whole tumor was excised in 5 cases. For the sixth case, the act was limited to a biopsy due to the inoperability of the tumor. The tumor is germinal non-seminomatous in 100% of cases. Adjuvant chemotherapy was performed in all patients. The evolution was fatal in 5 out of 6 cases within 3 years.

UP.361, Figure 1. Comparison of the AUX for BPT between inflammation-based scores.



Factors	AUC	95% CI	*P* value
NLR	0.763	0.626 - 0.899	< 0.001
PNI	0.749	0.604 - 0.893	< 0.001
GPS	0.683	0.529 - 0.837	0.020
CRP	0.679	0.530 - 0.829	0.018
SII	0.677	0.519 - 0.834	0.028
PLR	0.629	0.482 - 0.776	0.085
AGR	0.337	0.202 - 0.471	0.017

Conclusion: The association of cancer on cryptorchid testicle and PMDS is rare. The diagnosis is usually late. The tumor is intra-abdominal and voluminous, and its excision is difficult and in some cases impossible. Chemotherapy is indicated in all cases due to the advanced stage and the histological type of the tumor. The prognosis is reserved and multidisciplinary care is necessary. Early diagnostic and therapeutic measures are needed to ameliorate the results of this pathology.

UP-363

Preputial Stone Disease: A Structured Review of Available Literature

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Introduction and Objective: Preputial stone disease is a rare urological entity that involves uncircumcised men with poor hygiene and coexistent phimosis mostly incriminated. Clinical examination usually suffices to make the diagnosis. We aim to summarize the available literature on the prevalence, diagnosis and management of this rare entity. Materials and

Methods: A literature search in PubMed and Scopus was conducted according to the PRISMA criteria, from 1900 to 2019 aiming to identify all references related to preputial stone disease. Data on presenting symptoms, causative factors, comorbidities, stone characteristics, type of intervention, post-operative complications, and follow-up were collected.

Results: The search yielded 19 eligible publications with a total of 20 patients. Asian countries had the highest prevalence of reported preputial calculi (80%), with India accounting for the vast majority of cases (13 patients, 65%). Mean age was 39 years (range: 3-92), while the single and most prominent causative factor was phimosis. Micturition problems, acute urinary retention and foul-smelling purulent penile discharge were among the most common presenting symptoms (16/20 patients, 80%). A greater proportion of patients had multiple stones (68.5%), versus a single preputial stone (31.5%). Stone size ranged from 0.4 to 4 cm. Calcium phosphate, calcium oxalate and uric acid stones appeared to be the most predominant stone compositions. Circumcision was the most frequently performed surgical procedure for the treatment of preputial stones. In two cases (10%) penile cancer was diagnosed. Follow-up lacked critical information (available for 3 patients, 15%).

Conclusion: Preputial calculi represent a very rare form of lower urinary tract urolithiasis. Inspissated smegma, urine stagnation and chronic preputial irritation play a crucial role in stone formation while phimosis adds to it as a causative factor. Circumcision remains the cornerstone of treatment. Prompt diagnosis and definitive treatment help to avoid potential long-term complications, namely obstructive uropathy, preputial skin fistula, and penile malignancy.

UP-364

Squamous Cell Carcinoma of Urethra - Late Complication of Urethroplasty?

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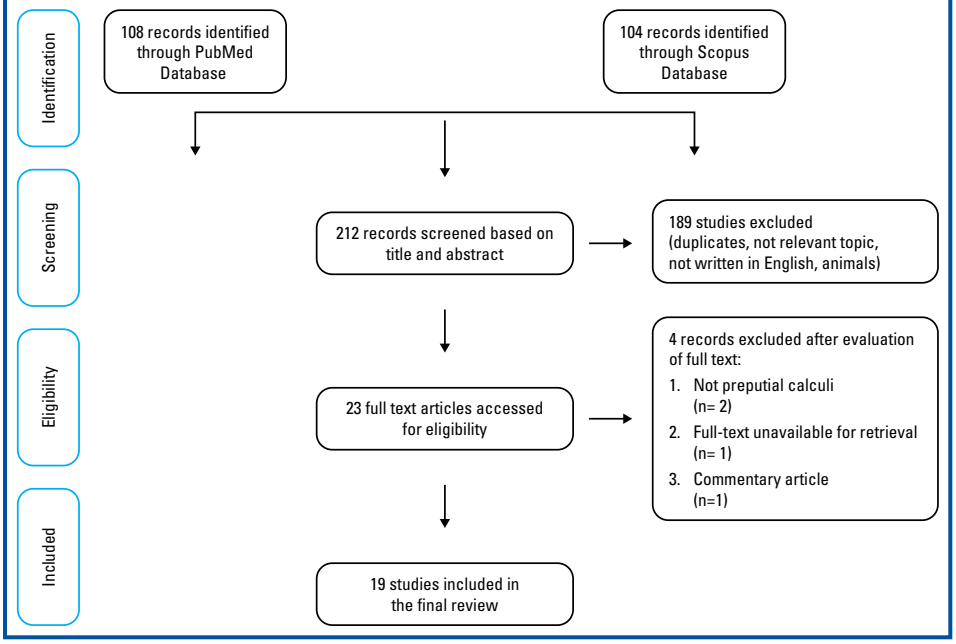
UP.363, Figure 1. PRISMA flow diagram of Preputial Calculi



Introduction and Objective: The primary squamous cell carcinoma of the urethra is one of the rarest malignancies of urinary tract (<1%). We give a clinical review of diagnostic and therapeutic aspects using a case report.

Materials and Methods: We report the rare case of a 69-year-old patient who presented to us with perineal pain. Eight years earlier he received an augmentation urethroplasty done with oral mucosa graft. On clinical evidence of a perineal abscess a surgical exploration was performed. Intraoperatively a periurethral abscess near a urethral lesion was seen. After successful wound conditioning, secondary wound closure was performed. Histologically, malignancy was excluded. Four months later, the patient presented again with a wound healing disorder. In MRI morphological abscess formation was seen. Again, we performed surgical therapy with successive wound conditioning. Histologically, a squamous cell carcinoma was described this time. Despite extensive resection, complete tumor removal could not be achieved. In x-ray imaging, metastasis was excluded. After consulting with the NCT (National Center For Tumor Diseases) in Heidelberg, Germany, platinum-based neoadjuvant chemotherapy has been recommended prior to an eventually radical surgical treatment. Results: Squamous cell carcinoma of the urethra is an extremely rare disorder with a high malignant potential. Diagnostics and therapeutics require a high degree of professional competence and interdisciplinarity. Conclusion: Due to the poor prognosis of urethral carcinoma, early and targeted diagnosis is essential for the further course of the disease. In addition, curative therapy settings require early radical surgical therapy.

UP-365

Video Endoscopic Inguinal Lymphadenectomy (VEIL) vs. Open Inguinal Lymph Node Dissection (OILND) for Treating Inguinal Lymph Node Metastasis of Penile Carcinoma: A Systematic Review and Meta-Analysis

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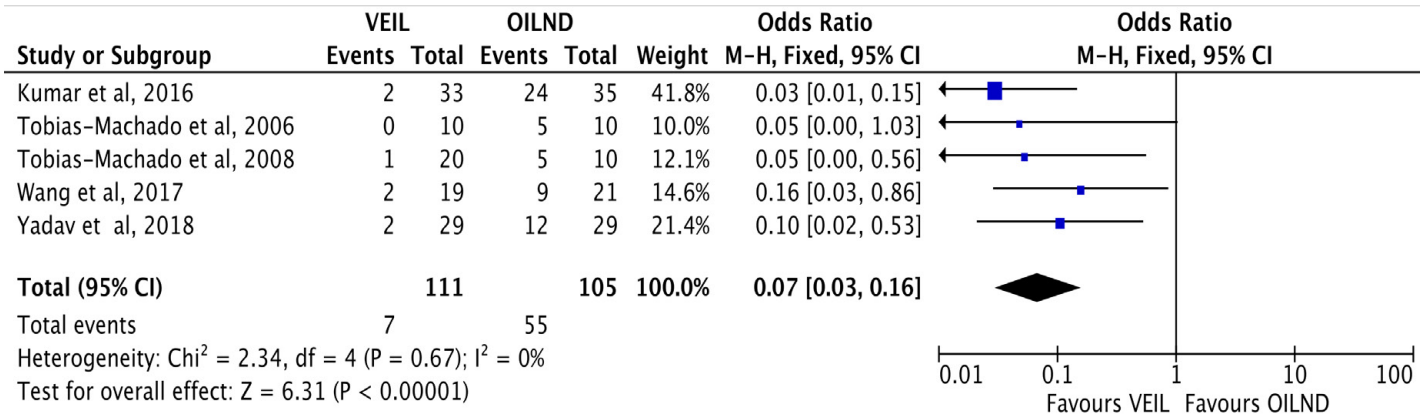
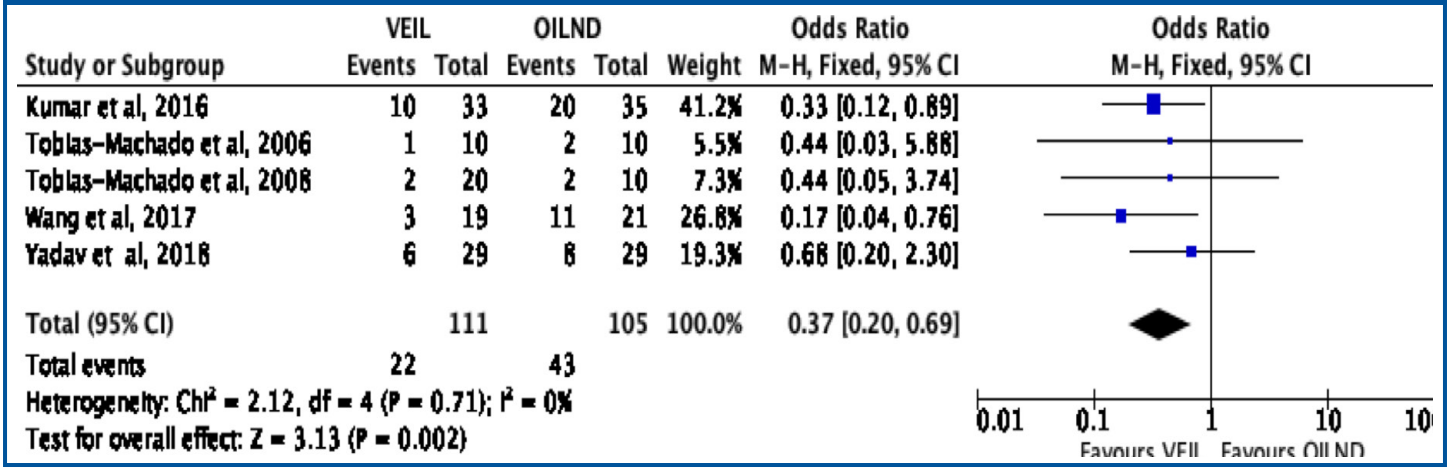
Introduction and Objective: Lymph node metastasis is one of the most important prognostic predictors of survival in penile cancer patients as its occurrence may reduce the average 5-year survival rate with increased number of lymph node involved. Open lymph node dissection being the most commonly used technique carries significant morbidity. This study aims to compare video endoscopic inguinal lymphadenectomy (VEIL) with open lymph node dissection in treating inguinal lymph node metastasis in penile cancer patients.

Materials and Methods: Studies were collected using several search engines, including PubMed, Science Direct, Cochrane, Scopus, and ClinicalKey. Duplication-free article underwent title and abstract examination, and selection of studies was done by two reviewers. Quality of studies were assessed with the Newcastle-Ottawa Scale and analyzed using Review Manager 5.3 to study meta-analysis. Results: A total of 674 publications were initially retrieved, and five articles were considered for both qualitative and quantitative analysis. From those studies, we found that the use of VEIL was significantly associated with decreased risk of skin-related complications (OR = 0.07, P<0.00001) and lower lymphatic complications (OR = 0.37, *P* = 0.002). However, the risk of hematoma, number of lymph nodes extracted during proce-

UP.365, Figure 1. Forest plot of the incidence of skin-related events in the included studies



UP.365, Figure 2. Forest plot of the incidence of lymphatic complications in the included studies



dure, and operative time, did not differ significantly between both groups.

Conclusion: VEIL may be a potential alternative for treating inguinal lymph node metastasis due to its ability to lower complications rate.

UP-366

Survey on the Practice of Active Surveillance for Prostate Cancer in the Middle East

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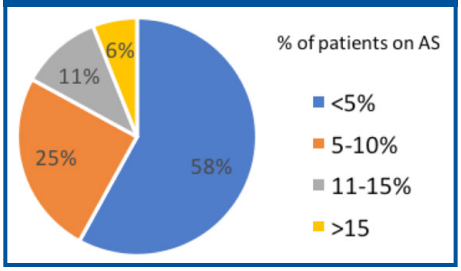
Introduction and Objective: Active surveillance (AS) is an alternative to active treatment in patients diagnosed with low-risk prostate cancer. In the Middle East data on this practice are absent. In this context, a national survey was carried out in Lebanon to better understand the practice of AS in our country.

Materials and Methods: A LimeSurvey electronic questionnaire was mailed to 206 Urologists, Oncologists, and Radiation Oncologists. The questionnaire was divided into three parts:1-Socio-demographic data: Age, gender, specialty, years of experience, University / non-university hospital. 2-Therapeutic options in the low risk cancer, advantages, and barriers to the choice of AS. 3-Common practice of AS: number of patients, protocol of inclusion, follow-up and shifting to active treatment.

Results: Fifty-two questionnaires were analyzed, the average age of respondents was 45 (30-75). Urologists accounted for 75%, followed by oncologists (15%) and radiation oncologists (10%). 27 respondents (52%) practiced in a university hospital. Distribution in years of experience <5 years; 5-10 years; 10-15 years and >15 years was 33%; 21%, 6% and 40%, respectively. More than 90% of respondents consider AS as a valid option, not compromising survival and preserving quality of life. Only 65% of respondents had AS patients, who accounted for less than 5% of their prostate cancer patients. Statistical analysis showed that physicians older than 40 and having more than 10 years of experience had a higher percentage of patients on AS (p= 0.001). The limitations of this approach from the point of view of practitioners are: Fear of losing the patient (67%), Patient anxiety (84%), absence of MDT meetings in the institution (61%), lack of clear inclusion/follow-up criteria (39%) and loss of the opportunity for cure (39%). The most common AS protocol used was the MSKCC 40.4%. Concerning the follow up protocol 60% of respondents did a PSA and DRE every 3 months then yearly MRI and TRUS biopsy if needed. 86% of physicians integrated the MRI in their decision making. The most important trigger for treatment was upgrade on biopsy (71%).

Conclusion: Our study shows that despite the good knowledge of the Lebanese practitioners regarding AS, it is not yet commonly applied. The main barrier against its implementation is patient and physician anxiety. Patient awareness campaigns and unified national recommendations are needed to encourage this practice.

UP.366, Figure 1. Percentage of patients on active surveillance in physicians practice.



UP-367

Do EMT Markers in Locally-Advanced Prostate Cancer for Predict Recurrence?

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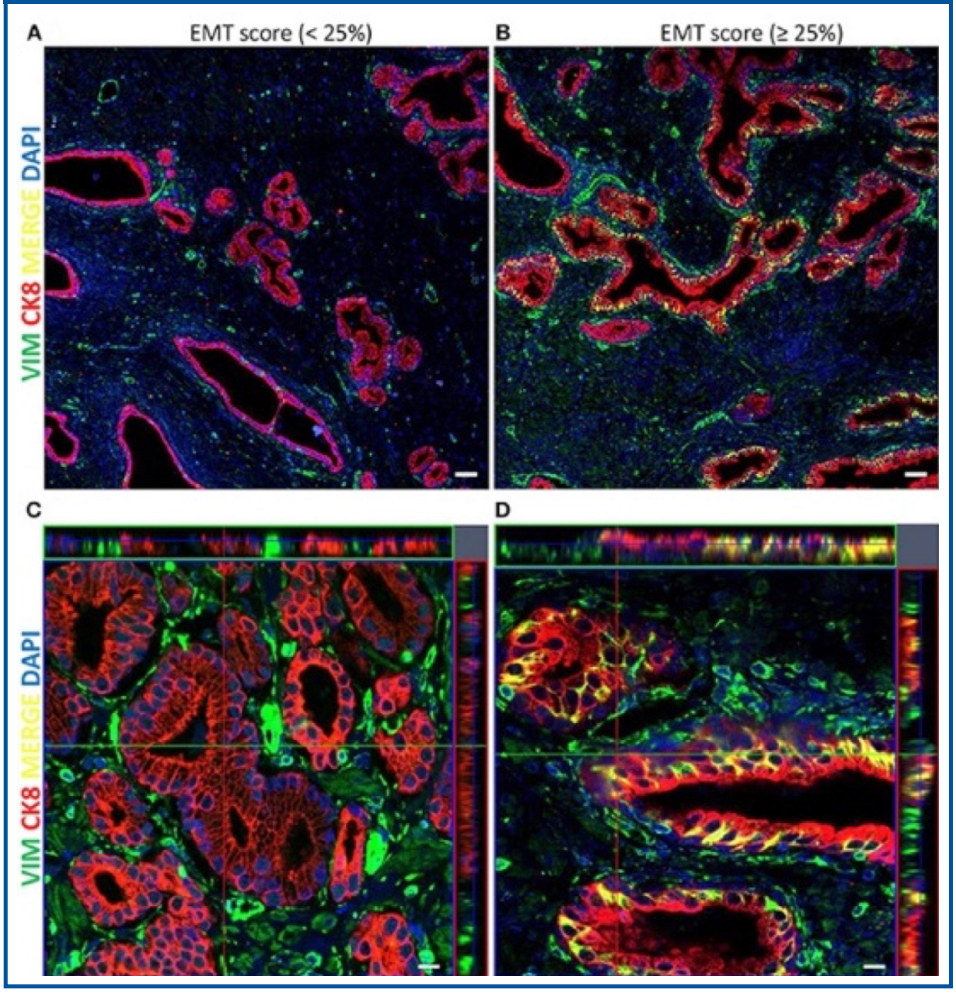
Introduction and Objective: Prostate cancer (PCa) is the second most frequent cause of cancer-related death in men worldwide. It is a heterogeneous disease at molecular and clinical levels which makes its prognosis and treatment outcome hard to predict. The epithelial-to-mesenchymal transition (EMT) marks a key step in the invasion and malignant progression of PCa. We sought to assess the co-expression of epithelial cytokeratin 8 (CK8) and mesenchymal vimentin (Vim) in locally-advanced PCa as indicators of EMT and consequently predictors of the progression status of the disease.

Materials and Methods: Co-expression of CK8 and Vim was evaluated by immunofluorescence (IF) on paraffin-embedded tissue sections of 122 patients with PCa who underwent radical prostatectomies between 1998 and 2016 at the American University of Beirut Medical Center (AUBMC). EMT score was calculated accordingly and then correlated with the patients' clinicopathological parameters and PSA failure.

Results: The co-expression of CK8/Vim (EMT score), was associated with increasing Gleason group. A highly significant linear association was detected wherein higher Gleason group was associated with higher mean EMT score. In addition, the median estimated biochemical recurrence-free survival for patients with <25% EMT score was almost double that of patients with more than 25%. The validity of this score for prediction of prognosis was further demonstrated using cox regression model. Our data also confirmed that the EMT score can predict PSA failure irrespective of Gleason group, pathological stage, or surgical margins.

Conclusion: This study suggests that assessment of molecular markers of EMT, particularly CK8 and Vim, in radical prostatectomy specimens, in addition to conventional clinicopathological prognostic parameters, can aid in the development of a novel system for predicting the prognosis of locally-advanced PCa.

UP.367, Figures 1-4.



UP-368

Correlation Between Preoperative Neutrophil-To-Lymphocyte Ratio (NLR) and Prostate Cancer Oncological Outcomes: A Retrospective Analysis

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Introduction and Objective: Inflammation plays an important role in tumor growth and propagation. A high neutrophil to lymphocyte ratio is a reflection of an insufficient immune response and a high tumor burden. Several studies have shown that the systemic inflammatory response is associated with worse prognosis in several tumors including bladder, gastric, colorectal, and prostate cancer.

Materials and Methods: We retrospectively studied 645 prostate cancer patients who underwent radical prostatectomy at our institution between 1998 and February 2018. Patients with no complete CBCD were excluded. Thus 435 patients were included in the retrospective analysis. The associations between NLR and preoperative PSA, Gleason score (TRUS biopsy and pathology), EPE, LVI, SV, SM were analyzed using the Mann Whitney U and the Fisher exact test to test the continuous and categorical variables, respectively.

Results: NLR ratio was calculated and compared for Gleason score primary, secondary and total on biopsy and pathology specimens, using NLR < 3 or > 3 as comparison. Gleason score 4 and 5 primary and Gleason 8 total had the highest NLR > 3 percentage, with no statistical significance. NLR ratio was also calculated on Gleason score classification of biopsy and pathology specimens. Gleason classification 4 was found to have the highest NLR > 3 percentage in both groups (31.7% and 22.2% respectively), however, no statistical significance was found (p-value 0.159 and 0.630 respectively). Presence of lymphovascular invasion on pathology was associated with higher NLR > 3 percentage (30% vs. 15%), however, difference was not statistically significant (p-value 0.068). Positive lymph node on pathology was associated with higher NLR > 3 percentage (30% vs. 15%), with no statistical significance (p-value 0.108). No association or statistical significance was found between perineural invasion or extraprostatic extension and NLR ratio. Pre-op PSA and NLR ratio were also compared with no statistical significance found. The NLR mean and median were calculated and compared on the same categories, however, no significance was observed.

Conclusion: In our retrospective study, higher preoperative NLR was not significantly associated with higher PSA value, or Gleason score nor with positive EPE, SM, SV, and LVI. Thus higher NLR was not associated with a more aggressive disease. Thus, the hypothesis of using preoperative hematological workup as a risk assessment of prostate cancer was not supported by our data.

UP-369

Diagnostic Performance of Ga-68 PSMA PET/CT in Intermediate and High Risk Prostate

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Introduction and Objective: Ga-68 PSMA PET/CT is an imaging modality that promises improved sensitivity and specificity of detection of prostate cancer

UP.367, Figures 1-4.

Clinicopathological variable	Total *N*	Categories	*n* (%)
Age (in years)	122	Mean (±SD)	62.1(±6.5)
		<70	109 (89.3)
		≥70	13 (10.7)
Gleason groups	122	A: Gleason scores 6 and 7(3 + 4)	63 (51.6)
		B: Gleason score 7(4 + 3)	30 (24.6)
		C: Gleason scores 8 and 9	29 (23.8)
Lympho-vascular invasion	61	Absent	55 (90.2)
		Present	6 (9.8)
Perineural invasion	94	Absent	28 (29.8)
		Present	66 (70.2)
Seminal vesicle invasion	118	Absent	96 (81.4)
		Present	22 (18.6)
Lymph node invasion	28	Absent	25 (89.3)
		Present	3 (10.7)
Pathological stage	120	pT2	35 (29.2)
		≥pT3	85 (70.8)
Preoperative PSA (in ng/mL)	116	Mean (±SD)	10.7(±9.8)
		<10	76 (65.5)
		≥10	40 (34.5)
Prostate size (in g)	120	Mean (±SD)	58.3 (±59.5)
		<50	65 (54.2)
		≥50	55 (45.8)
Tumor volume (in cc)	113	Mean (±SD)	14.9 (±21.9)
		<5	26 (23)
		≥5	87 (77)
PSA failure	87	No	45 (51.7)
		Yes	42 (48.3)

lesions based on their increased uptake of PSMA based radiotracers. It remains an emerging modality that has not yet been endorsed in the guidelines for management of prostate cancer pending more established evidence to prove its efficacy. The objective of the study is to assess the value of Ga-68 PSMA PET/CT in the detection and localization of patients diagnosed with intermediate or high risk prostate cancer.

Materials and Methods: Twenty-three patients with intermediate or high risk prostate cancer had undergone Ga-68 PSMA PET/CT imaging prior to robotic assisted radical prostatectomy. Surgical specimens were then submitted for histological examinations. Lesions visualized on PET/CT and on histology were independently mapped unto a 36-segment (PI-RADS v.2) map of the prostate. Concordance of visualization on PET/CT as compared to the histology as gold standard reference was then assessed.

Results: Sensitivity for all lesions identified on Ga-68 PSMA PET/CT was 42.37%; specificity was 88.61%. Both parameters were higher when considering only index lesions for which sensitivity was 68.42% and specificity was 98.23%. Sensitivity for the index lesions in intermediate risk group was 53.2% and was higher in the high risk group reaching 83.33%.

Conclusion: Ga-68 PSMA PET/CT provides accurate localization of tumor lesions in patients with intermediate and high risk prostate cancer.

UP.369, Table 1.

	Sensitivity	Specificity
All lesions	42.37%	88.61%
Index lesion	68.42%	98.23%
Intermediate risk group Index lesion	53.2%	
High risk group Index lesion	83.33%	

UP-370

The Role of Pre-Biopsy mpMRI in Staging Intermediate and High Risk Prostate Cancer

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Introduction and Objective: Prostate cancer (PCa) staging is an integral part in the management of prostate cancer. The gold standard for diagnosing lymph node invasion is a surgical lymphadenectomy, with no superior imaging modality available at the clinician's disposal. Multiparametric MRI (mpMRI) of the prostate is an imaging modality that has emerged in the latest year that allows to identify suspicious prostatic lesions and helps guide prostatic biopsies. Our aim in this study is to identify if a pre-biopsy mpMRI can provide enough information about pelvic lymph nodes in intermediate and high risk PCa patients, and whether it can substitute further cross sectional imaging (CSI) modalities of the abdomen and pelvis in these risk categories. Materials and Methods: Patients with intermediate and high risk prostate cancer were collected between January 2015 and January 2018, while excluding patients who did not undergo a pre-biopsy mpMRI or a CSI (N= 118). Data regarding biopsy result, PSA, MRI results, CSI imaging results were collected. Using Statistical Package for the Social Sciences (SPSS) version 24.0, statistical analysis was conducted using the McNemar Chi-square test and Cohen's kappa for analysis. Results: In the intermediate risk group, there was no added value to undergo further cross sectional imaging after a mpMRI was done (p= 1). In the high risk group, there was significant difference between the cross sectional imaging and mpMRI (p= 0.025).

Conclusion: A pre-biopsy mpMRI can substitute further cross sectional imaging in the intermediate D'Amico risk group, whereas in the high risk group, cross sectional imaging cannot be dropped since it can significantly alter further management strategies.

UP-371

Burden of High-Risk Prostate Cancer at a Tertiary Referral Center in the Middle East

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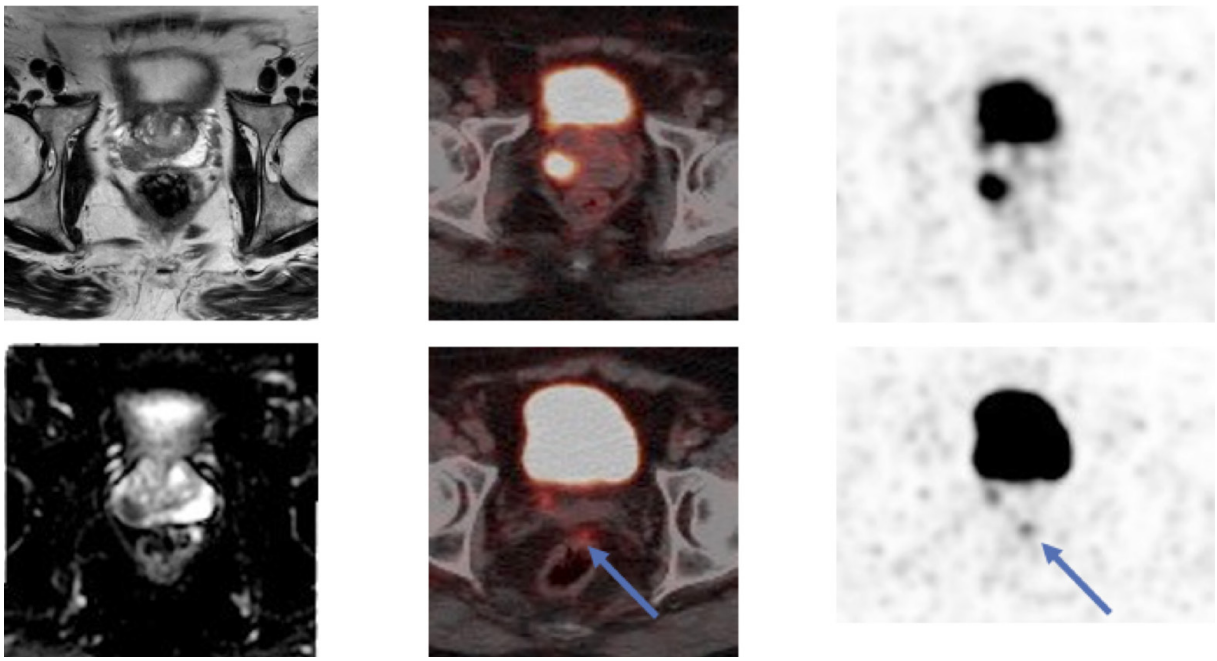
Introduction and Objective: Incidence of prostate cancer is increasing in the Middle East, however, remains low compared to the US. US Data shows 4% of patients present with metastatic disease. We hypothesized this percentage would be higher in patients presenting to AUBMC. Recent data from the CHAARTED, STAMPEDE and LATITUDE trials have supported early use of Abiraterone or Docetaxel in high-risk castrate-sensitive prostate cancer for improved survival rates.

Materials and Methods: Review of prostate cancer cases presenting to AUBMC from January 2010 to July 2015 was undertaken. Clinical and pathological data were collected after Institutional Review Board approval.

UP.369, Figure 1. Comparison of MRI for a lymph node detected on PET PSMA in a patient with high risk prostate cancer, and index lesion detection in comparison to MRI



Results: 559 cases of prostate cancer were identified. At diagnosis, median age was 66 (range 39-94); median BMI was 28.2 mg/m^2. 522 patients had staging data available; 89 (17%) had distant metastatic disease at diagnosis. The number of high-risk patients in this cohort who met criteria for STAMPEDE, CHAART-ED, and LATITUDE trials were 110 (21%), 52 (9%), and 25 (4.7%), respectively.

Conclusion: This is the first report of prostate cancer stage at diagnosis from a large cohort of patients from the Middle East with a significant proportion of patients meeting the high-risk criteria of recent studies. These data highlight the importance of multi-disciplinary management for the rising burden of prostate cancer in the region, and the potential for adding docetaxel or abiraterone to improve survival for high-risk patients.

UP-372

Is There an Optimal Curative Option in HIV Positive Men with Localized Prostate Cancer? A Systematic Review

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Introduction and Objective: We aimed to assess and compare the published outcome of curative treatment strategies in the management of localised Prostate Cancer [PCA] amongst HIV positive [HIV+] men. Materials and Methods: To review and compare all the relevant studies, a systematic search of the Cochrane Library of Systematic Reviews, the Scopus and PubMed databases was performed (January 1995 to November 2015) using pre-determined search terms. Management outcome measures for comparison included the rate of biochemical failure [BCF], survival benefit and complications.

Results: A total of 14 eligible articles were identified for inclusion, representing a total of 202 HIV+ men with PCA. RP was performed in 40/153 compared to 109/153 patients undergoing alternative (non-surgical) treatments options. Only 3 studies compared outcomes within their respective study cohort. One study (n=10) reported BCF results with 1/2 BCF patient in the surgical arm vs 1/8 BCF +ve patients in the non-surgical arm (mean 46 months follow-up), while two other studies reported no occurrences of BCF within both arms of their studies.

Conclusion: Due to paucity in the literature, there is insufficient evidence to support a certain treatment modality arm specifically for HIV+ men with localized PCA. An individualized management algorithm seems feasible within this cohort, until more definitive studies are performed.

UP-373

Prostate Cancer and the Internet: Fact or Fiction?

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Introduction and Objective: In today's information era, patients often seek information regarding their health using the internet. We aimed to assess the reliability and validity of information available on the internet regarding 'Prostate Cancer' (PCa).

Materials and Methods: The search term 'Prostate Cancer' was used on the Google website (June 2017). Critical Analysis was performed on the first 100 hits attained, using the JAMA benchmarks, DISCERN score, HON (Health on the Net) seal. Results: A total of 33 500 000 hits were returned, with the Top 100 hits, critically analysed. Ten links (duplicate links (7/10)/book reviews (1/10)/ dead sites (2/10)) were excluded. Therefore only 90 were analysed. The subcategories assessed, included; commercial (53,33%), University/Medical Centre (24,44%), Government (13,33%) and NGO/Not for Profit (8,89%). Sub-type of the information contents accessed, included; factual (74,44%), clinical trials (18,89%); stories (5,56%) and Q&A (1,11%). Validity scores rated as: HONCODE Score: HONcode seal positive (14,44%), and HONcode seal negative (85,56%). Website content based on the JAMA Benchmarks: 0 benchmarks (4,44%), 1 benchmark (16,67%), 2 benchmarks (34,44%), 3 benchmarks (27,78%), and 4 benchmarks (16,67%). DISCERN Score rated: 1 = 2 (2,22%), 2 = 25 (27,78%), 3 = 30(33,33%), 4 = 30 (33,33%), 5 = 3 (3,33%).

Conclusion: The overall 'quality' was observed to be accurate, but unreliable in itself as a source of information for patients. Urologists and their patients need to be aware of this 'quality vs quantity' discrepancy when sourcing PCa information on the internet.

UP.367, Figures 1-4.

Clinicopathological variable		EMT score			*P*-value
		<25	≥25	Total	
		N (%)	*N* (%)	*N* (%)	
Age (in years)	Mean (±SD)	61.6 (±6.2)	63.6 (±7.2)	62 (±6.5)	0.167
	<70	85 (93.4)	22 (81.5)	107 (90.7)	0.061
	≥70	6 (6.6)	5 (18.5)	11 (9.3)	
	Total	91 (100)	27 (100)	118 (100)	
Gleason groups	A: Gleason scores 6 and 7(3 + 4)	51 (56)	9 (33.3)	60 (50.8)	**0.014**
	B: Gleason score 7(4 + 3)	24 (26.4)	6 (22.2)	30 (25.4)	
	C: Gleason scores 8 and 9	16 (17.6)	12 (44.4)	28 (23.7)	
	Total	91 (100)	27 (100)	118 (100)	
Lympho-vascular invasion	Absent	32 (88.9)	22 (91.7)	54 (90)	0.725
	Present	4 (11.1)	2 (8.3)	6 (10)	
	Total	36 (100)	24 (100)	60 (100)	
Perineural invasion	Absent	15 (23.1)	10 (38.5)	25 (27.5)	0.137
	Present	50 (76.9)	16 (61.5)	66 (72.5)	
	Total	65 (100)	26 (100)	91 (100)	
Seminal vesicle invasion	Absent	74 (83.1)	19 (73.1)	93 (80.9)	0.251
	Present	15 (16.9)	7 (26.9)	22 (19.1)	
	Total	89 (100)	26 (100)	115 (100)	
Lymph node invasion	Absent	11 (91.7)	13 (86.7)	24 (88.9)	0.681
	Present	1 (8.3)	2 (13.3)	3 (11.1)	
	Total	12 (100)	15 (100)	27 (100)	
Pathological stage	pT2	21 (23.6)	13 (48.1)	34 (29.3)	**0.014**
	≥pT3	68 (76.4)	14 (51.9)	82 (70.7)	
	Total	89 (100)	27 (100)	116 (100)	
PSA failure	No	32 (49.2)	11 (55)	43 (50.6)	0.625
	Yes	33 (50.8)	9 (45)	42 (49.4)	
	Total	65 (100)	20 (100)	85 (100)	
Surgical margins	Negative	17 (18.7)	12 (44.4)	29 (24.6)	**0.006**
	Positive	74 (81.3)	15 (55.6)	89 (75.4)	
	Total	91 (100)	27 (100)	118 (100)	
Preoperative PSA (in ng/mL)	Mean (±SD)	10 (±7.1)	13.7 (±16.4)	10.9 (±9.9)	0.289
	<10	55 (63.2)	17 (68)	72 (64.3)	0.66
	≥10	32 (36.8)	8 (32)	40 (35.7)	
	Total	87 (100)	25 (100)	112 (100)	
Prostate size (in g)	Mean (±SD)	58.5 (±67.7)	60.1 (±24.8)	58.9 (±60.4)	0.903
	<50	48 (53.9)	13 (48.1)	61 (52.6)	0.598
	≥50	41 (46.1)	14 (51.9)	55 (47.4)	
	Total	89 (100)	27 (100)	116 (100)	
Tumor volume (in cc)	Mean (±SD)	16.1 (±24.7)	12.3 (±9.4)	15.2 (±22.2)	0.461
	<5	18 (21.4)	7 (28)	25 (22.9)	0.493
	≥5	66 (78.6)	18 (72)	84 (77.1)	
	Total	84 (100)	25 (100)	109 (100)	

Bold values represent statistically significant data.

UP-374

A Comparison of Prostate Volumes Measured by Transrectal Ultrasound and Magnetic Resonance Imaging

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Introduction and Objective: In this analysis we compare prostate volumes measured by transrectal ultrasound (TRUS) by urologists with a different level of experience versus volumes measured by magnetic resonance imaging (MRI).

Materials and Methods: The study comprises a total of 492 patients who underwent prostate biopsy for elevated PSA between February 2015 and October 2018. All patients underwent a mpMRI of the pros-

UP.367, Figures 1-4.

Clinicopathological variable		EMT score			*P*-value
		<25	≥25	Total	
		N (%)	*N* (%)	*N* (%)	
Age (in years)	Mean (±SD)	61.6 (±6.2)	63.6 (±7.2)	62 (±6.5)	0.167
	<70	85 (93.4)	22 (81.5)	107 (90.7)	0.061
	≥70	6 (6.6)	5 (18.5)	11 (9.3)	
	Total	91 (100)	27 (100)	118 (100)	
Gleason groups	A: Gleason scores 6 and 7(3 + 4)	51 (56)	9 (33.3)	60 (50.8)	**0.014**
	B: Gleason score 7(4 + 3)	24 (26.4)	6 (22.2)	30 (25.4)	
	C: Gleason scores 8 and 9	16 (17.6)	12 (44.4)	28 (23.7)	
	Total	91 (100)	27 (100)	118 (100)	
Lympho-vascular invasion	Absent	32 (88.9)	22 (91.7)	54 (90)	0.725
	Present	4 (11.1)	2 (8.3)	6 (10)	
	Total	36 (100)	24 (100)	60 (100)	
Perineural invasion	Absent	15 (23.1)	10 (38.5)	25 (27.5)	0.137
	Present	50 (76.9)	16 (61.5)	66 (72.5)	
	Total	65 (100)	26 (100)	91 (100)	
Seminal vesicle invasion	Absent	74 (83.1)	19 (73.1)	93 (80.9)	0.251
	Present	15 (16.9)	7 (26.9)	22 (19.1)	
	Total	89 (100)	26 (100)	115 (100)	
Lymph node invasion	Absent	11 (91.7)	13 (86.7)	24 (88.9)	0.681
	Present	1 (8.3)	2 (13.3)	3 (11.1)	
	Total	12 (100)	15 (100)	27 (100)	
Pathological stage	pT2	21 (23.6)	13 (48.1)	34 (29.3)	**0.014**
	≥pT3	68 (76.4)	14 (51.9)	82 (70.7)	
	Total	89 (100)	27 (100)	116 (100)	
PSA failure	No	32 (49.2)	11 (55)	43 (50.6)	0.625
	Yes	33 (50.8)	9 (45)	42 (49.4)	
	Total	65 (100)	20 (100)	85 (100)	
Surgical margins	Negative	17 (18.7)	12 (44.4)	29 (24.6)	**0.006**
	Positive	74 (81.3)	15 (55.6)	89 (75.4)	
	Total	91 (100)	27 (100)	118 (100)	
Preoperative PSA (in ng/mL)	Mean (±SD)	10 (±7.1)	13.7 (±16.4)	10.9 (±9.9)	0.289
	<10	55 (63.2)	17 (68)	72 (64.3)	0.66
	≥10	32 (36.8)	8 (32)	40 (35.7)	
	Total	87 (100)	25 (100)	112 (100)	
Prostate size (in g)	Mean (±SD)	58.5 (±67.7)	60.1 (±24.8)	58.9 (±60.4)	0.903
	<50	48 (53.9)	13 (48.1)	61 (52.6)	0.596
	≥50	41 (46.1)	14 (51.9)	55 (47.4)	
	Total	89 (100)	27 (100)	116 (100)	
Tumor volume (in cc)	Mean (±SD)	16.1 (±24.7)	12.3 (±9.4)	15.2 (±22.2)	0.461
	<5	18 (21.4)	7 (28)	25 (22.9)	0.493
	≥5	66 (78.6)	18 (72)	84 (77.1)	
	Total	84 (100)	25 (100)	109 (100)	

Bold values represent statistically significant data.

UP.370, Tables 1 and 2.

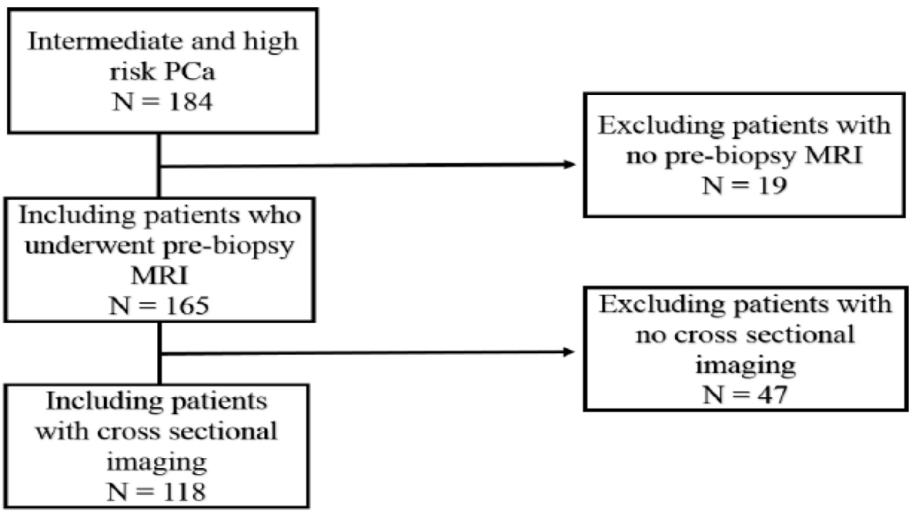
Table 1: Patient population characteristics

Patient characteristics	
Age mean (Range)	64.3 (52-81)
PSA mean (Range)	13.45 (1.9-81.9)
TRUS Biopsy results - N (%)	
Gleason 6 (3+3)	4 (3.4%)
Gleason 7 (3+4)	30 (25.4)
Gleason 7 (4+3)	45 (38.1)
Gleason >8	39 (33.1)
D'Amico Classification - N (%)	
Intermediate risk	73 (62%)
High risk	45 (38%)
CSI ordered - N (%)	
CT scan of the Abdomen and Pelvis	61 (52%)
MRI of the Abdomen and Pelvis	18 (15%)
PET PSMA	37 (31%)

Table 2: Comparison between mpMRI and CSI in intermediate risk subgroup

	mpMRI	CSI	p-value	kappa
Intermediate risk group				
LN positive	1	1	1.00	1
LN negative	72	72		
High risk group				
LN positive	3	6	0.025	0.63
LN negative	42	39		

UP.370, Figure 1. Flow diagram of study



tate, and subsequently had their prostate measured by TRUS before performing biopsy using Toshiba Aplio 500 ultrasound device. TRUS measurements were performed by 3 urologists with 20, 7 and 2 years of experience. Prostate volumes were calculated using the largest diameter in 3 planes (width x height x depth x 0,523) in both TRUS and MRI measurements. Results: The average age was 62.74 years (31 – 81 years); average PSA was 8.36ng/mL (0.53 – 72.50ng/mL). The results of prostate volume analysis are presented in the accompanying table.

Conclusion: Using transrectal ultrasound, calculated prostate volumes were on average 9.24 mL larger than when using MRI. All 3 urologists over measured the prostate when compared with MRI, with the most experienced urologist reaching the smallest difference. With the recent increase of PSA density usage, accurate prostate volume measurement has gained importance as even small change in volume may influence a decision whether biopsy will or will not be performed. Interim analyses such as this one may help clinicians find and improve their weak points.

UP-375

PSA Density Measured by MRI Versus Transrectal Ultrasonography in PIRADS 3 Lesions as a Triage Test in Prostate Cancer Diagnostic Algorithm

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Introduction and Objective: Current recommendations are to perform targeted biopsies of lesion PIRADS 4 and 5, but questions still remain about PIRADS 3 lesions. PSA density (PSAd) is one of the most used tools to predict the outcome of prostate biopsies. The aim of this study is to compare the predictive value of PSA density measured by transrectal ultrasound (TRUS) vs. that measured by MRI in PI-RADS 3 lesions. Materials and Methods: Multiparametric MRI and MRI/TRUS fusion targeted prostate biopsy followed by systematic biopsy (12 cores) were performed in 265 patients with an elevation of PSA and with PIRADS 3 lesion found on mpMRI. Overall detection rates of prostate cancer (Pca) and of clinically significant prostate cancer (CSPCa) were stratified according PSA density with cut offs of 0.1 ng/mL/mL; 0.15 ng/ mL/mL and 0.2 ng/ mL/mL. PSA density obtained by both TRUS and MRI measurements was evaluated in all patients. Numbers of avoided biopsies and of missed (clinically significant) prostate cancers were calculated in PSAd groups defined above. Results: Prostate cancer was diagnosed in 105 patients with 48 patients having clinically significant prostate cancer. Results of detection rates are in the table.

Conclusion: If PSA density measured by MRI served as the triage test in PIRADS 3 lesions with recommended cut-off at 0.15, a significant number of biopsies could be avoided, and a considerable amount of clinically insignificant prostate cancers would not be diagnosed. On the other hand, a small (but not insignificant) number of clinically significant prostate cancers would be missed. When we compare MRI and TRUS density, MRI has better sensitivity in the measurement of PSA density.

UP-376

First Insight into the Use and Results of a Contemporaneous Hospital Medical Record Data Entry Tool for Patient Reported Prostate Cancer Treatment Outcome Measures

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Introduction and Objective: To present performance characteristic and first results of contemporaneous data entry of prostate cancer outcome data from an integrated hospital medical record (HMR) system.

Materials and Methods: The International Consortium for Health Outcome Measurement (ICHOM) Localized Prostate Cancer data set includes the NPCA baseline data set and the Expanded Prostate Cancer

UP.374, Table 1.

	experience	No of pts	Exam type	min	max	avg	Size difference
All patients		492	TRUS	20,00	187,00	62,66	9,24
			MRI	10,25	190,44	53,43	
Urologist 1	20 yrs	122	TRUS	21,00	146,00	59,98	5,31
			MRI	20,67	132,21	54,67	
Urologist 2	7 yrs	211	TRUS	20,00	187,00	66,35	13,21
			MRI	10,25	190,44	53,14	
Urologist 3	2 yrs	159	TRUS	20,00	170,00	60,17	7,38
			MRI	14,59	163,88	52,79	

UP.375, Table 1.

	Number of patients	Overall prostate cancer	Clinically significant prostate cancer	Number of patients	Overall prostate cancer	Clinically significant prostate cancer
		MRI			TRUS	
PSA Density ≤0.1	72 27.2%	18 6.8%	7 2.6%	115 43.4%	28 10.6%	8 3%
PSA Density ≤0.15	146 55.1%	37 13.9%	14 5.3%	191 70.1%	59 22.3%	23 8.7%
PSA Density ≤0.2	183 69.1%	53 20%	25 9.4%	221 83.4%	74 27.9%	30 11.3%

Index Composite (EPIC-26) to evaluate outcomes of prostate cancer treatment. A data collection tool for the ICHOM data set was build into the clinical and operational processes of the integrated HMR system Epic at our institution. EPIC-26 data was collected from patients prior to and after treatment and automatically combined with existing NPCA data. All results were manually reviewed. We present our results for the components urinary function, urinary incontinence, bowel function and sexual function and quality of life.

Results: A total of 3590 EPIC-26 were entered into the HMR. 223 patients with consecutive EPIC-26 entries were identified and results analyzed. Of those 135 patients underwent robotic prostatectomy, 67 brachytherapy, 15 active surveillance, 4 radiation therapy and 2 patients underwent hormonal therapy.

Conclusion: Using an automated data compiling system looks promising for future monitoring of patient treatment outcomes. Results are valid and are comparable to those in recent literature. We encountered and have addressed numerous problems due to technical HMR processes and most encountered problems were caused by human factors, like erroneous data entry.

UP-377

Study of Prostate Specific Antigen to Serum Testosterone Ratio as a Predictor of Clinic-Pathological Aggressiveness in Patients with Prostate Cancer

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Introduction and Objective: Various studies analysed the utility of Serum testosterone (sTT) for predicting the aggressive clinicopathological features, however results are conflicting. The utility of serum Prostate-specific antigen (sPSA) is limited by its low specificity. Hence the present study was aimed to analyse prospectively the role of Serum PSA to Serum total testosterone (PSA/sTT) ratio as a better predictor of adverse clinicopathological features of carcinoma prostate, when compared to PSA alone.

Materials and Methods: One-hundred-twenty consecutive men presented with treatment naive carcinoma prostate, during the period of 1 year, were included. The ratio of sTT to PSA (sTT/PSA) was calculated after transforming sTT measurements from ng/dL to ng/mL. The receiver operator characteristic (ROC) method was used to evaluate the role of the sTT/PSA ratio, testosterone and PSA as predictors of adverse clinicopathological features prostate cancer such as clinical staging and grade of the disease, represented by International Society of Urological Pathology (ISUP) grade groups.

Results: The accuracy of the sTT/PSA ratio in predicting the adverse clinicopathological features of carcinoma prostate, represented by the area under the curve (AUC) 0.774 (95% CI 0.566- 0.764, p <0.001), for clinical staging and 0.665 (95% CI 0.692- 0.857, p value 0.004) for grade. Optimizing the sensitivity and specificity of the sTT/PSA ratio using the ROC provided a cutoff point of 4.2, which corresponded to 84% and 92% sensitivity for stage and grade respectively. However, we found less specificity in predicting the same. However, when compared with PSA alone, sTT/PSA ratio was found to have significantly less sensitivity and specificity.

Conclusion: Our study results do not support the additional utility of using of the sTT-to-PSA ratio for

UP.376, Table 1.

	Baseline	3 months	6 months	1 year	2 years
Urine function-iritattive/obstructive /No problem 0 - Big problem 16/					
Surgery	2.65	2.27	1.30	1.39	0.92
Brachytherapy	1.36	5.22	4	3.17	2.25
Urinary incontinence /More than once/day 1 – 5 Rarely/					
Surgery	4.51	2.49	3.64	3.37	3.62
Brachytherapy	4.72	4.31	4.14	4.72	4.63
Bowel function /No problem 0 – big problem 24/					
Surgery	1.68	2	0.91	0.98	0.85
Brachytherapy	1.09	2.78	2.40	1.83	0.5
Sexual function /Very poor 5 – very good 24/					
Surgery	15.37	8.03	7.32	8.1	8.69
Brachytherapy	17.5	12.96	13.5	10.79	9.38
Quality of life /very good 5 – Very bad 25/					
Surgery	6.18	6.67	5.94	6.44	5.15
Brachytherapy	5.56	6.31	6.56	5.96	5.4

predicting the adverse clinicopathological characteristics of carcinoma prostate.

UP-378

Did Robotic Prostatectomy Make Things Different – For Patient or Surgeon?

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Introduction and Objective: The surgical approach for radical prostatectomy has witnessed a paradigm shift over the years from open retropubic radical prostatectomy (ORP) to robot assisted radical prostatectomy (RARP). We compared the pre-operative parameters and postoperative outcomes of these two procedures.

Materials and Methods: A total of 182 patients underwent radical prostatectomy, from year 2010 till 2018 which included 49 ORP and 133 RARP, by the dedicated Uro-oncologists. Robotic cases were operated by da Vinci Xi ® system after the installation in year 2014. We retrospectively analysed the preoperative and perioperative parameters of prospectively maintained database of radical prostatectomy at a tertiary care cancer institute.

Results: RARP scored over ORP for estimated blood loss, length of hospital stay and day of catheter/drain removal (p= 0.000). On the other hand, ORP had better outcomes in terms of lymph node yield (0.046), overall margin positivity (0.006) and multifocal margin positivity (0.004). RARP cohort had a significantly higher proportion of patients with pT3a and pT3b stages (p= 0.015). There was significantly higher up-staging of T stage in RARP, whereas for ORP there was significant down-staging (p= 0.000). In grade group 4 & 5, a trend towards upstaging was seen in both RARP & ORP, but statistical significance was achieved only in ORP cohort. Here, the cost and functional outcomes were not compared as median follow up; in both approaches were different [67 months ORP VS 12 months RARP].

Conclusion: When oncological outcomes are taken into consideration ORP scores over RARP. The subtle advantages of robotic prostatectomy and the obvious surgeon comfort of view, dexterity of dissection, ease of doing anastomosis, finally contributing to ease of surgery would make surgeons prefer a robotic approach whenever robot is available.

UP.378, Table 1. Demographic profile and perioperative outcomes of radical prostatectomy patients divided in two groups: robot assisted radical prostatectomy (RARP) and open radical prostatectomy (ORP)

	Open (ORP)	Robotic (RARP)	P value
Number (n)	49	133	
Age (median), years	66	64	0.321
Baseline PSA (median), ng/ml	9.8	11.9	0.185
T stage			0.238
T1c	0%	3.8%	
T2a	14.6%	9.8%	
T2b	35.4%	23.3%	
T2c	25%	27.1%	
T3a	22.9%	24.8%	
T3b	2.1%	10.8%	
T4	0%	0.8%	
Gleason score			0.003
3+3	50.0%	21.8%	
3+4	31.3%	27.8%	
4+3	12.5%	27.1%	
4+4	4.2%	19.5%	
4+5	2.1%	1.5%	
5+4	0%	0.8%	
5+5	0%	1.5%	
Estimated blood loss (median), ml	1250 (1100-4500)	200 (50-1100)	0.000
Length of stay (median), days	9 (5-14)	4 (2-33)	0.000
Drain removal day (median), days	8 (3-14)	2 (1-33)	0.000
Catheter removal day (median)	14 (12- 16)	8 (7 -25)	
Lymph node yield (median)	19 (7-32)	16 (5-40)	0.046
Lymph node positivity (%)	10.2	13.6	0.679
Change in staging (pathological versus clinical)			0.000
up-stage (%)	16.7	34.6	
down-stage (%)	62.5	13.8	
no change (%)	20.8	51.5	
Margin positivity	44.9%	68.2%	0.006
Multifocal margin positivity	16.3%	40.2%	0.004
Follow up (median), months	67 (1- 102)	12 (1-72)	0.000

UP-379

The Effect of Antibiotics on Elevated Prostate-Specific Antigen Levels in Prostatic Diseases, Is It Recommended? For Whom?

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Introduction and objective: Serum PSA is an organ-specific marker that may be affected by any prostatic disease. False high PSA value not also resulted in unnecessary prostatic biopsy in benign prostatic hyperplasia, but also upgrade the risk group stratification of prostate cancer resulting in over-treatment. Previous studies examining antibiotic therapy had yielded conflicting results in PSA changes. This prospective study aimed to investigate the possible effects of 3-4 weeks of antibiotic on PSA. Materials and Methods: In a tertiary urology center, men presented with elevated PSA underwent prostatic biopsy continued on antibiotic as ciprofloxacin 500 mg B.I.D for 3-4 weeks. An additional PSA measurement was also performed at end of the treatment. Results: Among 512 patients at prostate unit, 153 completed the treatment and the additional PSA measurement had decreased PSA from 11.6 (0.4-109) to 7.7 (0.1-100) (P <0.001). Prostatic adenocarcinoma (PC) of 47 patient had PSA change from 11.7 (0.1-109) to 18.5 (0.1-100) (P= 0.1). Twenty one patients presented either histopathology proven prostatitis or culture proven UTI, had PSA decreased from 12.6 (0.4-109) to 8.1 (0.4-100) (P=0.008). After exclusion of PC and stratify the PSA into 3 groups (shown in table 1) there were significant decrease in PSA in all groups after antibiotic treatment. Conclusion: Antibiotics statistically significant decrease PSA of benign causes and had no statistically significant PSA change of prostate cancer. Patients with an elevated serum PSA should have antibiotics for 3-4 weeks before biopsy even in the absence of clinical symptoms of prostatitis.

UP-380

Immunohistochemical Biomarker to Predict Mortality in Lymph Node Positive Patients after Radical Prostatectomy

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UP.379, Table 1. PSA stratification groups after exclusion of prostate cancer patients

PSA stratification Groups	Number of patients	Pre-PSA	Post-PSA	P-value
4 -10	40	7.7(4.2-10)	5(0.5-12.6)	<0.001
10.1 - 20	45	13.7(10.2-20)	7.2(1.3-30)	<0.001
>20	19	26.2(20-89)	21.8(0.5-89)	0.01

Introduction and Objective: Dystroglycan (DG) is a cell surface receptor for extracellular matrix proteins involved in tissue mechanical stability and matrix organization. Initial work has demonstrated that a-DG expression is decreased in many types of adenocarcinoma, including prostate, and potentially associated with the development of metastatic disease. However, the consistency between prostate and lymph node a-DG staining has not been previously reported. Further, lack of DG staining has been associated with increased mortality in renal, gastric and pancreatic cancer. Identification of an immunohistochemical marker associated with prostate cancer grade, stage, need for adjuvant or salvage therapy and mortality would have potential clinical value.

Materials and Methods: Node positive, margin negative radical prostatectomy specimens at a single institution from 1982 to 2012 were reviewed and identified 35 prostate specimens, including 26 patients with available tissue from both the primary prostatectomy and lymph node specimens. The expression levels of the a-DG subunit were analyzed using immunohistochemistry and graded from 0 to 4. Survival was compared in different staining pattern groups.

Results: Strength of a-DG staining was found to be consistent between prostate and lymph node specimens (p <0.004). The median overall survival was shorter in those without a-DG staining in the prostate compared to those with positive staining, but this difference was not statistically significant (13.2 years vs. 19.4 years, p= 0.21). In addition, negative staining was associated with higher mean PSA, pathologic T stage, Gleason grade and the need for adjuvant or salvage therapy compared to positive group but none reached statistical significance (16.06 ng/mL vs 11.67 ng/mL, p= 0.79; 89% vs 68%, p= 0.38; 33.3% vs 23.1%, p= 0.66; 88.9% vs 76.9%, p= 0.44).

Conclusion: DG expression by immunohistochemistry staining was consistent between prostate and metastatic lymph node specimens. In a small cohort of prostate cancer patients with margin negative but node positive disease, DG staining was associated with a numeric, albeit non-statistically significant, increase in serum PSA, Gleason grade, pathologic stage and adjuvant therapy utilization. Given lack of DG staining association with decreased survival in renal, gastric and pancreatic cancers, we believe its further assessment in prostate cancer is warranted.

UP-381

Salvage Radical Prostatectomy After Focal Irreversible Electroporation for Prostate Cancer: A Case Series Reporting Oncological Outcomes

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Introduction and Objective: Following focal irreversible electroporation (IRE) for prostate cancer, a proportion of men will develop recurrent disease. Currently there is no consensus on how to best manage these patients. One option is radical prostatectomy (RP). However, there is only limited data on the oncological and functional outcomes of RP post focal-IRE. This study aimed to assess these outcomes of RP post focal IRE.

Materials and Methods: We retrospectively identified 9 cases of patients who underwent salvage robot assisted radical prostatectomy (RARP) for recurrent prostate cancer after focal irreversible electroporation (IRE) at our institution between 2014 and 2018. We present the oncological and functional outcomes in this group of patients.

Results: Nine patients underwent RARP (median age 63, median PSA at time of RP 6.8 ng/mL median follow up 19 months). All cases were indicated following transperineal biopsy proven prostate cancer recurrence. Two cases had both infield and out-of-field recurrence at a median of 13.5 months post focal IRE. One case had an infield only recurrence at 64 months post IRE and six cases had an out-of-field only recurrence at a median of 29 months post IRE. Bilateral nerve sparing could be performed in 5 cases (56%), whilst in 4 cases (44%), only partial nerve sparing could be performed. In two cases, there was significant dense scarring, as a result of the previous IRE, near the neurovascular bundle that needed to be sacrificed in the interest of oncological safety. Six cases had negative surgical margins, two cases had a small focus of positive surgical margin and one had a positive surgical margin. Eight patients had no significant post-operative complications; however, one patient developed a pelvic collection from a ureteric leak requiring drainage and a nephrostomy tube, which was thought to be due to difficulty in a left sided prostatic dissection and anastomosis of the bladder to the urethra. All patients with >12-month follow up are continent and have reasonable erectile function with the aid of medical therapy.

Conclusion: Although scarring is evident at the time of operation, salvage RP after focal IRE is safe and yields an acceptable oncological and functional outcome in most patients.

UP-382

Salvage Irreversible Electroporation for Locally Recurrent Prostate Cancer after Radiotherapy – Oncologic and Functional Outcomes

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Introduction and Objective: Around one third of patients who undergo whole gland radiotherapy as primary treatment for localised prostate cancer have radio-recurrent disease. Radical prostatectomy post radiotherapy is challenging and is associated with significant morbidity. Focal ablative treatments may be an emerging therapy in these patients and there is a lack of studies evaluating their efficacy. Thus, the objective of this presentation is to evaluate the oncologic and functional outcomes of salvage irreversible electroporation (s-IRE) for radio-recurrent prostate cancer.

Materials and Methods: This prospective study protocol received institutional ethics approval. 44 patients with localised, radio-recurrent prostate cancer without evidence of metastatic disease were recruited between 2013 and 2018 and underwent s-IRE. Oncological outcomes were evaluated according to serial PSA, 6-month mpMRI and 12-month transperineal prostate biopsy. Functional outcomes were collected using the Expanded Prostate Cancer Index Composite (EPIC), the AUA symptom score and the 12-item short-form health survey.

Results: Of the 44 patients recruited, 11 (25%) were previously treated with external beam radiotherapy, 31 (70%) post low dose brachytherapy and 2 (5%) post high dose rate brachytherapy. Median pre s-IRE PSA was 3.3 ng/mL (1.7-5.6). Median follow up was 2.1 years. Post s-IRE, the median PSA nadir was 0.11ng/mL. Twenty-three patients agreed to undergo repeat transperineal biopsy at 12 months. Of these 18 (78.2%) had a negative biopsy result, 3 (13%) had significant prostate cancer recurrence outside the treatment field and 2 (8.7%) had residual significant infield prostate cancer. MFS, CSS and OS were 90.1%, 100% and 100% respectively. Clavien grade III or greater complications occurred in 9.9% of patients. No statistically significant declines were observed in EPIC bowel domain, AUA symptom score, SF-12 physical or SF-12 mental component summaries. However, there was a decline in EPIC sexual domain score (32 to 24) and EPIC urinary summary (89 to 82) at 6 months. Pad free continence and erections sufficient for intercourse were preserved in 17/23 patients and 5/10 patients respectively at 6 months.

Conclusion: This study describes the largest series of s-IRE for radio-recurrent PCa. Our data suggests that s-IRE is safe and QoL outcomes appear favourable in comparison to salvage radical prostatectomy. Whilst our short-term data appear promising, longer term follow up is required.

UP-383

The MRI in Active Surveillance Study (MRIAS): A Prospective Single Arm Cohort Study Replacing Confirmatory Biopsy with mpMRI in Active Surveillance for Low Risk Prostate Cancer

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Introduction and Objective: Active surveillance (AS) is an effective strategy in reducing over-treatment of low risk prostate cancer but frequent biopsies incur risk and reduce QOL. mpMRI is widely utilised for diagnosis of prostate cancer, however prospective studies supporting its efficacy during AS for detecting progression and reducing frequency of biopsy are lacking.

Materials and Methods: This prospective study protocol received institutional ethics approval. 172 patients were enrolled who were suitable for active surveillance between 2012 and 2017. Patients had low (ISUP 1) or favourable intermediate risk (ISUP 1, <10% high grade) localized PCa on systematic biopsy (median 29 cores) with a pre-biopsy baseline mpMRI. When eligible, patients underwent surveillance by PSA/DRE monitoring, 1 to 2 surveillance MRIs and standardized end of protocol biopsy at around 3 years. Any PIRADS 4/5 lesion or new PIRADS 3 lesion would trigger a biopsy within the protocol, as well as a PSA density of >0.2 ng/L. Progression was defined as sPCA; ISUP2 with >10% pattern 4 or cT3 disease. The diagnostic accuracy was calculated using a 2x2 contingency table on the latest MRI. Chi-square, cox proportional hazard and logistic regression analysis were performed to analyse risks for progression as well as the rates between specified groups.

Results: Of 172 enrolled, we analysed 105 patients (median age 61, PSA 4.5) who have completed the three-year protocol (53 patients have yet to finish the protocol and 14 excluded for significant protocol breaches). 5 patients refused follow-up biopsies. During the course of follow-up MRI positive patients harboured significant PCa in 54.2% (n=13/23) compared to only 10.4% (8/77) in patients with a negative MRI (p=<0.001). The sensitivity, specificity, positive and negative predictive value of the final MRI was 62, 87, 57 and 90, respectively. Binary logistic regression showed that both final MRI (OR 8.6, 95% CI 2.57 – 28.95) and PSA density (OR 2.93, 0.52 – 16.33) had significant predictive value for sPCa at final biopsy, illustrating the strongest predictive value for MRI in the surveillance for sPCa during AS. Purely based on the MRI results, follow-up biopsies could be prevented in 77% of cases (n=77/100) at the cost of missing 10.4% sPCa (n=8/77). However, of the 8 missed cases by final MRI, 4 had a PSA density of >0.2 ng/L. Consequently, if a combined MRI and PSA endpoint was used only 5.2% sPCa was missed (n=4/77). Of the 21 patients who experienced pathological progression, 18 underwent radical prostatectomy, two underwent brachytherapy and one underwent focal therapy. No patient experienced biochemical recurrence, had locally advanced disease or required adjuvant RT after RP.

Conclusion: Surveillance mpMRI adds significant value in the diagnostic surveillance of patients in active surveillance and is able to reduce the number of required standardized biopsies. Any new lesion on surveillance mpMRI should be biopsied due to the high change for sPCa (>50%). As sPCa is still being missed any standardized biopsy should not be omitted.

UP-384

Accuracy of MRI-US Fusion Prostate Biopsy for the Assessment of Focal Therapy Eligibility Using Intermediate/High-risk Criteria

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Introduction and Objective: Focal therapy (FT) in prostate cancer has been intensively discussed in the last years. While some urologists consider FT as an alternative to active surveillance, others emphasize its potential role in selected intermediate/high-risk cases. As MRI-targeted biopsy improves the accuracy of prostate cancer diagnosis, we reviewed its role in the assessment of FT eligibility in comparison with whole mount prostatectomy specimen.

Materials and Methods: Between October 2017 and January 2019, a total of 244 patients underwent MRI-US fusion prostate biopsy. Of these patients, 101 were diagnosed with prostate cancer and 41 underwent minimally-invasive radical prostatectomy with whole mount pathology analysis in our department and were included in the current analysis. FT eligibility criteria were considered as follows: T2c, PSA 20 ng/mL, Gleason score 4+3 in any biopsy core, Gleason 6+6 with minimum cancer core length of 4 mm, unilateral clinically significant prostate cancer. The presence of Gleason 6+6 in less than 4 mm or bilateral clinically significant prostate cancer were considered exclusion criteria.

Results: Of the total number of patients, 16 (39%) would have been eligible for FT according to whole mount analysis and previous stated criteria. MRI-US fusion prostate biopsy had a sensitivity, specificity and accuracy for the prediction of eligibility of 87.5%, 68% and 77.8%, respectively. In 10 cases, the MRI-US fusion biopsy was discordant with whole mount pathology, due to the presence of clinically significant disease in the contralateral lobe (80%) or the association of bilateral disease and upgrading of prostate cancer (20%). In all discordant cases, the pre-biopsy MRI showed only unilateral suspicious areas for clinically significant disease.

Conclusion: MRI-US fusion prostate biopsy has a good accuracy for the prediction of FT eligibility using intermediate/high-risk criteria. Improvement and standardization of multiparametric MRI assessment of prostate might increase the concordance between targeted biopsy and whole mount specimen.

UP-385

Relation Between Hot Flashes and Rates of Change of Testosterone and Estrogen During Hormone Therapy for Prostate Cancer

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Introduction and Objective: Prostate cancer development and growth is directly proportional to androgenic activity in the body. Currently, hormone therapy (combined androgen blockade: CAB) for prostate cancer is positioned as a standard treatment for metastatic prostate cancer. Hot flashes are a common stressful symptom for individuals with prostate cancer who are treated with CAB. We evaluated the relation between hot flashes and rates of change of testosterone (T) and estrogen (E2) during hormone therapy for prostate cancer.

Materials and Methods: Between June 2014 and September 2018, forty-eight patients and their CAB treatments were studied in Toho University, Omori medical center. The mean age at the beginning of hormone therapy was 73 years old and ranged from 60 to 92 years old. Serum T, E2 were measured at the beginning of CAB, after one month, two months, three months, six months and twelve months. We then recorded the levels after CAB for those who experience hot flashes and for those patients who did not.

Results: Hot flash symptoms appeared in 26 patients (54.1%). At the beginning of CAB, serum T and E2 levels were recorded for each patient before treatment was issued. The average starting T level was 4.809 ng/mL, with a minimum of 1.52 ng/mL and a maximum of 8.86 ng/mL. The same was done for E2 levels. The average starting level was 29.6 pg/mL with a minimum of 15.8 pg/mL and a maximum of 64.95 pg/mL. When the symptom appeared, the average T was 0.0996 (<0.03-0.39) ng/mL, E2 was 7.187 (<5.00-27.50) pg/mL. As for patients with no symptoms during CAB, the average starting T was 4.784 (0.69-11.18) ng/mL, E2 was 28.707 (16.04-44.40) pg/mL. The lowest T level was 0.0477 (<0.03-0.18) ng/mL, E2 was 5.021 (<5-9) pg/mL.

Conclusion: After analysis of the data, we concluded that there appears to be no such link between hormone levels (T, E2) and the occurrence of hot flashes with a P-value of 0.993 and 0.527 respectively.

UP-386

Can Upfront Docetaxel with LH-RH Antagonist for Advanced Hormone Naive Prostate Cancer Induce Complete Response?

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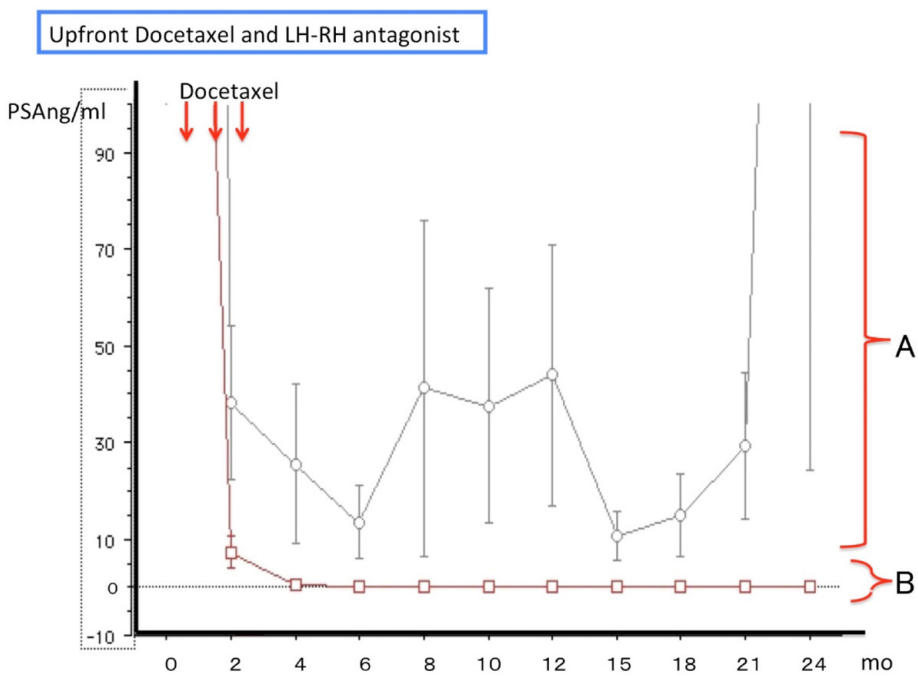
Introduction and Objective: Upfront Docetaxel use for hormone naïve advanced prostate cancer is reported that it successfully delayed the progression for hormone refractory stage, though the adequate methodology to obtain the maximum effect is unclear. We investigate these issues from our experiences of upfront Docetaxel use with LH-RH antagonist for advanced hormone naïve prostate cancer, aiming the prevention of epithelial-mesenchymal transition (EMT) for apoptosis tolerance.

Materials and Methods: Of 28 stage IV, new prostate cancer patients treated with upfront Docetaxel and LH-RH antagonist (Degarelix), 24 patients who could be followed more than 12 months (mean 29.8 months) were analyzed. Docetaxel was used two to three courses basically in usual dose two weeks after the induction of first Degarelix. Results: Of 24 patients, 11 patient's PSA did not decrease below 0.1 ng/mL within 6 months (group A) and gradually rose afterwards. PSA in another 13 patients (group B) decreased below 0.1 within 6 months and kept below 0.1 during the follow-up period. Although statistically not significant, the initial group A's PSA was higher than group B's (average 1,230 and 353 ng/mL), however, number of metastasis, Gleason sum, and bone metastatic extent of disease showed no difference between them. Some of the patients in group B showed only atrophic gland and fibrotic tissue at second prostate biopsy (specimens after more than two years of therapy) suggesting complete response.

Conclusion: Although the number of patients and follow up period were limited, our study suggested that PSA value at 6 months may predict the outcome of whole therapy. Patients showing PSA less than 0.1 ng/mL at 6 months may be induced to complete response. Upfront Docetaxel with LH-RH antagonist may prevent EMT for obtaining apoptosis tolerance, in case the patient does not have the castration-resistant clone at the beginning of the therapy (group B).

UP.386, Figure 1.



UP-387

PSA Density Performs Better in African American Men than Caucasian Men in Predicting Low Risk Prostate Cancer at Radical Prostatectomy: Implications for Active Surveillance

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Introduction and Objective: PSA density (PSAD) <0.15 ng/mL/gm is one of the Epstein criteria for very low risk prostate cancer used to select patients for active surveillance (AS). However, this value was derived from historical cohorts of mostly Caucasian (CA) men. Therefore, it is unknown if this PSAD value is applicable to a modern cohort of African American (AA) and CA men.

Materials and Methods: With IRB approval, a retrospective chart review was performed of consecutive AA and CA men who underwent radical prostatectomy (RP) between 2012 and 2017. Data collected included age, PSA, prostate volume (PV), pT Stage, pathologic Gleason Score (pGS), and percentage of the prostate involved with cancer (%PCa). The performance of PSAD to predict for low risk disease at RP was evaluated using ROC curve analysis and calculating the area under the curve (AUC). Sensitivity (Se), specificity (Sp), positive predictive value (PPV), and negative predictive value (NPV) were calculated for different PSAD cut off values. Low risk disease was defined as pT2 + pGS 6 + 5%PCa + PSA <10. Results: The entire cohort consisted of 212 patients, including 144 (67.9%) AA men. Only PSAD and pT Stage were significantly different between AA and CA (p= 0.029 and p= 0.043, respectively). PSAD was an excellent discriminator for low risk disease in the AA (AUC 0.912) cohort, but a poor discriminator in the CA (AUC 0.659) cohort. In AA men, a PSAD 0.12 ng/mL/gm had a Se, Sp, PPV, and NPV of 85%, 86%, 99%, and 22%, respectively. This PSAD value resulted in misclassifying 21 intermediate/high risk patients as having low risk disease and 1 (14%) low risk patient as having higher risk disease. In CA men, a PSAD 0.15 ng/mL/gm had a Se, Sp, PPV, and NPV of 60%, 60%, 95%, and 11%, respectively.

Conclusion: PSAD was an excellent discriminator for low risk prostate cancer at RP in AA men, and PSAD performed better in AA men than in CA men. A PSAD cut off score of 0.12 ng/mL/gm can be used to help identify AA men with low risk disease who may be candidates for active surveillance.

UP-388

Urinary Functional Outcomes of Radical Prostatectomy in Men Over 73 Years Old

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Introduction and Objective: The maximum age for radical prostatectomy (RP) has always been a matter of debate. In fact, less than 13% of men over 73 yrs old with localized aggressive carcinoma and a life expectancy for at least 10 years, receive radical treatment, instead of younger men with a similar life expectancy. Consequently, these older patients are more likely to receive radiotherapy or androgen deprivation therapy, possibly because their urinary functional outcomes after radical prostatectomy were underestimated.

Materials and Methods: We prospectively evaluated 314 patients who underwent open RP performed by the same principal surgeon from 6/2006 through 12/2017 at a single institution and had extended oncologic follow-up at 12 mo. Average patient age was 65 years (yr) (range 44 to 76). A comparison was performed between the overall patient cohort and the population aged over 73 years for urinary functional (UF) recovery. In this study, we incorporated the collection of patient-reported outcomes as part of routine clinical practice based on function at 3 months (mo) interval time points in the first year and 6 mo thereafter. We addressed potential response biases by using pad-free usage as a primary outcome.

Results: Continence rates in our cohort study of 314 patients at 3, 6, and 12 mo were 43% (134 of 314), 74% (231 of 314), 84% (264 of 314), respectively. During a 4 yr period post-RP, we found a 9% cumulative risk of manifesting anastomose stenosis (AS) requiring surgery (29 patients submitted to urethrotomy, 64% in the first 12 mo). Continence rates in men in their seventies (73 to 76) at 3, 6 and 12 mo were 41% (7 of 17), 71% (12 of 17) and 88% (15 of 17), respectively, and only one man had AS requiring surgery (6%).

Conclusion: We found similar functional recovery at 12 months postoperatively throughout the cohort regardless of ages up to 76 years old. Therefor this study conveys the idea that we should not condition our therapeutic decision for fear of worse functional recovery in men in their seventies. Men with high-risk

disease, regardless of age, are at greater risk for cancer mortality and may still be appropriate candidates for aggressive treatment, namely radical pretatectomy

UP-389

Extraperitoneal Single-Port Robotic-Assisted Laparoscopic Prostatectomy (espRALP)

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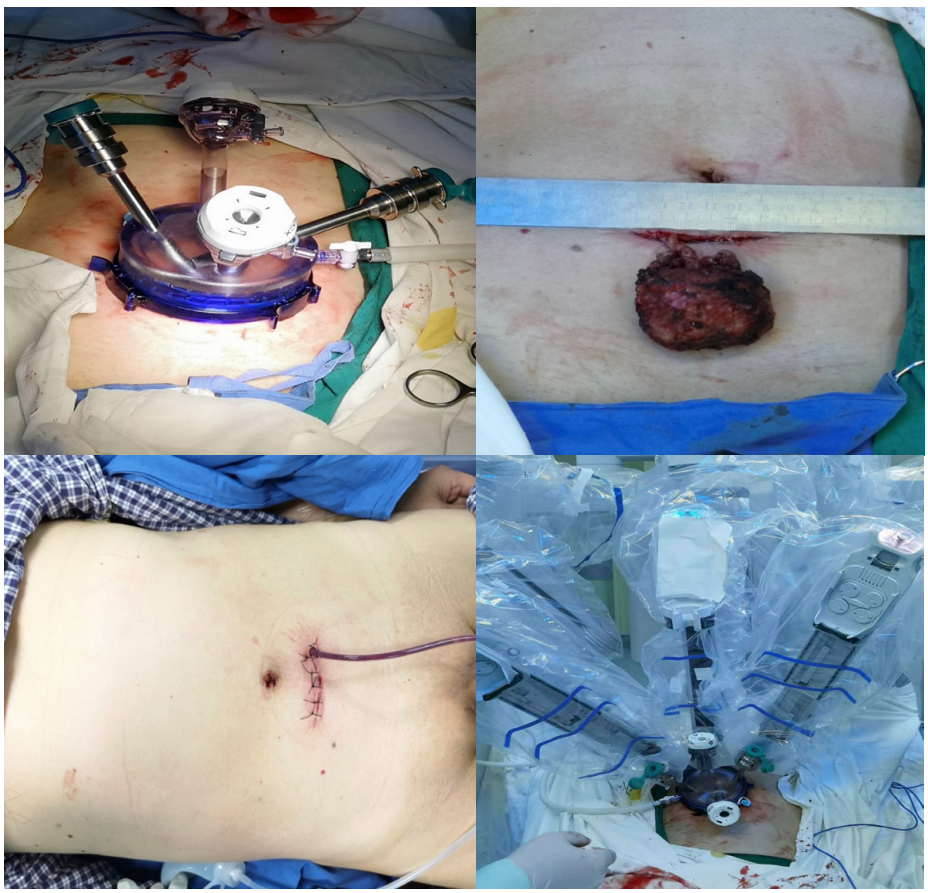
Introduction and Objective: To investigate the feasibility and surgical technique of extraperitoneal single-port robotic-assisted laparoscopic prostatectomy (espRALP). Materials and Methods: We retrospectively analyzed the clinical data of 5 prostate cancer (PCa) patients who had undergone espRALP from November to December 2018. Patients aged 69.2 years (range, 65 to 80 years), with a median initial prostate specific antigen of 12.0 ng/mL (range, 0.94-17.09 ng/mL). All patients were clinically organ confined (cT2a-cN0M0), in which 4 patients were treatment-naive and 1 was non-metastatic castration-resistant prostate cancer with previous history of androgen deprivation therapy (ADT). Surgical procedures, techniques, and short-term follow-up outcomes were concluded. The surgical incision was made from 4 cm below the umbilicus to 5 cm above the pubis symphysis, where the laparoscopic port of 100 mm in diameter was inserted. 30-degree up lens was adopted, and no patient had undergone pelvic lymph node dissection, while 1 patient had undergone bilateral intrafascial preservation of neurovascular bundles (NVB). Results: Surgical procedures were successfully performed in the 5 patients, with no open conversion. Time of operation was 110 min (range, 85-150 min), console time was 82 min (range, 45-131 min). Estimated blood loss was 100 mL (range, 50-150 mL) with no blood transfusions. Postoperative pathology revealed locally-advanced prostate cancer in all 5 patients (pT3a-bNx), with 2 positive surgical margins. All patients passed gas on postoperative day 1-2 and were off-bed on the first day. Postoperative length of stay was 2-4 days. All pelvic drainages were removed. Postoperative continence recovery on the 2nd and 3rd month were 60% and 80% respectively, while postoperative potency at 3-month was 20%. No biochemical recurrence was observed during follow-up. One patient with CRPC had postoperative PSA nadir >0.2 ng/mL, and adjuvant ADT was given. Conclusion: Extraperitoneal single-port robotic-assisted laparoscopic prostatectomy can be performed on a routine basis, and may have its own advantage in terms of operative time, surgical expense, postoperative stay and cosmesis. Further large-sample controlled studies are in need of further verification.

UP.389, Figures 1-4. Computed tomography urography scan showing renal calculi in a closed diverticulum



UP-390

Maximal Periprostatic Anatomy Preservation in Robotic-Assisted Laparoscopic Radical Prostatectomy (RALP)

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Introduction and Objective: To introduce the surgical technique and investigate short-term follow-up of maximal peri-prostatic anatomy preservation in robotic-assisted laparoscopic radical prostatectomy (MPAP-RALP).

Materials and Methods: We retrospectively analyzed 29 consecutive patients undergoing RALP performed by a single surgeon between March 2016 and June 2018. Transperitoneal RALP was adopted with anterior access. Periprostatic anatomical structures, including the endopelvic fascia, puboprostatic ligaments, deep dorsal venous complex, detrusor apron, and bilateral neurovascular bundles were preserved. Anterior reconstruction was made after vesicourethral anastomosis to restore local anatomy.

Results: Median PSA at time of diagnosis was 9.06 ng/mL (Interquartile range (IQR), 7.01-12.28). 82.8% patients were clinically organ-confined. Median time of surgery was 120 min (IQR, 85.0-180.0), with a median blood loss of 50 mL (IQR, 50.0-150.0). Positive surgical margin rate was 17.2% (5/29), in which 1 was proximal, 4 were distal, and none were circumferential. Blood transfusion was required in only 1 patient (3.4%), and no Clavien-Dindo Grade IV-V complications were recorded. Patients were discharged 3-4 days postoperatively. Median follow-up time was 15 months (range, 4-29). 79.3% (23/29) were continent immediately after Foley catheter removal. Continence recovery at 1 month postoperatively was 96.6% (28/29), and all patients were pad-free within 3 months. Twelve of 20 (60.0%) preoperatively potent patients were able to perform satisfactory sexual intercourse within 3 months after surgery, with 1 reporting spontaneous morning erection 4 days postoperatively. Twelve-month potency recovery was 72.7% (8/11). Biochemical recurrence-free survival at 12 months postoperatively was 75.0% (15/20).

Conclusion: Maximal peri-prostatic anatomy preservation in selected patients may provide excellent short-term recovery in postoperative continence and potency in robotic-assisted laparoscopic radical prostatectomy without compromising oncological control and is a feasible technical innovation in experienced centers. Further studies with larger sample size, better patient stratification, and randomized controlled design are needed.

UP-391

Neoadjuvant Radiotherapy Plus Robotic-Assisted Laparoscopic Radical Prostatectomy for Pelvic Lymph Node-Positive Prostate Cancer

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Introduction and Objective: The current treatment strategy for node-positive prostate cancer (PCa),

as guided by the European Association of Urology (EAU) and National Comprehensive Cancer Network (NCCN) guidelines, is external beam radiation therapy (EBRT) with androgen deprivation therapy (ADT), or ADT alone. Radical prostatectomy (RP) has gradually developed as an alternative treatment option for locally-advanced PCa in the past few years, especially with help of the da Vinci robotic surgical system, as part of a comprehensive treatment modality, but results are still scarce for node-positive PCa. Neoadjuvant ADT and adjuvant EBRT has been discussed in various clinical settings, showing promising tumor control outcomes. Neoadjuvant radiotherapy (RT) has become an important oncologic treatment strategy, the efficacy of which has been proven in various malignancies such as rectal cancer and sarcoma. However, few studies explored the role of neoadjuvant RT in prostate cancer. Here we present a prospective phase I clinical trial for node-positive patientswho had undergone neoadjuvant EBRT+ADT followed by RP.

Materials and Methods: We have designed a prospective, single-center, single-arm, open-label phase I trial. Eligible patients have biopsy-confirmed prostate cancer with pelvic lymph node invasion, regardless of serum PSA level and Gleason score. Patients receive a course of intensity-modulated radiotherapy (IMRT) in 22-25 consecutive daily fractions to the prostate and the affected lymph nodes, followed by radical prostatectomy and extended pelvic lymph-node dissection within 6-8 weeks after RT completion. We have planned a 3×3 cohort of radiotherapy dose escalation of 39.6Gy to 54Gy. Primary outcomes were RT-associated toxicities, as well as perioperative safety.

Results: Shanghai Changhai Hospital, which is well established in performing radical prostatectomy and RT for prostate cancer, is the single center that participates in the trial. The trial has been approved by the institutional review board of Shanghai Changhai hospital and registered at Chinese Clinical Trial Registry (ChiCTR1900022716). Ten patients have been included so far and the accrual is expected to be completed in September 2019.

Conclusion: The feasibility and safety profile, as well as the outcomes regarding tumor control is expecting. Further randomized controlled clinical trials should be conducted as well.

UP-392

Late Dosing of Luteinizing Hormone-Releasing Hormone Agonists and Testosterone Levels >20 ng/dL in Prostate Cancer

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Introduction and Objective: Luteinizing hormone-releasing hormone (LHRH) agonists are the most frequently used drugs for the delivery of androgen deprivation therapy (ADT) in prostate cancer (PCa). Achieving and maintaining effective testosterone (T) suppression to level attained with surgical castration is the cornerstone of ADT therapy for PCa. Increasing evidence suggests achieving and sustaining very low T levels to <20 ng/dL is desirable and correlates with improved disease-specific survival in patients with advanced PCa. T breakthroughs may occur between injections, especially if a dose is delayed. Late dosing, inadequate T suppression, or disease progression to advanced PCa may also cause a rise in prostate-specific antigen (PSA) levels. This current study evaluated timeliness of LHRH injections, rate of T breakthroughs, and frequency of T/PSA testing prior to dosing in PCa patients.

Materials and Methods: A retrospective review of electronic medical records (1/1/07-6/30/16) of LHRH agonist injections (n= 85,030) evaluated the frequency of late injections (defined as occurring on/after day 33, 98, 129, 195 for 1-, 3-, 4-, 6-month formulations, respectively), T tests >20 ng/dL, and frequency of T and PSA tests prior to dosing.

Results: For all LHRH agonist injections, 26.9% were late: 14.4% were 1 week late, 3.1% were between 1-2 weeks late, and 9.4% were >2 weeks late. 43% of T values exceeded 20 ng/dL for late injections; while only 22% exceeded this level for early/on-time injections. 83% of LHRH injections had a PSA value drawn prior to dosing; however, only 13% had a similarly timed T assessment.

Conclusion: Across LHRH agonists, greater than a quarter of injections were late. When dosing was late, the proportion of T >20 ng/dL increased while early/on-time dosing decreased the chance of T breakthrough. Late dosing was correlated with ineffective castration over 40% of the time, yet T values were not routinely assessed in many patients. Considering the clinical benefits of maintaining effective T suppression throughout the course of ADT, clinicians should administer treatments within approved dosing instructions, routinely monitor T levels, and consider prescribing treatments with proven efficacy through dosing interval to maintain T at castrate levels.

UP-393

Whole-Body MRI-Based Multivariate Prediction Model in the Assessment of Bone Involvement in Prostate Cancer

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Introduction and Objective: To compare the diagnostic accuracy of whole-body T1, short tau inversion recovery (STIR), high b-value diffusion-weighted imaging (DWI), and sequence combinations to detect bone involvement in prostate cancer (PCa) patients.

Materials and Methods: A total of 545 cases of patients with histologically confirmed PCa at high risk (PSA> 20 ng/mL; or PSA> 10 ng/mL with Gleason score >3+4; Gleason score >4+3, any PSA) for metastasis were referred to whole-body MRI in Shanghai Changhai Hospital from July 2014 to December 2017. Whole-body coronal T1WI, and RESOLVE (readout segmentation of long variable echo-trains) DWI with b value 0-800; pelvic coronal T1WI, fat suppression T2WI; and prostatic DWI with b value 0-1500 were performed in all cases. Bone scan was carried out in all patients. The diagnosis of either metastatic of non-metastatic depends of the "best valuable comparator" with both baseline and 6-month follow-up of imaging and clinical data. Two radiologists review and interpret individual and all sequences to detect bone involvement with a final diagnosis made after discussion in terms of discrepancy. Receiver operating characteristic curve analysis was applied.

Results: There were 108 cases diagnosed with metastatic diseases, and 337 cases with non-metastatic disease according to the best valuable comparator. The WB-MRI results defined 438 cases to be non-metastatic and 107 cases to be metastatic. The bone scan revealed 112, 408 and 25 cases to be metastatic, non-metastatic and unclassified. The AUC of WB-MRI, BS were 0.781 vs. 0.585 (P<0.001). Multivariate logistic regression analysis revealed PSA level, and biopsy Gleason score to be associated with metastatic disease. A WB-MRI-based prediction model was established with AUC of 0.834.

Conclusion: In PCa patients, Whole-body MRI may serve well as a tool to distinguish different biopsy results. Together with clinical parameters, WB-MRI bases model could be an effective in differentiate metastatic disease.

UP-394

How Accurate is Ga68 PSMA PET/MR in Localizing Primary Prostate Cancers Compared to Multiparametric MRI, Ga68 PSMA PET/CT and Whole-mount Histopathology – A Case Series

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Introduction and Objective: Prostate specific membrane antigen ligands in PET imaging have shown superior results when compared to traditional imaging techniques in imaging prostate cancer. Simultaneous PSMA PET/MR is an emerging modality yielding promising results, although scant published evidence available. We compared the diagnostic accuracy of multiparametric MRI, PSMA PET/MR and PSMA PET/CT to whole-mount histopathology for the localization of primary prostate cancer.

Materials and Methods: A local prospective database (REDCap – Monash University) for patients who underwent MRI since 2013 was used. 18 patients underwent MRI, PSMA PET/CT, PSMA PET/MR and subsequent radical prostatectomy with whole-mount histopathology. Imaging was reported based on Prostate Imaging Reporting and Data System Sector Maps. These were individually evaluated and results analysed by dividing the prostate into 12 sectors; apex/mid/base in the transverse plane, left/right in the sagittal plane, and anterior/posterior in the coronal plane.

Results: Whole-mount histopathology revealed significant cancer in all 18 patients, with detection of tumour foci in 85 of 216 sectors, with significant

cancer defined as greater than or equal to Gleason 3+4=7 (ISUP Grade Group 2). MRI detected lesions in 49 sectors (43 involving tumour foci) and no lesion in 167 sectors (42 involving tumour foci). PET/CT demonstrated avidity in 50 sectors (38 involving tumour foci) and no avidity in 166 sectors (47 involving tumour foci). PET/MR demonstrated avidity in 56 sectors (48 involving tumour foci) and no avidity in 160 sectors (37 involving tumour foci). The overall accuracy of all 3 modalities respectively were 77.8%%, 72.7% and 79.2%.

Conclusion: In this case-series involving highly selected patients undergoing prostate MRI, PSMA PET/CT, PSMA PET/MR and subsequent radical prostatectomy with whole-mount histopathology, PET/MR outperformed both MRI and PET/CT in accurately detecting significant primary prostate cancer. As a diagnostic technique, pelvic PET/MR is an emerging modality, and as such requires further investigation and cost-effectiveness analysis.

UP-395

Clinical Significance of Multiparametric Magnetic Resonance Imaging as a Preoperative Predictor of Oncologic Outcome in Very Low-Risk Prostate Cancer

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Introduction and Objective: Currently, multiparametric magnetic resonance imaging (mpMRI) is not an indication for patients with very low-risk prostate cancer. In this study, we aimed to evaluate the usefulness of mpMRI as a diagnostic tool in these patients.

Materials and Methods: We retrospectively analyzed the clinical and pathological data of individuals with very low-risk prostate cancer, according to the NCCN guidelines, who underwent mpMRI before radical prostatectomy at our institution between 2010 and 2016. Patients who did not undergo pre-evaluation with mpMRI were excluded. We analyzed the factors associated with biochemical recurrence (BCR) using Cox regression model, logistic regression analysis and Kaplan-Meier curve.

Results: Of 253 very low-risk prostate cancer patients we observed 26 (10.3%) with BCR during the follow-up period in this study. The multivariate Cox regression analyses demonstrated that the only factor associated with BCR in very low-risk patients was increased in the pathologic Gleason score (GS) (HR: 2.185, p-value 0.048). In addition, multivariate logistic analyses identified prostate specific antigen (PSA) (OR: 1.353, p-value 0.010), PSA density (OR: 1.160, p-value 0.013), and suspicious lesion on mpMRI (OR: 1.995, p-value 0.019) as the independent preoperative predictors associated with the pathologic GS upgrade.

Conclusion: In our study, the pathologic GS upgrade after radical prostatectomy in very low-risk prostate cancer patients demonstrated a negative impact on the oncologic outcome; and mpMRI is a good diagnostic tool to predict the pathologic GS upgrade. We believe that the implementation of mpMRI would be beneficial to determine the treatment strategy for these patients.

UP-396

Direct and Marginal Cost Analysis of Not Aiming for the Target in a MRI-Targeted Prostate Biopsy Pathway

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Introduction and Objective: The diagnostic yield of clinically significant prostate cancer (csPCa) in non-targeted biopsies in men with a suspicious mp-MRI is 1-3%. The aim of this multi-centre study was to evaluate non-targeted prostate biopsies when performed alongside MRI-targeted biopsies, in terms of direct cost and marginal analysis (MA), pathologist reporting and MDT reviewing time.

Materials and Methods: A prospective online registry was analysed (April/2017-Sept/2018). MA defined as cost to diagnose one additional case of csPCa. NHS reference cost ≤119/biopsy. Pathologist reporting (8min/biopsy) and MDT reviewing time (1 min/biopsy). Biopsy advised if MRI score was 4-5 or score 3 with PSA-density >/=0.12. All TP-Bx with csPCA defined as any Gleason >/=3+4.

Results: 837 consecutive patients with mean age, median PSA and median prostate volume 65.3 yrs (SD 8.8), of 6.8 (IQR 5.1-9.8) ng/ml and 49cc. TP-Bx performed in 436 patients, csPCa identified in 48.7% (210/436). csPCa was exclusively present in non-targeted prostate biopsies in 2.1% (7/337). Direct costs of non-targeted negative or insignificant PCa were ≤39,270; 2,640 mins pathologist reporting; 330 mins MDT reviewing time. MA reported average cost per targeted and non-targeted case as ≤255.59 and ≤438.03. Marginal cost per case was ≤240 for targeted and ≤5,729 for exclusively non-targeted biopsy csPCa.

Conclusion: Non-targeted biopsies in MRI-targeted pathway have significant direct and marginal costs per case, consume valuable pathologist time but confer diminishing marginal benefit.

UP-397

Increased Tumor-Associated Macrophages in the Prostate Cancer Microenvironment Predicted Patients' Survival and Responses to Androgen Deprivation Therapies in Indonesian Patients Cohort

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Introduction and Objective: Tumor-associated macrophages (TAMs) and microvessel density (MVD) play an essential role for tumor progression in prostate cancer (PCa). In this study, we evaluated the association of TAMs and the infiltration with tumor angiogenesis and the response to androgen deprivation therapies (ADT) in PCa to evaluate TAM infiltration as a predictive factor for PCa survival.

Materials and Methods: Fifty-four prostate cancer specimens were collected and stained with CD 68 antibody to investigated TAM infiltration in tumor. Von Willebrand factor (vWF) was stained to evaluate microvessel density (MVD) around the cancer foci. We assessed the association between patient's age, preoperative serum prostate specific antigen (PSA),

UP.396, Table 1. Direct histopathology costs, pathologist reporting time and MDT reviewing time. Marginal cost analysis of non-targeted prostate biopsies in a MRI-targeted prostate biopsy pathway.

Biopsy and Detection Rate

Total referred patients	Number of prostate biopsies	Non-targeted and targeted prostate biopsies	Overall csPCa	csPCa exclusively present in non-targeted prostate biopsies
837	431	377	48.7% (n = 210)	2.1% (n= 7)

Direct Cost Analysis of Negative Non-Targeted Biopsies

Direct histopathology cost (NHS Reference Cost ≤119/biopsy)	Pathologist reporting time (8 mins/biopsy)	MDT reviewing time (1 mins/biopsy)
≤39,270	2,640 minutes	330 minutes

Marginal Cost Analysis

Biopsy Type	csPCa detected	Additional cases detected	Number of biopsies	Total Histopathology cost (≤)	Average cost per case (≤)	Marginal cost per case (≤)
MRI-Targeted	203	203	436	≤51,884	≤255.59	≤255.59
Exclusive Non-Targeted	210	7	337	≤91,987	≤438.03	≤5,729.00

pathologic Gleason score, TAM infiltration, MVD, and the response to ADT. We analyzed patients' survival rate through 5 years after diagnosis. Results: The median serum PSA was 50.7 ng/mL, and the median TAM infiltration was 28 (6-76). Increasing TAM infiltration correlated with increasing tumor angiogenesis (P<0.001, r= 0.61) and the response to ADT was significantly better in patients with fewer TAMs (< 28) compared to higher numbers of TAMs (>28) (P=0.003). TAM number was significantly higher in those with higher serum PSA, higher Gleason score, clinical T stage and metastasis. Multivariate analysis showed that Gleason score, ADT type and MVD number were prognostic factors for response to ADT in PCa (P<0.0001). An increased volume density of TAM (HR=2.19; 95% CI: 0.61-3.78), MVD (HR=2.24; 95% CI: 0.25-4.22), metastatic status (HR=2; 95% CI: 1.24-2.76), PSA (HR=2.95; 95% CI: 1.73-4.16) and prostate volume (HR=2.19; 95% CI: 1.27-3.12) significantly correlated with shorter survival in PCa patients by univariate analysis (P<0.05). Multivariate analyses revealed that TAM infiltration and metastatic status significantly correlated with poor overall survival.

Conclusion: TAM infiltration is associated with response to ADT and increased tumor angiogenesis in PCa. Gleason score, ADT type and MVD in PCa specimens is a useful predictive factor for poor response to ADT. Increasing TAM density and positive metastatic status were prognostic factors for a poorer survival in PCa patients.

UP-398

Comparison of MP-MRI Targeted Prostate Biopsy VS Systematic Trus Guided Biopsy in Diagnosis of Early Prostate Cancer: Single Center Prospective Study

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Introduction and Objective: The current approach for diagnosis of prostate cancer which includes digital rectal examination (DRE), (PSA), and conventional trans-rectal ultrasound (TRUS) guided biopsy has several limitations. A pathway with imaging as a triage test to decide which men with an elevated PSA need biopsy might reduce unnecessary biopsy and improve diagnostic accuracy. In this study we compare Multi-Parametric- MRI Targeted biopsy (MP-MRI-TB) with TRUS – BIOPSY in diagnosis of early prostate cancer of patients with intermediate PSA level (4-20ng/mL).

Materials and Methods: A total of 40 patients were studied over a duration of 18 months. All patients with a PSA level of (4-20ng/mL) were included in the study. All men were offered pre-biopsy MP- MRI with a 2 core targeted biopsies (TRUS guide) when a lesion was found in MP MRI followed by Systematic TRUS biopsy (STB) and results were compared.

Results: Out of 40 patients, 3 patients had no lesions on MP-MRI and were subjected directly to 12 core STB without TB. In the remaining 37 patients, both modalities were performed. Out of 37 patients, who underwent TB, malignant lesions (ML) were detected in 20 cases and 17 cases had benign lesion (BL). Out of 40 patients who underwent STB, 17 cases had ML and 23 cases had BL. Clinically significant prostate cancer (CSPca) was detected in 14 out of 40 patients, out of these, 3 were detected by TB only, 11 by both techniques. Not clinically significant prostate cancer (NCSPca) was detected in 6 of 40 patient, by both techniques.

Conclusion: MRI offers superior anatomic detail, the ability to evaluate cellular density based on water diffusion and blood flow based on contrast enhancement. MRI-targeted biopsy may increase the diagnosis of clinically significant cancers by identifying specific lesions not visible on conventional ultrasound.

UP-399

Office Transperineal Prostate (TP) Biopsy – A Game Changer? Asian Perspective in Using Precision Point Transperineal Access System (PPTAS)

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Introduction and Objective: Transrectal prostate biopsy can cause life-threatening sepsis and Transperineal prostate biopsy is reported to have lower complication rate and improved significant prostate cancer detection rate.Our aim is to present our outcomes in performing office TP biopsy using the PPTAS in an Asian population.

Materials and Methods: Forty-three patients who had elevated prostate specific antigen (PSA) underwent transperineal prostate biopsy under local anesthesia using the PPTAS between October 2018 and March 2019. Patients demographics, cancer detection rate and complications were recorded.

Results: N = 43; mean age is 67 years (range: 53 – 85); mean serum prostate specific antigen (PSA) level was 29.17 ± 57.00 ng/mL (range: 4.2 – 351.6). Mean prostate health index (PHI) was 41.5 ± 10.99 (range: 23-60) and mean PSA density was 0.69 ± 1.17 (range: 0.08 – 6.22). Prostate cancer was noted in 18 out of 43 patients. Significant prostate cancer (Grade group 2) were identified in 14 (78%) and insignificant prostate cancer (Grade group 1) in 4 (22%). Gleason grade group 4 and 5 were detected in 3 (17%) and 6 (33%) respectively.Prophylactic antibiotics was used in 35 (81%) patients. In total, 5 patients had post biopsy complications (Clavien 1 = 3, Clavien 2 = 2). Sepsis was noted in only 1 (2.3%) patient, who did not receive prophylactic antibiotics. All the patients tolerated the procedure well and did not require additional per oral or parenteral analgesia.

Conclusion: Office TP biopsy PPTAS is feasible and safe, even in the elderly population. In our initial series, cancer detection rate is acceptable. Post biopsy sepsis rates are very low and peri-procedural antibiotics may be required in appropriate patients to reduce the infection complications.

UP-400

Extended Lymphadenectomy in Prostate Cancer: Preliminary Results

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Introduction and Objective: Pelvic Lymphadenectomy (PLND) in prostate cancer (PCa) has not been shown to improve overall survival but it is essential for detecting lymph nodes metastasis, which occurs in 1-26% of radical prostatectomy (RP), depending on features of PCa at diagnosis and extension of PLND; when extended (eLND) the detection rate improves but increases the duration of RP with about 20% of complications. There are predictive models for positive eLND (+) that select patients for eLND in PR, with high sensitivity and negative predictive value (NPV) as the nomogram of Briganti (BN), if < 5% discourages eLND. We present our experience.

Materials and Methods: Prospective longitudinal study includes patients with organ confined PCa diagnosed by transrectal biopsy submitted to open RP/eLND independent of BN, between February 2018 and February 2019. We always installed 2 drains until debit < 50 cc/day/drain. Primary variables studied were eLND + and BN.

Results: We intervened 55 patients with median age of 64.0 years (range 46-74), 28.1 median BMI (range 21.8 - 35.4), 80% BMI >25. Median preoperative PSA was 10.1 ng% (range 3.5 - 31.9). Grade 1-5 ISUP had 7, 19, 8, 14 and 7 patients. D 'Amico risk was low, intermediate and high in 3, 32 and 20 patients. Stage T1c entered 29 patients, 24 in T2 and 2 inT3. BN >5% in 36 patients (65.4%). Median operating time 159.0 minutes (range 100-255) resecting a median of 25.2 nodes (range 11-71). Eight patients (14.5%) had positive nodes, all with BN > 5%. In patients with BN > 5% and positive nodes the median BN was 37.0% (range 7.6 - 90.0); in those with negative nodes was 18.1% (range 5.5 - 77.7). BN has 100% sensitivity, 39% specificity and 100% NPV. Median drain time was 4.8 days (range 2-29). No intraoperative complications eLND-associated was observed; four patients presented lymphocele (2 required drainage), 2 had DVT and 18 required drain> 5 days.

Conclusion: We accept not performing eLND with BN <5%. The cut-off value that justifies its realization is not clear, but it seems to be superior to 5% suggested by Briganti.

UP-401

Comparing the Diagnostic Yield of Transrectal Ultrasound-Guided Prostate Biopsy vs Template Prostate Biopsy in Diagnosing Prostate Cancer in Patients with PIRADS3 Lesions on Prostate MP-MRI

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Introduction and Objective: Ultrasound-guided prostate biopsy is now the standard of care in the diagnosis of prostate cancer. The use of transrectal ultrasound-guided prostate biopsy (TRUS-biopsy) requires fewer resources and is less labor-intensive as compared to template prostate biopsy (TP-biopsy). However, the safety profile of the latter is better. The Prostate Imaging – Reporting and Data System Version 2 (PI-RADS™ v2) defines PI-RADS 3 as – Intermediate (the presence of clinically significant cancer is equivocal). Which in current practice will warrant a

prostatic biopsy. The objective of this study is to compare the diagnostic yield of TRUS-biopsy and TP-biopsy in patients with a raised prostate-specific antigen (PSA) and PIRADS (Prostate Imaging - Reporting and Data System) 3 lesions on multi-parametric magnetic resonance imaging (MP-MRI).

Materials and Methods: Data was collected prospectively from all patients with PIRADS 3 lesion(s) on MP-MRI who underwent either TRUS-biopsy or TP-biopsy from 1st January 2016 to 31st December 2017 (n=78). Patient medical records, histology, pathology, and radiology were reviewed.

Results: Over a period of 24 months, 170 patients underwent MP-MRI followed by either TRUS-biopsy or TP-biopsy. 89 patients were excluded because they did not have a formal PIRADS scoring. 3 patients were excluded as their mp-MRI showed a PIRADS 2 lesion only. The total number of included patients was n=78. 23 patients had TP-biopsy of which 52% (n=12) patients had clinically significant prostate cancer (Gleason3+4). 39.4% (n=9) patients had benign histology and 8.6% (n=2) patients had clinically insignificant cancer (Gleason 3+3, or less). 56 patients had TRUS-biopsy. 67.8% (n=38) patients had clinically significant prostate cancer (Gleason3+4). 26.7% (n=15) patients had benign histology and 5.3 (n=3) patients had clinically insignificant cancer (Gleason 3+3, or less).

Conclusion: Our results show a slightly better diagnostic yield of TRUS-biopsy vs TP-biopsy with pre-biopsy MP-MRI, 67.8% (TRUS) vs 52% (TP-biopsy). Benign histology yield was surprisingly higher in the TP-biopsy cohort 39.4% vs TRUS-biopsy cohort 26.7%. Clinically insignificant cancer detection rates were similar in both cohorts. TP-biopsy, however, is associated with fewer complications as compared to TRUS-biopsy. There is no statistical difference in terms of diagnostic yield between the two prostate biopsy methods as evident in the literature.

UP-402

Feasibility Study of Using ctDNA to Monitor the Treatment of Advanced Prostate Cancer

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Introduction and Objective: To assess whether ctDNA can provide real feedback on tumor burden in patients with advanced prostate cancer.

Materials and Methods: When patients with advanced prostate cancer were diagnosed, multi-point puncture samples were used for high-throughput sequencing, multi-site mutagenesis was found, pcr-array probe was designed, and pcr-array probe was used to monitor the blood ctDNA load of patients on a regular basis. At the same time, we compared the symptoms of the patients, the results of PSA, imaging, and assessed whether the ctDNA could truly feedback the severity of the disease.

Results: The mutation rate of ctDNA is correlated with the severity of the disease, and it can effectively feed back the efficacy of the treatment.

Conclusion: Monitoring advanced prostate cancer with ctNDA is rapid, effective, and can accurately reflect the tumor load and therapeutic effectiveness of patients. However, monitoring patients with ctNDA is expensive, and has certain requirements for patients with tumor load. Whether it can be widely used in clinic still needs follow-up research.

UP-403

Alcohol Drinking May Elevate PSA Level

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Introduction and Objective: It has been reported that alcohol intake reduces the PSA level in subjects. However, we are sometimes aware that drinking alcohol may be involved in PSA elevation in patients who have visited urologic outpatient office during following up PSA. We retrospectively investigated the relationship between PSA level and drinking in individual case.

Materials and Methods: From August 2012 to October 2018, we measured the rate of climb of the PSA due to drinking about 57 cases (net 32 cases) that the presence or absence of episode of drinking was confirmed before and after PSA measurement during PSA following. About the change of the PSA after the abstinence from alcohol, we set a PSA level after the abstinence as 100% and calculated the rate that had risen before the abstinence.

Results: Prostate needle biopsy was performed in 12 patients. Prostate cancer was not observed, and inflammation was noted in 6 cases. There were 53 cases (93%) whose PSA rose due to drinking alcohol. Four patients (7%) had PSA falling due to drinking alcohol. Ninety-eight % of patients who had tenderness at the prostate admitted PSA rise with drinking alcohol. In 8 cases (14%), PSA exceeded the reference value (> 4.0 ng/mL) due to alcohol consumption. The median rate of PSA increase by drinking was 21.8% (- 49.1% to 154.8%), and the average value was 32.1%. The PSA increase rate was not correlated with age, PSA at first visit, prostate volume at first visit, or PSAD.

Conclusion: Drinking may elevate PSA at a level of about 30% especially in the patients who indicate tenderness at prostate by digital rectal examination. There is a possibility that PSA falls below the reference value due to abstinence in such cases. Prospective study should be recommended in the future.

UP-404

The Role of Bipolar Transurethral Resection in Prostate Cancer

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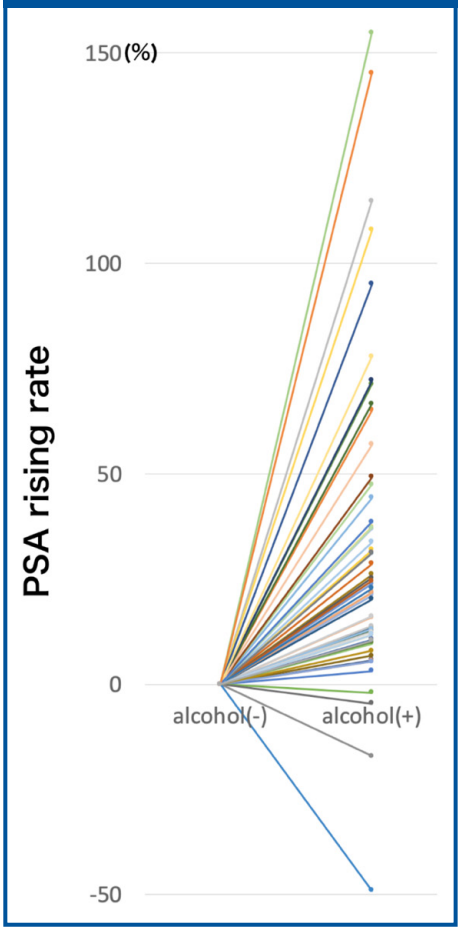
Introduction and Objective: Prostate cancer is the most frequent neoplasia in men over 50 years old, being a public health problem. Transurethral resection is not a standard treatment option in prostate cancer; however, mono- or bipolar could be useful in advanced prostate cancer in order to improve the symptoms, especially the obstructive ones.

UP.403, Figure 1. Effect of drinking on PSA level



Materials and Methods: We retrospectively evaluated 30 patients with prostate cancer who underwent bipolar transurethral resection and vaporization of the prostate. The indications are represented by incomplete or complete urinary obstruction (24 cases), recurrent urinary tract infections 4 cases, hematuria (2 cases). The mean age of patients was 73.8 (range 61-87). Prostate volume ranged from 38 to 103 cc with a mean value of 56.2 cc. The mean IPSS score was 18.7 (9-33). Mean Qmax was 7.32 (2-15) with a residual volume of 180.8 (20-650 mL). Six patients were admitted for complete urinary retention. The main characteristics of the patients are shown in the table: in all cases hormonal therapy and/or radiotherapy were applied with at least 3 months before the procedure.

Results: The mean operative time was 72 minutes (between 24 and 112 minutes). The mean hemoglobin drop was 0.7 g/dL. Capsule perforation was noted in 2 cases. Postoperative bleeding occurred in one case. The mean catheterization time was 48.5 hours (24 to 120 hours) and the hospital stay was 42.5 hours (26 to 145 hours). IPSS decreased from 18.7 to 9.3 and the residual urine from 180.8 to 48.5 mL. The Q max increased to 18.2 mL/min. The postoperative PSA value (at 3 months after the procedure) was significant low by comparison with the preoperative value (12.5 ng/dL vs 24.3 ng/dL).

Conclusion: Transurethral resection is a useful tool in the management of urinary symptoms in patients

with prostate cancer. Moreover, a significant PSA value reduction was observed.

UP-405

The Efficiency of Robotic Assisted Laparoscopic Radical Prostatectomy for Patients with High Risk Localised Prostate Cancer

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Introduction and Objective: We reviewed the pathological and oncological results of D'Amico high risk patients that have been offered robotic radical prostatectomy (RALP) in our institute within the last six years and estimated the need for salvage treatment.

Materials and Methods: The data of all the RALPs performed from January 2013 till December 2018 was reviewed prospectively. We identified the high-risk disease patients as stratified by the D'Amico classification (PSA20 OR GS 8 or cT2c).

Results: Out of 898 RALPs in total, 247 (27.5%) were classified as high-risk asper D'Amico criteria. Of these, 48 (19.44%) had PSA20, 72 (29.16%) had GS8 and197 (80.09%) had clinical stage cT2c. 188 (76.38%) presented with one risk feature, 53 (21.29%) had two and only 6 (2.31%) had all three features on diagnosis. Lymph node dissection performed in 174 (70.37%) of them. The overall lymph node-positive disease was noted in 28 (11.57%); 11 of them had pT3a disease, 16 had pT3b and one of them had pT2a with PSA of 26 and prostate biopsy GS 3+4. Positive lymph nodes were noted in 5/67 (7.46%) patients with prostate biopsy GS 3+4 and in 10/48 (20.8%) of those with GS 4+3. Salvage radiotherapy and hormones were offered to 47 (19.02%). Ten patients, who were involved in RADICALS trial, were excluded from the salvage treatment group. The median follo- up time was 41.95 months (6- 77).

Conclusion: RALP prostatectomy is an effective either stand-alone or part of multi-modal treatment for high-risk prostate cancer.

UP-406

A New Model of Care for Men with Emotional and Sexual Concerns After Robotic Surgery for Prostate Cancer (MOCA)- A Feasibility Study of Patient Reported Outcome Measures

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Introduction and Objective: Prostate cancer is an increasingly diagnosed problem. Previously, a pathway for patients post prostatectomy had been developed from patient focus group results. This was developed into a document for PCUK and NICE endorsed. The next step is a feasibility study to see if this pathway is a viable option for patients.

Materials and Methods: Twenty patients were contacted via telephone and asked their opinion on the previously developed pathway, over a one-month period, as part of quality improvement. Details were recorded as part of patient reported outcome measures.

Results: Twenty patients were contacted and 100% responded. Thematic analyses led to identification of the following subject areas and generation of overarching themes: Requirement for additional CNS dedicated to chemo patients, Gender related issues/ Age related issues, Implementation of national standards for psychosexual care/ early access to therapy needed, Standardized pathway for follow-up required, Lack of therapy for emotional and sexual concerns including counselling and medical therapy or devices, Post-operative problems for which specialist care is required, Requirement for explanation on side effects of surgery, Pre-operative counselling, Additional CNS needed, Access to continence devices, Survivorship support group, National pathway with continence devices and PFE and ED therapy. The subject areas were drawn out of the patient focus group and healthcare professional interviews, after manual tabulation. Subject areas were identified by being highlighted and the overarching themes into which these fit, were named.

Conclusion: This feasibility study demonstrates areas for further development of this pathway prior to implementation. This study highlights the acceptance of this pathway by patients having had prostate cancer surgery.

UP-407

Prostate Cancer (PCa) Incidence and Severity in 821 Hypogonadal Men with and without Testosterone Therapy (TTh) in a Controlled, Observational Registry Implying More Than 7,000 Patient-Years

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Introduction and Objective: Guidelines by AUA and EAU state that there is no evidence for an increased PCa-risk for testosterone (T) treatment in hypogonadal men.

Materials and Methods: In a registry study initiated in 2004, 428 hypogonadal men (T350ng/dL) received T-undecanoate 1000mg every 3 months following an initial 6-month interval for up to 13years (T-group). 393 hypogonadal men (age range 51-74) opted against TTh (CTRL). Suspicion of or active PCa was excluded by transrectal ultrasound, digital rectal examination and PSA before treatment/observation initiation. Examinations were repeated between 1-4 times/year. Biopsies were performed when indicated according to EAU Guidelines.

Results: In the T-group, 12 men (2.8%) were diagnosed with PCa. In CTRL, 42 (10.9%) were diagnosed with PCa. The mean baseline-age of PCa patients was 64.9years in the T-group and 64 in CTRL.In the T-group, the average time span between the day of first injection and positive biopsy was 14.2months (range: 5-18). No patient was diagnosed with PCa beyond 18months of TTh. In CTRL, PCa was diagnosed at any time during observation.In the T-group, radical prostatectomy (RP) was performed in all men.All but 3 had a Gleason-score (GS)6, and all but 1 a primary GS=3.Tumor grade: G2 in all 12 (100%).Tumor stage: T2a in 7 (58%), T2b in 3 (25%), and T2c in 2 (17%). All but 2 patients are back on TTh after an average time of 25 months.In CTRL, RP was performed in all but 6 patients who received radiation therapy (RT).2 had GS6, 7 a GS=7, 21 a GS=8, and 12 a GS=9.4 men had a primary Gleason-score of 3, 29 had 4, 9 had 5.Tumor-grade: G2 in 9 (21%), G3 in 33 (79%).Tumor-stage: T2a in 2 (5%), T2c in 1 (2%), T3b in 15 (36%), T3c in 24 (57%).In CTRL, biochemical recurrence occurred in 11 (26%) patients. These received androgen-deprivation-therapy (ADT). 12 (34%) died of whom 7 were on ADT.In the T-group, no biochemical recurrences or deaths occurred during the observation time.

Conclusion: Less PCa occurred and severity was lower in testosterone-treated hypogonadal patients compared to untreated hypogonadal controls.

UP-408

Comparison of PSMA Tc-99m SPECT to MRI in Detection and Local Staging of Prostate Cancer

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Introduction and Objective: Prostate Specific Membrane Antigen (PSMA) scan became increasingly popular in prostate cancer staging and may outperform multi-parametric MRI (mpMRI). The most commonly utilized modality Gallium-68 PET is expensive and less readily available. PSMA bound to Tc-99m is a more recent development which is more readily accessible and cost effective. We aimed to compare the PSMA Tc-99m SPECT findings in patients undergoing radical prostatectomy to mpMRI findings and radical prostatectomy specimens.

Materials and Methods: We analysed our prospectively maintained Tc-99m PSMA database for patients who had pre-operative mpMRI prior to radical prostatectomy. Prostatectomy histopathology results were used as the gold standard against PSMA-Tc99m and mpMRI findings. Local staging findings were compared between PSMA-Tc-99m and mpMRI. Data were analysed using SPSS 24.0.

Results: Six patients with a mean age of 64.5 years had prostatic cancer confirmed on histology. Two patients had Gleason 3+4=7 cancer. Two had Gleason 4+3=7 disease. The remaining two had Gleason 4+5=9 and 5+4=9 disease. All index lesions were identified on both MRI and PSMA. Of the five patients had bilateral diseases on histopathology, one was identified as unilateral disease on both PSMA-Tc99m and mpMRI, one on PSMA-Tc99m and one on mpMRI. Three out of four tumours with extra-prostatic extension were identified on mpMRIs but none on PSMA-Tc99m. Of the two tumours with bilateral seminal vesicle invasion, one was correctly identified on both mpMRI and PSMA-Tc99m, the other was not identified on PSMA-Tc99m and only unilateral involvement on mpMRI. One patient with suggestion of unilateral SV involvement on mpMRI was not identified on histo-

pathology. Two had single positive lymph node were not identified on either modality.

Conclusion: In this pilot study PSMA-Tc99m SPECT displayed promise for further development in detecting and local staging of prostate cancer. The use of Tc-99m as a radiotracer allows the radiologist to perform a 24 h washout scan which allows the bladder activity to washout and intracellular PSMA activity to be more obvious from background signal. As more patients undergo preoperative PSMA staging scans in the future, larger studies can be conducted to determine the sensitivities and specificities of PSMA-Tc99m as well as to determine any relationship between SUV and Gleason Score.

UP-409

Use of Adjuvant Androgen Deprivation Therapy in Primary Radiation Therapy for Patientes >75 Years Old with Prostate Cancer: Analysis of RTOG Data

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Introduction and Objective: The use of adjuvant androgen deprivation therapy (ADT) in selected cohorts of patients with prostate cancer (PC) treated with radiation therapy (RT) is supported by multiple studies showing a benefit in both cancer specific survival (CSS) and in overall survival (OS). Unfortunately, the side effect associated with this treatment limits its use in daily practice. We set out to determine whether adjuvant ADT is beneficial for elderly subpopulations of men with high risk treated with primary RT.

Materials and Methods: Pooled analysis among 603 patients older than 75 years of age from prospective Radiation Therapy Oncology Group (RTOG) trials that randomized patients to receive adjuvant ADT + RT vs. RT alone. Inverse probability weighting (IPW) analysis was utilized to optimize group comparison. Kaplan-Meier curves and competing risk analyses were used to express survival outcomes.

Results: Initial cohort consisted of 1045 men over age 75 years. After exclusion of patients with T4, N1, M1 and PSA> 30 ng/mL, 603 were available (62% received ADT). Median age was 77 (IQR 75-78). A total of 37% of the patients developed biochemical recurrence (BCR) with a median time from RT of 5.4 years (IQR 3.3-9.15). 9.4% developed distant metastasis (DM) with a median time of 8.2 years (4.8-8.7). 1.8% had cancer specific mortality (CSM) (median time 7.9 years, IQR 4.5-8.5) and overall mortality occurred in 8.2% (median time 8.5 years, IQR 5-8.4). In the Kaplan-Meier curves ADT patients had less BCR (p= 0.0018) and less CSS (p= 0.0078), but there was no difference in OS (p= 0.79). In the competing risk analysis ADT still conferred better CSS (p= 0.0141) but there was no difference in the competing risk curve (p= 0.155). We then used IPW to remove the bias due to group differences and repeated the analysis confirming the findings. Competitive risk curves were similar after IPW (Figure 1).

Conclusion: As expected, ADT results in a decrease in BCR and even CSS, but not OS as was noted within the entire cohort. Competing risks in part due to ADT-related adverse effects among men >75 years old questioning the use of ADT on this population.

UP-410

Prostate Biopsy Diagnosis Over 20-Years in a Large Volume Center

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Introduction and Objective: Prostate biopsie (PBx) is the gold standard for diagnosis of prostate cancer (PCa). The usage and timing of this procedure has evolved over time, especially with the introduction of prostate specific antigen (PSA). We present the diagnosis and rate of positive biopsies over 20 years in a high-volume tertiary center.

Materials and Methods: Our institutional database of PBx was queried and the indications and rate of positive PBx was analyzed over time. Only patients undergoing a first PBx with a PSA <10 ng/dL in our center were included. Patients were stratified into 4 groups (Group 1, Jan 1998-Dec 2002; Group 2, Jan 2003-Dec 2007; Group 3, Jan 2008-Dec 2012; Group 4, Jan 2013-Jun 2018). Furthermore, in an attempt to discover the predictors of a positive PBx, a multivariable logistic regression model was performed.

Results: A total of 13343 patients were analyzed, with a mean age 62.7 (SD 8.34) years, PSA 5.38 (2.25) ng/dL and prostate volume 48.32 (SD 24.65) cc. Less than 1% of the patients had an MRI (Canadian Health System does not cover MRI for primary PBx). PCa is currently found in 62.7% of the biopsies in our center (vs. 45% in Period 1, p <0.001) and 67.4% of these are Gleason 7 or above. In the multivariable model age (OR 1.064, 95% CI 1.060 – 1.069, p <0.001), PSA (OR 1.088, 95% CI 1.088 – 1.096, p <0.001), suspicious DRE (OR 0.753, 95% CI 0.699 – 0.811, p < 0.001), PV (OR -0.277, 95% CI (-)0.006 – (-)0.005, p <0.001), suspicious TRUS (OR 0.190, 95% CI 0.175, - 0.206, p <0.001) and time period (OR 0.079, 95% CI 0.030 – 0.045, p <0.001) were all predictors of a positive PBx.

Conclusion: Rate of PCa diagnosis (and clinically significant PCa) in PBx has increased over time reaching more than 60% in the most recent time period. Currently more than half of the diagnoses correspond to Gleason >7. This could be driven by an increased usage of PSA, additional biomarkers and new imaging modalities.

UP-411

Intensity-Modulated Radiation Therapy without Androgen Deprivation Therapy as a Primary Treatment for a Subset of Patients with Localised High-Risk Prostate Cancer

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Introduction and Objective: According to EAU Guidelines, long-term androgen deprivation therapy (ADT) on primary external beam radiation therapy for localised high-risk prostate cancer is recommended, however, further stratified optimum strategy is not still fully defined. To inductively evaluate this aspect, we analysed 10-year oncologic outcomes of intensity-modulated radiation therapy (IMRT) for high-risk prostate cancer.

Materials and Methods: A total of 1,327 Japanese prostate cancer patients underwent IMRT (76 Gy) between 2007 and 2014 for the first-line treatment in our single institution. Of them, 719 (54.2%) cases were categorized as high-risk group of 2017 EAU classification, which comprised the current study cohort. Definition of recurrence is based on Phoenix criteria or initiation of the second-line treatments.

Results: Median age and PSA were 72 (range: 42-87) years old and 14.8 (3.1-481.3) ng/mL, respectively. Median follow-up period was 75 (2-143) months. A total of 502 (69.8%) cases received median 9 month-long (range: 1-163) ADT. Remaining 217 patients (30.2%) were not administered any of ADT (No ADT). Biochemical recurrence (BCR) was occurred in 109 (15.2%) cases and cancer-specific death was observed in 6 (0.8%) patients. Five- and 10-year BCR-free rates were 86.3% and 76.7%, respectively. Patients with No ADT were significantly younger than ADT patients (average 70.3 vs 72.6 years old) and had lower PSA (11.6 vs 35.8 ng/mL), Gleason score (GS) (average 7.5 vs 7.9) and % of cT3 stage (30.0% vs 58.8%) (all: p <0.0001). Among clinical factors available prior to the treatment, a sole significant predictive factor of BCR in No ADT group was PSA >10 (Hazard Ratio 3.05, p=0.0003). Indeed, 5- and 10-year BCR-free rates of No ADT patients with PSA 10 (n=129) were 90.2% and 77.3%, respectively, and statistically significant survival was obtained when compared to No ADT patients with PSA >10 (n= 88, p= 0.0001, Log-rank test).

Conclusion: We have achieved long-term adequate efficacy by IMRT without ADT in a subset of patients with localised high-risk cancers. We inductively identified significant favorable factor was PSA 10. High-risk patients with PSA 10 may be little benefit with adjuvant ADT. Further cautious validation should be required to confirm our findings.

UP-412

Serum Total Testosterone as an Independent Predictor of Prostate Cancer in Men Aged Older Than 70 Years with Grey-Zone PSA

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Introduction and Objective: As the PSA-based screening for prostate cancer has been widespread, early detection of prostate cancer has been achieved on one hand, while the harms of frequent false-positive results with grey-zone PSA (serum PSA concentration less than 10 ng/mL) and complication rates from biopsy are not overlooked especially in men aged 70 years and older. Recent investigations revealed potential predictive value of serum testosterone for prostate cancer at the time of diagnosis.

Therefore, we investigated the diagnostic potential of serum testosterone as an independent predictor of prostate cancer in men aged 70 years and older with grey-zone PSA.

Materials and Methods: Between July 2015 and October 2018, 650 patients (median age 70.3 years old, range: 40.5-90.2) underwent transrectal/transperineal prostate needle biopsy. Of these, 144 patients (22.2%) with age 70 years and older with grey-zone PSA were included in the study. Univariate and multivariate logistic regression analyses were performed to identify the predictive factors for prostate cancer detection.

Results: Median PSA, prostate volume and PSA density (PSAD) were 6.4 ng/mL (range: 2.5-9.9), 41.1 cc (range: 13.4-100.8) and 0.16 ng/mL/cc (range: 0.05-0.57), respectively. Median serum total testosterone was 4.08 ng/mL (range: 0.73-12.40). Prostate cancer was detected in 75 patients (52.1%). Total testosterone level was significantly lower in prostate cancer patients than patients with negative biopsy results (p= 0.006). Multivariate analyses revealed both PSAD 0.16 ng/mL/cc (Odds Ratio (OR) 4.19, 95% Confidential Interval (CI) : 2.05 – 8.56, p <0.0001) and total testosterone <4.08ng/mL (OR 2.44, 95% CI: 1.20 – 4.99, p= 0.014) were identified as independent predictors of prostate cancer. Thirty-six patients possessing both of these two risk factors could be identified as very high-risk of pathological prostate cancer by succeeding biopsy (OR 10.15, 95% CI: 3.50 – 29.44, p <0.0001). Indeed, 28 patients (77.8%) were positive biopsy results.

Conclusion: Even at the era of MRI/US fusion biopsy, especially for the cases with equivocal MRI findings, serum total testosterone as well as PSAD may be useful predictors whether to proceed to biopsy in men aged 70 years and older with grey-zone PSA. Further cautious validation should be required to confirm our findings.

UP-413

Bone Mineral Density Testing in Men Initiating Androgen Deprivation Therapy for Prostate Cancer

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Introduction and Objective: Androgen deprivation therapy (ADT) is a staple of advanced prostate cancer (PCa) treatment, however several side-effects are associated with its long-term use. Notably, loss of bone mineral density (BMD) is accelerated which increases fracture risk. Guidelines recommend BMD testing when initiating ADT to properly assess baseline fracture risk. The objective was to examine the proportion of BMD testing in men initiating ADT in Quebec, Canada.

Materials and Methods: The cohort consists of men extracted from Quebec public healthcare insurance administrative databases diagnosed with PCa from 2001-2012 and treated by ADT. Only patients who received at least one year of continuous ADT treatment were included. The primary study outcome was the receipt of baseline BMD testing (defined as a BMD test identified from medical claims in the period from 6 months prior to and up to 12 months after ADT initiation). Multivariable logistic regression analysis was performed to identify variables associated with baseline BMD testing.

Results: We identified 7,069 patients, of which 887 (12.6%) underwent baseline BMD testing. Rates of baseline BMD testing varied by year of ADT initiation, from 7.7% in 2001-2003 to 13.3% in 2007-2009 and to 12.3% in 2013-2012. Following multivariable analyses, prior history of osteoporosis (odds ratio[OR] 2.64; 95% confidence interval [CI] 2.03-3.44; p <0.001), prior use of bisphosphonates (OR 1.79; 95%CI 1.47-2.19; p <0.001) were associated with higher odds of baseline BMD testing. Later years of ADT initiation (2004-2006, 2007-2009, 2010-2012) during the study period remained associated with higher odds of baseline BMD testing compared to the earlier years (2001-2003) (ORs ranging from 1.43-1.88; p <0.001). Conversely, patient age > 80 (OR 0.73; 95% CI 0.57-0.94; p= 0.001), greater Charlson comorbidity score (OR 0.51; 95%CI 0.34-0.75; p= 0.001), and rural residence (OR 0.60; 95%CI 0.48-0.75; p <0.001) were associated with lower odds of baseline BMD testing.

Conclusion: In our study population, rates of baseline BMD testing in men initiating ADT are low, although the rates increased during the study period. Potential identified gaps in baseline BMD testing include older, more comorbid, and patients living in rural areas. Additional emphasis on the importance of BMD testing in guidelines may be needed.

UP-414

Real-World Comparison of Abiraterone and Enzalutamide in the Post-Chemotherapy Setting in Metastatic Castration-Resistant Prostate Cancer

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Introduction and Objective: Novel hormonal agents such as abiraterone (ABI) and enzalutamide (ENZA) have both demonstrated survival benefits in the post-chemotherapy setting in metastatic castration-resistant prostate cancer (mCRPC). However, there are currently no randomized head-to-head comparisons of both agents. The objective was to compare the effectiveness of ABI and ENZA as second-line treatments in the post-chemotherapy setting in patients with mCRPC.

Materials and Methods: A retrospective population-based cohort was extracted from Quebec public healthcare administrative databases. Patients were selected on the basis of having sequentially received androgen deprivation therapy and chemotherapy prior to initiating a novel hormonal agent (ABI or ENZA) between 2012 and 2016. The index date corresponded to the date of the first prescription of ABI or ENZA. The primary outcome of interest was overall survival and evaluated with Kaplan Meier analysis and multivariable Cox proportional hazards regression.

Results: The cohort is comprised of 621 patients, with 542 in the ABI group and 79 in the ENZA group. Median age at initiation was similar (ABI:73, ENZA:74; p= 0.449). There were more patients in the ABI group with a time from last chemotherapy to index date < 6 months (ABI:72.5%, ENZA:57.0%, p= 0.005). Median duration of treatment was similar in both groups at 6 months (IQR: 3-12) (p= 0.317). Median overall survival was 15.4 months in the ABI group and 17.9 months in the ENZA group (log-rank p= 0.822). On multivariable analysis, the hazard ratio (HR) for ABI versus ENZA was 0.98 (95% CI 0.69-1.40; p= 0.884). Age greater than 75 (HR 1.40; 95% CI 1.16-1.69; p= 0.001), Charlson comorbidity scores greater than 2 (HR 1.35; 95% CI 1.09-1.66; p= 0.005), presence of symptoms (HR 1.66; 95% CI 1.37-2.00; p <0.001), time from prostate cancer diagnosis <3 years (HR 1.61; 95% CI 1.27-2.03; p <0.001), and time from last chemotherapy <6 months (HR 1.24; 95% CI 1.01-1.54; p= 0.038) were associated with worse survival.

Conclusion: In our study population, there was no difference in overall survival between ABI and ENZA as second-line treatments in the post-chemotherapy setting in mCRPC. Further evaluation of both drugs using real-world data is necessary to assess differences in other health outcomes such as treatment-related complications and use of health services.

UP-415

Impact of Enzalutamide Post-Docetaxel on the Survival of Patients with Metastatic Castration-Resistant Prostate Cancer: A Real-World Retrospective Cohort Study

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Introduction and Objective: Enzalutamide was approved in the post-chemotherapy setting of metastatic castration-resistant prostate cancer (mCRPC) in 2014 in the province of Quebec in Canada. The objective was to describe the clinical effectiveness of enzalutamide as a second-line treatment in the post-chemotherapy setting in its early post-approval period in Quebec.

Materials and Methods: This study used public healthcare administrative databases from the province of Quebec in Canada. Patients were included if they received enzalutamide from 2014 to 2016 and if they were previously treated with androgen deprivation therapy and chemotherapy but without prior exposure to abiraterone. The date of first enzalutamide use was defined as the index date. Descriptive statistics are provided as medians with interquartile range (IQR), and frequencies with percentages. Overall survival was evaluated with the Kaplan Meier method. Exploratory analysis of factors associated with survival were conducted with univariable Cox regression.

Results: The study cohort includes 79 men with a median age of 74 years and nearly a third (31.6%) had a Charlson comorbidity score of 2 or greater. Most patients had previously used first-generation antiandrogens (91.1%) and bone-targeted therapies (63.3%). Only a minority (12.6%) received 2 or more chemotherapy regimens and 41.8% had a time from last chemotherapy to the index date of fewer than 3 months. Median duration of enzalutamide treatment was 6 months (IQR: 3-12). Median overall survival was 17.9 months (95% confidence interval [CI] 12.2, 20.3). In exploratory univariable analysis, time from last chemotherapy less than 3 months was associated with worse survival (hazard ratio 2.59; 95%CI 1.37-4.87; p= 0.003).

Conclusion: In our study cohort using real-world data, enzalutamide in the post-chemotherapy setting demonstrated a median survival similar to the result shown in the clinical trial AFFIRM. Further studies examining treatment-related complications should also be conducted given the older age of patients receiving enzalutamide in clinical practice compared to clinical trials.

UP-416

Correlation between Pre-Operative MRI/Gleason Staging and Final Robotic Radical Prostatectomy Specimens

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Introduction and Objective: Previous studies including PROMIS [4] have examined MRI in ideal circumstances, typically at tertiary referral centres with the benefits of high-volume radiologists, strict protocols and inclusion criteria. Our hypothesis is that aspirational outcomes from publications such as PROMIS may not be generalizable in a multi-centre 'real world' hub and spoke system with diversity in scanner type, protocols and experience. The aim was to assess the correlation between radiological mpMRI staging and the final whole mount prostatectomy specimens in all patients who underwent Robotic Assisted Laparoscopic Prostatectomies (RALP) at the sole regional centre offering this operation in the West of Scotland. The outcome measures of interest were comparing T stage, Gleason score and prostate size.

Materials and Methods: A retrospective review of a prospectively held database was carried out of all patients who underwent RALP from December 2015 to August 2018 in NHS Greater Glasgow & Clyde. This is a regional service for the West of Scotland and reflects all robotic prostatectomies happening for a region of four health boards comprising eleven hospitals with urology services. Comparison was made between pre-op radiological staging to the corresponding histopathology report; this included the post-operative T stage, Gleason score and prostate size. We then linked the pre-op staging score of each MRI study to the corresponding histopathology report, which included Gleason score and pathological stage. Robotic prostatectomy was performed by numerous surgeons in the same institution.

Results: 402 patients underwent RALP. Mean age was 64 years (range 43-77). Mean PSA was 11 (range 2-68). We included and analysed prostate size for 262 patients who had recorded data, and the Shapiro-Wilk test confirmed the data was not normally distributed. The mean predicted MRI size was 40g compared to the final specimen size of 49.95, showing a mean MRI prediction that is 80% of the actual size, and a positive difference of 24.9% ($p<0.01$) using the Mann-Whitney U test. Matching exact T stage was 116 (28.9%); matching main T stage was 228 (56.7%); post op T stage > pre op was 138 (34.3%); post op T stage < pre op was 34 (8.5%); matching Gleason score was 268 (66.7%); post op Gleason > pre op was 109 (27.1%); post op Gleason < pre op was 24 (9.0%).

Conclusion: Our study shows that we are under-T staging 34.3% of patients, and underestimating the Gleason score in 27.1% of cases. Different risk-stratification scores have previously been developed aiding pre-operative staging but there remains inaccuracy with the limited resources at present in the investigation of prostate cancer.

UP-417

Evaluation of Malignancy Grade of Prostate Biopsies Positive for Cancer with PSA Up to 20

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Introduction and Objective: Prostatic specific antigen (PSA) is the main laboratory test used in Urology today for diagnostics of prostate diseases including cancer. It's rise in value above the normal reference of 4 ng/mL is an indication for prostate biopsy in order to confirm or exclude prostate cancer. In positive biopsies the grade of malignancy is assessed according to Gleason which usually is graded from 3 to 5 and whose presence in the tissue is marked as a sum of the most dominant tissue differentiations. Gleason values of 3+3 and 3+4 are regarded as low degrees of prostate cancer malignancy.

Materials and Methods: A representative sample of around 100 biopsies from the main author's workplace during several months' period was taken into account. Analyzed were 18 biopsy results which were positive for prostate cancer and whose PSA ranged from 4 to 20 ng/mL. Data was easily collected from computerised databases and patient histories.

Results: Out of 18 reports of prostate biopsies, positive for prostate cancer with PSA values under 20 ng/mL, in 16 of them the Gleason score was 3+3=6 and in 2 it was 3+4=7. No cancers with dominant Gleason values of 4 or 5 were found.

Conclusion: Results from the derived data indicate that prostate biopsies positive for cancer whose PSA values are not greater than 20 show a low grade of malignancy or rather Gleason values with total sums of 6 or 7 whose dominant differentiation value is 3. So, a conclusion can be formed that with PSA elevation of up to 20 there is no significant danger of higher grades of malignancy of prostate cancer and an advanced stage of the disease which can serve as a determinant for timing of biopsy, whether at the soonest or deferred

UP-418

Can Preoperative CT Findings Predict the Pathological Outcome of Robot-Assisted Radical Prostatectomy?

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Introduction and objective: Although the incidence of prostate cancer in Japan is increasing, it is still lower than in the United States. However, incidence of prostate cancer within Japanese migrants to the United States has increased. So, it has been suggested that environmental factors play an important role in the progression of prostate cancer. We focused on diet and obesity as an outcome result. Therefore, we hypothesized that the volume of adipose tissue correlates with the aggressiveness of prostate cancer.

Materials and Methods: This study included 128 prostate cancer patients who underwent robot-assisted radical prostatectomy without neo-adjuvant hormonal therapy at Kyushu University between 2016 and 2017. We quantitated the volume of adipose and muscle tissues in preoperative computed tomography images using image analyzer (SYNAPSE VINCENT®). Then, we evaluated whether there were significant correlations between adipose and muscle tissue proportion and clinicopathological parameters such as the post-operational pathological Gleason grade group.

Results: Median age of the patients, the ratio of adipose tissue volume, body mass index (BMI) and the muscle-to-height ratio were 67 (50-77), 32% (4.8 - 52.6%), 23.9 (17.0 - 30.6) and 2.315 (0.24 – 3.288), respectively. The Gleason grade group was significantly higher in patients with higher ratio of adipose tissue. Analysis using the group with BMI of 23 or more showed that the Gleason grade group was significantly lower in the group with larger muscle volume/height ratio, and the Gleason grade group was significantly higher in the cases with higher volume of visceral adipose tissue.

Conclusion: In patients with prostate cancer who underwent robot-assisted radical prostatectomy, it was suggested that malignant potential was higher in patients with higher volume of adipose tissue, especially in the group of higher visceral adipose tissue. In addition, patients with higher muscle percentage in the body showed lower malignant potential.

UP-419

Initial Experience of Free-hands Transperineal Prostate Biopsie in Cipto Mangunkusumo National Referral Hospital

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Introduction and Objective: Transperineal prostate biopsy became an emerging approach towards diagnosing prostate cancer due to its low complication rate and comparable case detection rate with Transrectal prostate biopsy. Its implementation, however, is still less commonly performed in daily practice compared with the transrectal approach. This study would like to present the results of our first experiences for free-hand transperineal prostate biopsy in Cipto Mangunkusumo National Referral Hospital (RSCM).

Materials and Methods: All procedures were done in the operating room of RSCM under sedation. The procedure was done on lithotomy position, priorly assessed for prostate surface and volume using real-time transrectal ultrasound (TRUS). All biopsies were done under the guidance of real-time TRUS, using bi-planar transducer (BK Medical). After preparation of the surgical site, we add lidocaine at the site of puncture. We put 14G needle as biopsy guidance. We used a Bard 18-gauge biopsy gun (Bard Max-Core 22 mm; Bard Medical) on the perineum at midprostate, whilst TRUS confirmed the tip location. Lateral, middle, and apical regions of the prostate were punctured for collection, and 8-14 cores approximately 10-22 mm in length was sampled depending on the prostate

volume. Patients were then evaluated for post-operative pain using visual analogue scale(VAS) immediately after the procedure ends and information of intra operative complications and operation duration were collected.

Results: Nineteen patients with mean age of 65.00±9.62 underwent free-hand transperineal prostate biopsy in RSCM within the period of January-March 2019*. Prostate volume and PSA were 40 (14-127) and 16.31 (7.21-2983), respectively. Median duration of the procedure was 30 (25-60). Amongst the 19 patients, histological examination showed 57.9% were confirmed with prostate cancer while 42.1% were with benign prostatic hyperplasia (BPH). No intraoperative complication was reported, and post-surgical VAS of 0-1 and 1-2 were 57.9% and 42.1% respectively. There was a statistically higher PSA median in prostate cancer group 44.80 (9.80-2983) compared with BPH 10.29 (6.21-19.90) with p0.02.

Conclusion: Free-hand transperineal prostate biopsy guided with TRUS is a safe and accurate diagnostic alternative to transrectal biopsy. No intraoperative complication was reported and there was a significantly higher pre-surgical PSA in cases of prostate cancer compared with BPH.

UP-420

The Interaction between YAP1 and PSA in the Castration-Resistant Prostate Cancer

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Introduction and Objective: Study on the relationship between YAP1 and PSA in different human prostate tissues. Research in the mechanism of castration-resistant prostate cancer to validate whether YAP1 regulates PSA in castration-resistant prostate cancer. Materials and Methods: 1. Using immunofluorescence staining to compare the differences in expression level and distribution of YAP1 and PSA in BPH, ADPC, and CRPC tissues. 2. Detected the expression of PSA gene in LNCaP and C4-2 cells overexpressed by YAP1 via luciferase reporter gene method. 3. The effect of overexpression YAP1 on PSA in different prostate cancer cell lines was detected by Western blot method, observing the effect of YAP1 silence on PSA protein in C4-2 cells. 4. The Q-PCR method was used to further verify the overexpression of YAP1 in C4-2 and the change of PSA mRNA expression. 5. Meanwhile, cellular immunofluorescence and WB were used to explore the effect of YAP1 on AR in C4-2 cells.

Results: YAP1 is mainly expressed in nucleus and PSA is mainly expressed in cytoplasm in human prostate tissues. In CRPC, PSA can be regulated by YAP1. After overexpression of YAP1, AR in nucleus of C4-2 cells is significantly increased, suggesting that YAP1 has the ability to assist AR to enter the nucleus.

Conclusion: YAP1 can positively regulate the expression of PSA in CRPC and help AR enter the nucleus.

UP-421

Metformin Delays the Neuroendocrine Transdifferentiation of Prostate Cancer Via Inhibiting Tumor-Associated Macrophage Infiltration

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Introduction and Objective: Neuroendocrine prostate cancer (NEPC) is a lethal subtype of castration-resistant prostate cancer (CRPC) and associated with aggressive clinical features and poor overall survival. Multiple lines of evidence suggest that NEPC might evolve from prostate adenocarcinoma (Adeno), especially under the pressure from treatment. The underlying mechanisms and potential therapeutic strategies remain to be further defined.

Materials and Methods: By using a transgenic adenocarcinoma of the mouse prostate (TRAMP) mouse model, *in vitro* macrophage migration assays, and patient samples, we investigated the effect of metformin on the neuroendocrine transdifferentiation of prostate cancer, as well as tumor-associated inflammation during the progression of prostate cancer and after androgen deprivation therapy.

Results: Metformin delays prostate cancer progression, especially the neuroendocrine transdifferentiation of prostate cancer. In TRAMP model, we found that metformin treatment significantly inhibited the progression from Well-differentiated Adeno to Undifferentiated carcinoma (supposed to be NEPC), and reduced the area occupied by the NEPC cells (AR-negative, Syn-, and CD56-positive). In LNCaP cell line, metformin could repress neuroendocrine transdifferentiation induced by hormone deprivation and IL-6 treatment. Mechanistically, metformin is capable of inhibiting tumor-associated macrophage (TAM) infiltration during the progression of prostate cancer and after androgen deprivation therapy, evidenced by reduced CD68+, CD163+ and CD204+ cells in metformin treatment group. By using *in vitro* macrophage migration assays, we found that metformin could also inhibit the recruitment of macrophage by the tumor cells.

Conclusion: Metformin is capable of repressing the neuroendocrine transdifferentiation of prostate cancer by inhibiting infiltration of tumor-associated macrophages, especially those induced by ADT suggesting that a combination of ADT with metformin could be a more efficient therapeutic strategy for NEPC treatment.

UP-422

Minimum Number of MRI Ultrasound Fusion Targeted Biopsy Cores Needed for Prostate Cancer Detection: Multivariable Retrospective Lesion-Based Analyses of Patients Treated with Radical Prostatectomy

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Introduction and Objective: The appropriate number of biopsy cores necessary for precisely diagnosing prostate cancer (PCa) by multiparametric (mp) MRI targeted ultrasound fusion biopsy (TB) is unclear. To analyze the number of mpMRI TBx cores needed for precisely detecting PCa in patients treated with radical prostatectomy (RP).

Materials and Methods: Analyzes comprise RP patients with mpMRI and TBx of PCa suspicious foci. Descriptive statistics on per patient basis included frequencies/proportions and interquartile ranges (IQR). Multivariable logistic regression analyses (MVA) on per lesion level was fitted (MVA) on per lesion level was used for calculating the number of TBx expected for positive PCa detection.

Results: Overall 771 RP treated patients amounted to 2,201 PCa suspicious mpMRI lesions, whereas PCa was detected by TBx in 1,459 of these lesions. Analyses revealed PI-RADS scores 3, 4 and 5 in 67 (8.7%), 567 (74%) and 137 (18%) of patients. Similarly, the distribution of CAPRA-S low-, intermediate- and high risk was 44%, 42%, and 14%. Distribution of mpMRI lesions that needed 1, 2, 3 and 4 numbers of TBx for PCa detection were 1159 (79%), 187 (13%), 84 (5.8%) and 29 (2.0%), respectively. Clinical significant PCa (Gleason score 4+3), was identified in 1,012 mpMRI lesions, whereas in 923 (91%) mpMRI lesions csPCa was detected with 2 TBx cores and 89 (8.8%) needed 3 TBx cores. A lesion based MVA tested independent predictors of csPCa detection that requires mpMRI lesion sampling with 3 TBx cores.

Conclusion: These RP based findings demonstrate that the majority of patients harboring intermediate/high-risk characteristics can be detected by two TBx only and in most cases, three TBx would be sufficient. Such findings might indicate matured technology and TBx procedure, especially in the intermediate/high-risk profile PCa patients.

UP-423

Impact of Prostate Volume on Tumour Detection Rate in MRI-targeted Fusion Biopsy

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Introduction and Objective: Magnetic resonance imaging (MRI) guided prostate biopsy has established itself in the diagnostic pathway for localised prostate cancer. Co-registration of MRI and real-time TRUS is essential to the success of MRI-targeted fusion biopsy (TB), however, uncertainty remains around its accuracy and subsequent tumour yield in larger prostates. We evaluated differences in rates of cancer detection using TB between small, medium and large-sized prostates.

Materials and Methods: Retrospective review of 554 men undergoing MRI-guided fusion prostate biopsy at a single centre between 2014-2018. Age, PSA, PI-RADS score, prostate volume on MRI, and TB tumour grade were collected. Patients were grouped by prostate volume: small (less than 30cc), medium (30-

70cc), and large (greater than 70cc). Clinically significant (CS) prostate cancer was defined as ISUP Grade Group 2 (GS 3+4=7) or greater. We used Fisher's exact test to compare tumour detection rates between prostate volume groups.

Results: We identified 554 men with 800 lesions on MRI. Median age was 66 years (IQR, 60-70) and PSA density 0.159 (0.102-0.269). Included men had 30 (3.7%), 219 (27.4%), 372 (46.5%), and 179 (22.4%) PI-RADS 2, 3, 4 and 5 lesions, respectively. 220 (27.5%) MRI lesions had CS cancer on TB. 127 (22.9%), 314 (56.7%) and 113 (20.4%) men had small, medium and large prostates. TB yielded more cancer in small (121, 65.8%) compared with medium (246, 54.3%) prostates (p=0.008), and in medium compared with large (49, 30.1%) prostates (p<0.001). There was a significantly higher rate of CS prostate cancer on TB in medium (138, 30.5%) than in large (25, 15.3%) prostates (p<0.001), but no difference between medium and small (57, 31.0%) prostates (p=0.925). However, the incidence of PIRADS 3-5 lesions was higher in small (99.5%) than in medium (95.5%) (p=0.03), and large (92.0%) prostates (p=0.03).

Conclusion: MRI-targeted fusion biopsy detects less CS disease in large compared with medium-sized prostates, however, there is no significant difference between medium and small-sized prostates. Reasons for this finding in large prostates could include poor co-registration on fusion biopsy, low incidence of PI-RADS 3-5 lesions, or high PSA confounding the decision to biopsy.

UP-424

Toxicity as a Limiting Factor in the Sequential Treatment of Metastatic Castration-Resistant Prostate Cancer in Real Practice

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Introduction and Objective: We focused on treatment tolerance in sequential administration of ARTA preparations, chemotherapy, and radium 223 in men with metastatic castration-resistant prostate cancer.

Materials and Methods: We evaluated the treatment toxicity of 121 patients with sequential administration of ARTA preparations, chemotherapy, and radium 223 in men with metastatic castration-resistant prostate cancer.In the pre-chemo indication abiraterone acetate with prednisone in 56 men with PS 0-1 at the age of 49-87 (median 66 years). In post chemoindication with enzalutamide in 52 patients with PS 0-2 at the age of 49-91 years (median 69 years). We focused on the toxicity after treatment with cabazitaxel in 54 patients with PS 0-1 aged 48-76 (median 64 years) after previous docetaxel treatment. The adverse effects of radium 223 treatment in patients with bone metastases were evaluated in 10 patients with PS 0-1 at the age of 67-80 years (median 68 years). Results: Of the side effects, after treatment with abiraterone acetate with prednisone, we observed grade (G) 2 anemia in 6%, G 2 vomitus in 4%, hypertension G 2 in 2%, FISI in 2%, G 1 in 4%, constipation G 1 and diarrhea G 1 in 4% , vertigo G1 in 4%, problems associated with mineralocorticoid changes in 2% of patients. After administration of enzalutamide, after previous docetaxel and cabazitaxel treatment, we observed G2 anemia in 12.5%, G 2 neutropenia in 4%, fatigue, weakness G ½ in 25%, hypokalemia G1 in 6%, acute myocardial infarction in 2%. We focused on the toxicity after treatment with cabazitaxel after previous docetaxel treatment. Lipegfilgrastim was administered preventively 24 hours after chemotherapy in each of the treated patients. Of the adverse reactions, G1 anemia was 8.5%, G3 neutropenia was 4%, fatigue G 2 was 35%, G2 diarrhea at 6%, anorexia G½ was 4.3%, vomiting G3 was 2%, skin changes 2%, leg edema 3% of treated patients. The adverse effects of radium 223 treatment in patients with bone metastases. One man was treated with radium-223 for contraindication to docetaxel and 4 after previous two-second treatment and 5 after three-sequential treatment. We recorded diarrhea G 1 in 2 patients, hematologic toxicity anemia G½ in 5 patients and thrombocytopenia G ½ 3 patients, G 3 1 patient. Radium 223 administration in earlier stages of sequential treatment is accompanied by less toxicity.

Conclusion: Treatment of castrate-resistant metastatic prostate cancer with both ARTA (abiraterone + enzalutamide) and cabazitaxel and especially radium-223 radionuclide has been shown to be accompanied by good tolerance and toxicity of lower grade in patients in routine clinical practice.

UP-425

Evaluation of Serum Prostate-Specific Membrane Antigen Levels in Patients Undergoing Brachytherapy for Prostate Cancer

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Introduction and Objective: Prostate-specific membrane antigen-positron emission tomography (PSMA-PET) imaging has already been integrated into the routine diagnostic workup of prostate cancer in Western countries. Increased PSMA expression in prostate tissues is associated with tumor aggressiveness. However, unlike prostate-specific antigen (PSA), the changes in the serum level of PSMA after brachytherapy and hormonal therapy in patients with very low initial levels are unknown. Here, we investigated the serum PSMA level in prostate cancer patients treated by brachytherapy and/or hormonal therapy.

Materials and Methods: A total of 30 patients who underwent prostate brachytherapy between October 2006 and August 2009 were included in this study. Among these, 8 patients had received hormonal therapy for 6 months prior to the brachytherapy. The median age and initial PSA level were 69 years and 6.7 ng/mL, respectively. Brachytherapy was performed transperineally with permanent low dose-rate isotopes (iodine-125). Serum levels of PSA and PSMA were assessed by sandwich enzyme-linked immunosorbent assay (Lifespan Biosciences, Seattle, WA). Measurement of serum PSA and PSMA was performed pre-treatment and at 1, 6, 12, and 24 months after treatment.

Results: At 2 years after brachytherapy, 25 patients showed a gradual decrease in serum PSA and PSMA levels. The transition of serum PSMA after brachytherapy also gradually declined, similar to PSA. The transient rise in PSA levels, seemingly in response to the brachytherapy, was also observed in PSMA levels. Serum PSA and PSMA levels in patients that received hormonal therapy decreased markedly and remained low at 2 years. Biochemical recurrence occurred in 3 patients, who all showed increased PSMA and PSA levels.

Conclusion: The serum PSMA level may be a clinically useful predictor of prognosis in prostate cancer patients undergoing brachytherapy.

UP-426

Preoperative Serum Testosterone Level as a Predictive Factor for Upstaging and Upgrading of Prostate Cancer

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Introduction and Objective: Although nerve-sparing radical prostatectomy is a currently acceptable surgical option in locally confined prostate cancer, pathological stage and grade of surgical specimen can be inconsistent after radical prostatectomy. To select an appropriate surgical technique, it is important to predict pathological result in clinically localized prostate cancer applicable to nerve-sparing radical prostatectomy. Recently, several reports have highlighted that preoperative low serum testosterone level is associated with high stage and grade prostate cancer. Therefore, we analyzed factors including preoperative serum testosterone to predict upstaging and upgrading of clinically localized prostate cancer, which is applicable to nerve-sparing radical prostatectomy.

Materials and Methods: We retrospectively evaluated patients who underwent radical prostatectomy from January 2015 to May 2018 at our institution. Patients with Grade group 1 or 2 (Gleason score 6 (3+3) or 7 (3+4)) on biopsy, PSA < 10, and clinical stage T2 were included in this study. Exclusion criteria included that all patients who had previously received 5α-reductase inhibitors, LH-releasing hormone analogues or testosterone replacement treatment, and neo-adjuvant radiotherapy. Upstaging and upgrading were defined as pathological stage T3a and Grade group 4 (Gleason score 8 (4+4)) after radical prostatectomy, respectively. We evaluated the patient demographics and outcomes after radical prostatectomy according to upstaging and upgrading. Predictive factors for upstaging and upgrading after radical prostatectomy were analyzed using a multivariate logistic regression model.

Results: Of 108 patients included in this study, upstaging and upgrading after radical prostatectomy were observed in 24 (22.2%) and 36 (33.3%) patients, respectively. Preoperative low serum testosterone level, small prostate size, and positive core number 4 on biopsy were identified as predictive factors for upstaging in multivariate analysis. Although preoperative low serum testosterone level and Grade group 2 on biopsy were related with upgrading, any factors did not have statistical significance in multivariate analysis.

Conclusion: In this study, preoperative low serum testosterone level was associated with upstaging and

upgrading after radical prostatectomy in clinically localized prostate cancer. Therefore, more attention and reconsideration are needed in patients with low serum testosterone level who are planned to undergo nerve-sparing radical prostatectomy.

UP-427

Prediction of Clinically Significant Prostate Cancer on Second Prostate Biopsy

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Introduction and Objective: Not a few patients who were negative in the initial prostate biopsy were identified as prostate cancer in the second biopsy. Therefore, it is important to identify predictive factors of clinically significant prostate cancer in a second biopsy. We evaluated the factors for predicting positive repeat biopsy in patients with initially negative prostate biopsy.

Materials and Methods: From January 2011 to December 2017, overall 211 patients performed transrectal ultrasound-guided prostate biopsy more than once due to persistent high PSA and initially negative biopsy. Among them, we excluded the patients who did not perform blood test including AST/ALT or had hepatitis or was not followed up regularly. Finally, 124 patients who met these criteria were enrolled and we retrospectively reviewed the medical records. Group 1 (n=82) was defined as patients without prostate cancer on second prostate biopsy, and group 2 (n=42) was defined as patients who were detected prostate cancer on second prostate biopsy. Among group 2, 17 patients were revealed as low risk prostate cancer according to D'amico classification. Group 2A (n=99) was defined as group 1 plus these low risk prostate cancer patients. Group 2B (n=25) was defined as the other intermediate and high-risk prostate cancer patients.

Results: Mean patients' age was 63.8 ±8.5 and mean initial PSA was 6.8 ±3.3 ng/mL. Age of group 2 was significantly higher than group 1 (p= 0.006). Group 2 had more [ASAP or HGPIN3] cores detection on initial biopsy than group 1 (p= 0.011). De Ritis ratio was significantly higher in group 2 (1.23 ±0.44 vs. 1.39 ±0.36, p= 0.045). Multivariate analysis showed that age (HR 1.089, 95% CI 1.025-1.157; p= 0.006) and [ASAP or HGPIN3] cores detection (HR 4.067, 95% CI 1.470-11.257; p= 0.007) on initial biopsy were the only predicting factors for positive second biopsy. When we classified the patients as benign plus low risk prostate cancer (group 2A) vs. intermediate and high risk prostate cancer (group 2B), age (HR 1.148, 95% CI 1.053-1.25; p= 0.002) and De Ritis ratio (HR 6.001, 95% CI 1.720-20.933; p= 0.005) was significantly higher in group 2B in multivariate analysis.

Conclusion: Age and [ASAP or HGPIN3] cores detection on initial biopsy were associated with detection of prostate cancer on second biopsy. In addition, age and De Ritis ratio were found to be predictive factors for the detection of clinically significant prostate cancer on second biopsy.

UP-428

Prognostic Impact of Non-Regional Lumps Node (NRLN) Metastasis in Bone Metastatic Prostate Cancer (PCa)

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Introduction and Objective: To elucidate the clinical impact of non-regional lymph node (NRLN) metastasis in prostate cancer (PCa), we compared the prognosis of bone metastatic PCa (M1b) with or without NRLN metastasis retrospectively. Materials and

Methods: Between 2008 and 2017, a total of 173 patients were diagnosed as metastatic PCa in our hospital. We retrospectively evaluated the prognosis of 163 patients of M1b. We excluded 33 patients with visceral metastasis. Among 130 patients, 38 were diagnosed as M1b+NRLN. We compared the progression free survival (PFS), cause specific survival (CSS), and overall survival (OS) by Kaplan-Meier analysis and log-rank test between M1b and M1b+NRLN. PSA response rate for second generation androgen-receptor target agents (ART) and docetaxel (DOC) treatment for castration-resistant PCa (CRPC) were evaluated between M1b and M1b+NRLN metastasis.

Results: Mean patient age was 73 and 72 years in the M1b and M1b+NRLN metastasis, respectively. The cause specific survival (CSS) were significantly lower in M1b +NRLN patients than M1b (33.8 vs. 52.8 months, p=0.0351, respectively). Overall survival was 33.4 months in M1b+NRLN and 47.7 months in M1b patients (p=0.109). Time to PSA progression were significantly short in M1b+NRLN (10.5 months) compared to M1b (21.6 months) (p=0.0051). One-hundred and thirteen patients progressed to castration-resistant prostate cancer (CRPC). Twenty-three patients were administrated DOC and 33 patients administrated ART. PSA response rate for DOC were 77.7% and 72.7%, and for ART were 72.7% and 64.7% in M1b and M1b + NRLN metastasis, respectively.

Conclusion: PCa patients with M1b + NRLN metastasis showed poor prognosis than M1b patients, however, DOC and ART were both effective for M1b + NRLM metastasis patients. Earlier treatment with DOC or ART might prolong OS in M1b+NRLM patients.

UP-429

Comparison of PSMA-PET to mpMRI to Accurately Identify Primary Prostate Lesions in a Radical Prostatectomy Cohort

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Introduction and Objective: Patterns of prostate-specific membrane antigen (PSMA) uptake can discriminate between benign and malignant prostate tissue. Emerging data suggests PSMA-PET may have better sensitivity than multi-parametric MRI (mpMRI), to detect clinically significant prostate cancer (csPCa). We aim to compare the accuracy of mpMRI and PSMA-PET to detect primary prostate lesions when compared with radical prostatectomy (RP) specimens.

Materials and Methods: Retrospective analysis of 45 patients from two sites was performed. Patients had mpMRI prior to prostate biopsy, PSMA-PET following diagnosis, and RP. mpMRI was performed as per PI-RADS v2 protocol, and PSMA-PET/CT was performed as per standardised protocols using 68-Gallium or 18F-DCFPyL. Lesion concordance was assessed by manually comparing mpMRI, PSMA-PET and RP reports with lesion location assigned by laterality, craniocaudal and coronal location, and zone. Data analysis were performed using SPSS 24.0.

Results: Mean presenting PSA was 12.31 (95% CI 8.88, 15.74). Index lesions on histopathology were Gleason 4+3 in 82% (n= 37). RP index lesion concordance was higher with PSMA-PET than mpMRI (96% vs 91%, p= 0.037) as demonstrated in Table 1. In one patient the index lesion at RP (Gleason 4+4) was not detected by either imaging modality. In 43 patients where PSMA-PET was concordant with RP for the index lesion, 77% (n= 33) were Gleason4+3 and mean SUVmax was 17.46 (95% CI 12.28, 22.63). Increasing Gleason score was shown to correlate with increasing SUVmax (p= 0.02). In the 41 patients where mpMRI was concordant with RP for the index lesion, 73% (n= 30) were Gleason 4+3, 95% (n= 39) were PI-RADS4, and mean index lesion size was 16.2 mm (95% CI 13.6, 18.9).

Conclusion: PSMA-PET and mpMRI demonstrate excellent concordance with index lesions seen at RP in this cohort, individually (96% vs 91% respectively) and collectively (98%). This reflects the potential of PSMA-PET to accurately locate primary lesions, and

UP.429, Table 1. RP index lesion concordance with mpMRI and PSMA-PET

		RP index lesion concordance with mpMRI		Total, n (%)
		Yes, n (%)	No, n (%)	
RP index lesion concordance with PSMA-PET	Yes, n (%)	40 (89)	3 (7)	43 (96)
	No, n (%)	1 (2)	1 (2)	2 (4)
Total, n (%)		41 (91)	4 (9)	45 (100)

the conceivable superior sensitivity of mpMRI together with PSMA-PET.

UP-430

18F-DCFPyL PET for Diagnosis of Primary Prostate Cancer in Men with Positive mpMRI and Negative Biopsy (PEPCAM) – Preliminary Results of a Prospective Trial

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Introduction and Objective: Emerging data comparing PSMA-PET to multiparametric MRI (mpMRI) suggests combining the modalities provides superior sensitivity at detecting clinically significant PCa than either modality alone. The primary objective of PEPCAM is to assess the diagnostic accuracy of 18F-DCFPyL PET to detect PCa in men with a high clinical index of suspicion based on PSA and mpMRI, and prior targeted negative biopsy.

Materials and Methods: PEPCAM is a prospective non-randomised single centre trial which started recruitment in May 2018, with a target of 30 participants. Inclusion criteria include a high clinical suspicion for PCa, positive mpMRI and 1 negative prostate biopsy with cognitive or software fusion. If the 18F-DCFPyL PET lesion is concordant with the mpMRI lesion, the patient undergoes transrectal MRI in-bore biopsy with 3-5 cores taken (Arm 1). If the 18F-DCFPyL PET lesion is discordant with mpMRI, the patient undergoes transperineal saturation biopsy of the PET lesion with 3-5 cores taken (Arm 2). If the 18F-DCFPyL PET is negative, the patient has a transperineal mapping biopsy in 12 months (Arm 3).

Results: Eight men have enrolled. Three have had negative 18F-DCFPyL PET and assigned to Arm 3. Two have had discordant lesions and assigned Arm 2, with saturation biopsies of the 18F-DCFPyL lesions pending. Three patients have had concordant lesions and assigned Arm 1, with MRI in-bore biopsies performed. One of these demonstrated ISUP Grade Group 1 PCa on histopathology, the other two were negative.

Conclusion: Despite 2 of 3 men with positive 18F-DCFPyL having negative MRI in-bore biopsies, PEPCAM remains a promising prospective trial looking at the ability of PSMA-PET to discern primary prostate lesions alone and when compared with mpMRI.

UP-431

A Phase II Study of Temsirolimus in Patients with Advanced Hormone- and Chemotherapy- Resistant Prostate Cancer

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Introduction and Objective: To evaluate the Objective Response rate (ORR) efficacy of Temsirolimus in patients with advanced hormone- and chemotherapy- resistant prostate cancer. Also, to evaluate Time to Progression (TTP) and Overall Survival (OS) in these patients.

Materials and Methods: 39 patients with pre- treated hormone and chemotherapy- resistant metastatic prostate cancer, were enrolled from December 2014 to August 2017. Temsirolimus was administered intravenously at the dose of 25 mg/m^2/week continuously until disease progression, unacceptable toxicity or consent withdrawn. The primary endpoint of the study was to evaluate the response to single agent Temsirolimus and the secondary endpoint to evaluate the survival and the toxicity profile. The sample size calculation was based on the overall response rate. According to Simon's two- stage minimax design, assuming that the expected overall response rate will be at least 22% and the minimum acceptable response rate 10%, a sample of 39 patients have to be enrolled in the first step of the study. If a minimum of 5 responses is observed, a total of 56 patients had to be accrued. Thereby, if at least 9 responses occur, the probability of accepting a treatment with a real response rate of less than 10% will be 5%. On the other hand, the risk of rejecting a treatment (at the second stage) with a response rate of more than 22% will be 20%.

Results: There was no patient with a documented complete response, whereas a partial response was documented in 1 patient (2.6%). Four patients (10.3%) achieved disease stabilization and 34 (87.1%) disease progression. Based on the serum PSA levels, 4/31 patients experienced a biochemical response (50% decrease of the PSA levels) whereas 27 had a biochemical progression. The median PFS for the whole group of patients was 2.1 months, while in patients with a biochemical response and biochemical disease progression the median PFS was 2.4 months and 2 months respectively (p= 0.384). The median OS was 8.3 months.

Conclusion: The results presented in the current study confirm that Temsirolimus monotherapy is not an effective therapeutic option in both chemotherapy naïve and chemo resistant castration- resistant prostate cancer.

UP-432

Investigation of Paramagnetic Centers in Blood and Tumor Tissues of the Men with Prostate Cancer

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Introduction and Objective: The aim of the given work was to study paramagnetic centers in blood and tumor tissue of men with prostate tumors.

Materials and Methods: EPR spectra were recorded in the temperature interval of 90-100K, using EPR method. In case of blood investigations, the material of the study was blood samples of practically healthy men and men with cancer of prostate (CaP). In case of tumor tissue EPR studies the material was tumor tissues of men with benign hyperplasia of prostate (BHP) and CaP and the mitochondrial suspensions gained from these tissues, respectively.

Results: Blood EPR studies revealed increased intensity of the signal of Mn^{2+}-containing complexes (g=2.14) corresponding to superoxide dismutase (SOD) in case of CaP. As for EPR signal of non-heme iron nitrosil complexes (FeSNO, g=2.03), it was registered both in blood of CaP and control group patients. Intensity of the EPR signal of oxidised ceruloplasmin (Cp) (g=2.056) was increased in CaP patients. As for EPR signal of Fe^{3+}-transferrin (g=4.3) it was decreased in CaP patients. In case of CaP we have observed the signal of Mo^{5+}- containing complexes (g=1.97) in blood (that corresponds to Mo^{5+}-containing xanthine oxidase) that is not observed in control group. As for EPR signal of MetHb (g=6.0) we observed sharply increased signal in case of CaP compared with BHP patients. In case of tumor tissue, EPR spectra was recorded for free radicals (g=2.00), as well as for Fe-S clusters at g=1.94, g=2.01, relatively. However, the signal of Fe-S clusters was decreased, and free radicals signal was increased in case of CaP tissue. On the EPR spectra of mitochondrial suspension gained from CaP tissue a sharp increase of cytochrome P450 signal (g=2.25) and the decrease of SOD2 signal (g=2.14) has been detected.

Conclusion: Development of CaP causes worsening of the antioxidant status of blood on the basis of declined SOD activity and decreased Fe^{3+}-transferrin signal and formation of MetHb. In case of CaP tumor tissues intensification of free radical processes and the damage of Fe-S clusters point towards the impeded function of Fe-S cluster-containing Respiratory Complexes I and III.

UP-433

Outcomes of Freehand Local Anaesthetic Transperineal Biopsies: Can Systematic Mapping Biopsy Safely be Omitted?

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Introduction and Objective: The PrecisionPoint Transperineal (TP) Access System facilitates targeted and systematic sectoral "Ginsburg" TP biopsy in outpatients under local anaesthetic. We present the histological outcomes of targeted and systematic biopsies to determine if prostate cancer would be missed if only a target biopsy was performed.

Materials and Methods: Two hundred and eighty-five patients had targeted biopsies combined with mapping systematic sectoral biopsies over a 16 , month period at a single institution. Mean (range) systematic 24 (5-42) and target 4.2 (1-11) cores. MRI scans were reported using PIRADS v2. Histopathological results were correlated with the presence of an MRI abnormality within a spatial quadrant and the other adjoining or non-adjoining (opposite) quadrants.

Results: Mean age was 66.8 (36-80) years, median PSA 7.4 (0.91-116) ng/mL and mean prostate volume 45.8 (13-150) cc. 81% (230/285) were primary biopsies. 237/285 (83%) of biopsies were positive with 83% (197/237) having clinically significant disease (Gleason 3+4 or greater). Tolerability was good with 2 cases being abandoned due to vasovagal epi-

sodes. There was histological concordance with the MRI reported positive quadrant in 227/237 (96%). In 41/237 (17%) the positive biopsies were confined to the quadrant containing the lesion (single focal quadrant). 101/237(43%) also had disease in 3 or all 4 quadrants (true multifocal disease). In 33/237 (14%) the target biopsy was negative, but systematic biopsy revealed disease in the same quadrant and adjacent quadrant/s. A further group of 10 patients (4%), had a negative target biopsy, but cancer was found in an adjacent and/or opposite quadrant; of these, 2/10 had clinically significant disease. 93 patients proceeded to RARP. The majority were for PIRADS 4 or 5 disease (56/93, 60% and 10/93, 11% respectively). A smaller proportion, 25% (23/93) were for PIRADS 3, and 3% (3/93) for PIRADS 2 disease.

Conclusion: Systematic sectoral biopsy remains an essential tool in prostate cancer diagnosis and subsequent management. Target biopsy alone, even from the quadrant with an MRI lesion may under assess disease burden.

UP-434

Clinical Results of Low-Dose-Rate Brachytherapy for Localized Prostate Cancer -Correlations of Post-Implant Regional Dosimetric Parameters at 24 Hours and One Month

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Introduction and Objective: To evaluate the correlations of post-implant regional dosimetrics at 24 hours (24 h) and 1month after implant procedures, with clinical outcomes of low-dose-rate (LDR) brachytherapy for localized prostate cancer.

Materials and Methods: Between January 2008 and December 2014, 130 consecutive patients treated for localized prostate cancer, receiving definitive iodine-125 (125I) brachytherapy treatment were retrospectively analyzed. All patients underwent post-implant CT imaging for dosimetric analysis at 24 h and 1 month after implantation procedure. Prostate contours were divided into quadrants: anterior-superior (ASQ), posterior-superior (PSQ), anterior-inferior (AIQ), and posterior-inferior (PIQ). Predictive factors and cut-off values of biochemical failure-free survival (BFFS) and toxicities of LDR brachytherapy were analyzed.

Results: The median follow-up time was 69.5 months. Seven patients (5.4%) had biochemical failure. The 3-year and 5-year BFFS rates were 96.7% and 93.1%, respectively. On multivariate analysis, prostate-specific antigen and Gleason score were significant prognostic factors for biochemical failure. D90 (the minimal dose received by 90% of the volume) of PSQ and PIQ at 24 h, and D90 of PSQ at 1 month were also significant factors. The cut-off values of PSQ D90 were 145 Gy at 24 h and 160 Gy at 1 month. D90 of the whole prostate was not significant at 24 h and at 1 month. D90 of PSQ at 1 month was a significant factor for rectal hemorrhage.

Conclusion: Post-implant D90 of PSQ is significantly associated with BFFS for localized prostate cancer not only at 1 month, but also at 24 hours. D90 of PSQ at 1 month is also a significant factor for rectal hemorrhage.

UP-435

Elevated Expression of EphA2 is Associated with Poor Prognosis after Radical Prostatectomy in Prostate Cancer

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Introduction and Objective: Therapeutic targeting of receptor protein tyrosine kinases (PTKs), such as eGFR or HER2/neu, has been proven successful for clinical application to cancer. However, there are fewer reports about PTKs for prostate cancer than for other carcinomas. Elevated expression of the EphA2 receptor tyrosine kinase, a 130-kDa transmembrane protein, is associated with poor prognosis of certain cancers when the enzyme is dephosphorylated by LMW-PTP. Here, we investigated whether EphA2 is useful as a predictive factor for biochemical recurrence of prostate cancer. We also determined whether EphA2 is significantly correlated with LMW-PTP, E-cadherin, and Ki-67 in prostate cancer patients.

Materials and Methods: The subjects were 241 patients who underwent a total prostatectomy, at our hospital, between 2007 and 2011. EphA2 expression was categorized as high-expression or low-expression by two pathologists. We examined the relationship between EphA2 expression levels and clinicopathological factors including biochemical recurrence. We conducted Spearman rank correlation tests between EphA2 and LMW-PTP, E-cadherin, and Ki-67.

Results: 121 patients (50.2%) were placed in the EphA2 high expression group; 120 patients (49.8%) were placed in the low expression group. A log-rank test revealed early biochemical recurrence in the high EphA2 expression group (p= 0.0001). Gleason score (p= 0.022), Ki-67 labeling index (p= 0.0002), and biochemical recurrence (p <0.0001) were more frequently identified in the EphA2 high expression group. Furthermore, multivariate analyses revealed that high EphA2 expression level was an independent prognostic factor for biochemical recurrence (HR= 3.62, 95% CI= 2.39–5.61, p <0.0001). In addition, the correlations between EphA2 and both LMW-PTP and Ki-67 labeling index were positive (Spearman's ranked correlation coefficients: 0.521 and 0.483, respectively, p <0.0001 in both cases). On the other hand, EphA2 and E-cadherin were negatively correlated (Spearman's ranked correlation coefficient: −0.585, p <0.0001).

Conclusion: EphA2 overexpression is predictive of aggressive prostate cancer behavior. EphA2 may be a powerful prognostic biomarker for decision-making in postoperative follow-up after total prostatectomy, and with regard to the need for relief treatment. It may be an important therapeutic target.

UP-436

Somatosensory Evoked Potentials in Patients with Postprostatectomy Erectile Dysfunction: Prospective Study.

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Introduction and Objective: Somatosensory evoked potential (SSEP) has been studied in erectile dysfunctions (ED). We aimed to evaluate correlation with SSEP and ED in patients undergoing radical prostatectomy (RP). We used pudendal nerve SSEP.

Materials and Methods: We prospectively analyzed data from 23 patients who underwent radical prostatectomy from January 2015 and December 2017, with at least 6 months of follow-up. Patients were divided into 2 groups depending on the presence/absence of erectile dysfunction. Demographic characteristics, preoperative evaluations, postoperative outcomes and pudendal nerve SSEP before and after RP were assessed. In pudendal nerve SSEP, stimulating electrodes are placed at penis, and recording electrodes are placed at levels of lumbar spine (L1) and cortex. Cortical and lumbar latencies were obtained with stimulation of the pudendal nerve using averaging technique. Erectile function recovery was defined as question 2 and 3 on the Ineternational Index of Erectile Function (IIEF)-5.

Results: Patients with/without postoperative erectile dysfunction were 10 and 13, respectively. Demographic characteristics and perioperative outcomes according to presence/absence of erectile dysfunction were similar. Patients with erectile dysfunction showed significant increase in lumbar (17.7 vs 16.3 ms, p=0.045) and cortical (52.1 vs 47.0 ms, p=0.001) latencies of pudendal nerve SSEP after surgery. They also showed significant prolongation of lumbar (1.4 vs 0.1 ms, p=0.001) and cortical (4.1 vs 0.5 ms, p=0.03) latencies of pudendal nerve SSEP before and after RP.

Conclusion: Our results suggest that pudendal nerve SSEP can be an effective tool in the evaluation of patients with erectile dysfunction. The test can be used to provide more definitive assessment of erectile dysfunction.

UP-437

Somatosensory Evoked Potentials in Patients with Postprostatectomy Erectile Dysfunction: Retrospective study.

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Introduction and Objective: Somatosensory evoked potential (SSEP) has been studied in erectile dysfunctions (ED). We aimed to evaluate correlation with SSEP and ED in patients undergoing radical prostatectomy (RP). We used pudendal nerve SSEP.

Materials and Methods: We retrospectively analyzed data from 58 patients who underwent radical prostatectomy from January 2015 and December 2017, with at least 6 months of follow-up. Patients were divided into 2 groups depending on the presence/absence of erectile dysfunction. Demographic characteristics, preoperative evaluations, postoperative outcomes,

pudendal nerve SSEP after RP were assessed. In pudendal nerve SSEP, stimulating electrodes are placed at penis, and recording electrodes are placed at levels of lumbar spine (L1) and cortex. Cortical and lumbar latencies were obtained with stimulation of the pudendal nerve using averaging technique. Erectile function recovery was defined as question 2 and 3 on the International Index of Erectile Function (IIEF)-5.

Results: Patients with/without postoperative erectile dysfunction were 41 and 17, respectively. Demographic characteristics and perioperative outcomes according to presence/absence of erectile dysfunction were similar. Patients with erectile dysfunction showed significant prolongation in lumbar (18.8 vs 17.3 ms, p=0.013) and cortical (52.8 vs 48.6 ms, p=0.001) latencies of pudendal nerve SSEP after RP.

Conclusion: Our results suggest that pudendal nerve SSEP can be an effective tool in the evaluation of patients with erectile dysfunction. The test can be used to provide a more definitive assessment of erectile dysfunction.

UP-438

The Predictive Value of Pre-biopsy Multiparametric MRI as a Diagnostic Test for Prostate Cancer: A Retrospective Review

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Introduction and Objective: Prostate cancer (PCa) diagnosis has been evolving over the years with increased experience and accumulated evidence. Recent changes in international guidelines reflected the efficacy of MRI in guiding targeted prostate biopsy. However, MRI as a stand-alone diagnostic test remains controversy. We conducted this review to investigate if mpMRI has good negative predictive value and may be used as a triage test to avoid unnecessary biopsies.

Materials and Methods: Retrospective review and analysis were conducted from a prospective database of patients who underwent transperineal prostate (TP) biopsy with pre-biopsy MRI between July 2018 and December 2018 at Eastern Health.

Results: A total of 119 men (median age = 63 (IQR 57-67)) underwent TP biopsy between July 2018 to December 2018. The median PSA was 6.7 ng/mL (IQR 4.9-9); 102 out of 119 (85.7%) patients were biopsy naive. Ninety patients (94.1%) underwent pre-biopsy MRI. The overall prostate cancer prevalence was 56% for the MRI cohort. In these 90 patients, 39 (43%) had negative mpMRI (benign, PI-RADS 1 or 2 lesions). Their median PSA was 6.3 ng/mL (5-7.2 ng/mL). Fifteen out of 39 (38.5%) patients had non-benign biopsy (median PSA = 6.7), 6 of which (15.4%) had Gleason 4 or 5 patterns. Fifteen patients had PI-RADS 3 lesions on mpMRI. Nine of them (60%) had positive biopsy and 7 (46%) had moderate to high risk disease. In 22 patients with PI-RADS 4 lesions, 10 patients (45.5%) had moderate to high risk disease, whereas 7 patients (31.8%) had negative biopsy. In the 12 patients with PI-RADS 5 lesions, all biopsies were positive and 9/12 (75%) had moderate to high risk prostate cancer. Positive predictive value of high PI-RADS lesion on mpMRI in this study group was 79.4%. For overall prostate cancer, with a definition of positive MRI being >=PI-RADS 3, the NPV in our series is 61.5% and the PPV is 73.5%. For csPCa, the NPV of MRI is 84.6% and PPV of 53.1%

Conclusion: MpMRI appears to have good PPV especially with high PI-RADS lesions. However, a negative or insignificant MRI alone would have missed clinically significant prostate cancer in some patients.

UP-439

More Prostate Cancer Patients Aged 75 Years Old Are Willing to Receive Radical Surgery Than a Decade Ago in China

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Introduction and Objective: We analyzed the shift of first treatment choice among elder prostate cancer (PCa) patients in China in the past 19 years.

Materials and Methods: Using an online database, PC-FOLLOW (http://www.pc-follow.cn), we retrospectively analyzed 3172 PCa patients' data, who were aged 75 years at diagnosis between January 1999 and May 2018. The patients were grouped according to their first treatments after diagnosis, and the mean age, PSA value and Gleason score at diagnosis were compared between groups.

Results: Totally, 1055 patients received radical surgery (RS group) as the first treatment, 2096 received hormonal therapy (HT group), 11 received radiation therapy, and 10 received chemotherapy. The last two groups were not further analyzed due to small number. The mean age, PSA and Gleason score of patients in the RS group were 77.2 ±2.4, 40.5 ±147.4 and 7.4 ±1.5, respectively, and those in the HT group were 80.2 ±3.9, 277.7 ±841.9 and 7.2 ±1.7, respectively. RS group had significantly younger mean age (P< 0.05) and lower PSA (P< 0.01) than HT group. For yearly analysis, data before 2005 were merged as one due to the patient number. The yearly percentages of patients receiving RS from before 2005 to 2018 were 21.6%, 17.0%, 24.6%, 28.8%, 25.7%, 17.2%, 22.6%, 30.9%, 29.0%, 33.2%, 41.3%, 45.2%, 40.7% and 56.8%, respectively. The yearly mean ages of patients in RS group were 76.6 ±2.1, 76.4 ±1.8, 75.8 ±1.1, 76.3 ±1.6, 77.2 ±2.7, 77 ±2.8, 76.6 ±1.8, 76.8 ±2.1, 76.9 ±2.4, 77 ±2.5, 77.3 ±2.7, 77.7 ±2.4, 78 ±2.2 and 78.2 ±3.0, respectively, while the mean ages in HT group were 79 ±3, 80 ±3.5, 79.8 ±4.0, 80.1 ±4.0, 79.7 ±3.9, 80.3 ±4.0, 79.9 ±3.6, 79.6 ±3.8, 79.9 ±3.7, 80 ±3.5, 80.3 ±4, 81.2 ±4.5, 80.9 ±4 and 81.5 ±3.8, respectively.

Conclusion: More patients aged 75 years in China receive RS in recent years than a decade ago, and their ages are also increased. The yearly percentages of patients receiving RS were below 30% before 2011, over 40% after 2014, and reached 56.8% in 2018. Their mean age were increased from around 76 to 78, while the mean age of HT patients remained stable around 80.

UP-440

Breast Metastasis from Prostate Carcinoma Mimicking as a Second Primary: A Case Report

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Introduction and Objective: The occurrence of a breast mass in a patient known to have prostatic carcinoma may cause confusion, whether it is a primary breast carcinoma or a metastasis from prostate carcinoma. Both breast metastasis from prostate carcinoma and primary breast carcinoma in men are rare. The objective of this report is to present a case of a patient diagnosed with metastatic castrate-resistant prostatic adenocarcinoma who developed a breast mass. Specifically, this report aims to differentiate a primary breast carcinoma from a breast metastasis from prostate carcinoma through immunohistochemistry staining.

Materials and Methods: This patient presented with a breast mass while undergoing hormonal therapy for prostatic adenocarcinoma. The initial histopathologic diagnosis of the breast specimen was a primary breast carcinoma on top of a primary prostate adenocarcinoma. The patient was initially managed as a double primary carcinoma of the breast and prostate with Docetaxel. After four cycles of Docetaxel, the breast mass enlarged. Immunostaining with prostate-specific antigen (PSA), prostatic acid phosphatase (PSAP) and cytokeratin 7 (CK7) were done on the breast specimen to validate the initial diagnosis.

Results: The immunostains revealed a negative PSA, moderately staining PSAP and negative CK7. These stains later confirmed the diagnosis of a breast metastasis from prostatic adenocarcinoma.

Conclusion: Although uncommon, the need to differentiate between primary breast carcinoma and breast metastasis from prostate carcinoma is crucial because of the consequences it has on hormonal treatment and prognosis. It is recommended that all patients with prostate carcinoma presenting with a breast mass, be examined thoroughly. Biopsy and immunostaining should be utilized as an important tool to differentiate between the two diseases for prognostication and appropriate management.

UP-441

Neoadjuvant Chemotherapy Before Radical Prostatectomy for Locally Advanced Prostate Cancer: A Systematic Review and Meta-Analysis

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Introduction and Objective: Radical prostatectomy (RP) only is not adequate for the locally advanced prostate cancer, instead a multimodal approach is implemented. Neoadjuvant or adjuvant therapies such as pelvic radiation therapy, ADT and chemotherapy are used to minimalize the risk of positive surgical margin and recurrence. Chemotherapy has been the standard of care for CRPC since the development of the taxanes. In recent years, its application has been widened to mHSPC. The question remains whether

neoadjuvant administration of cytotoxic agents with RP can improve perioperative outcome and long-term survival. The present study aims to synthesize current available evidence on the tolerance and efficacy of neoadjuvant chemotherapy (NAC) followed by RP, and to combine data from multiple studies using meta-analysis.

Materials and Methods: The present study was conducted according to PRISMA guidelines and registered on the international prospective register of systematic reviews (PROSPERO registration number: CRD42019123375). Authenticated databases including PubMed/Medline, Embase, Web of Science, Ovid, Web of Knowledge, and Cochrane Library were extensively searched. MeSH words and free words with the following searching strategy: "prostate cancer" AND "neoadjuvant" AND ("docetaxel" OR "taxane" OR "chemotherapy") were used in the literature search. The quality of selected studies was appraised using The GRADE approach.

Results: We included 20 studies with 746 participants for analysis. NAC was used independently or together with neoadjuvant ADT or tyrosine kinase inhibitors for dose optimization. The median Gleason Scores of the included patients ranged from 7 to 8. A significant proportion of locally advanced prostate cancer patients were able to tolerate NAC, with only 90 (12.1%) discontinued treatment. Partial PSA response (more than 50% reduction) before RP was achieved in 38 of 110 patients received NAC only, while in 122 of 123 patients received NAC plus neoadjuvant ADT. In term of long-term survival, 35.7% to 73.3% patients were disease-free during follow-up (median 13.0 to 141.6 months), with a pooled disease-free survival rate of 52.9% (95% CI 46.9%-59.7%).

Conclusion: The neoadjuvant administration of taxanes-based chemotherapy before RP is safe and effective for locally advanced prostate cancer patients. Future research should optimize the dosage and the combination regimens of NAC, as well as investigate which subsets of patients will benefit from NAC.

UP-442

The Correlation Between PI-RADS Score and the Detection of Prostate Cancer Using MRI-Ultrasound Fusion Guided Trans-perineal Prostate Biopsy

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Introduction and Objective: MRI-Ultrasound fusion guided biopsy has revolutionized the diagnosis of prostate cancer utilizing the prostate imaging reporting and data system (PI-RADS) scoring system by multiparametric MRI (MPMRI). The fusion prostate biopsy system, on the other hand, enables accurate targeting of the tumor. Our objective is to determine the detection rate of clinically significant prostate cancer using fusion biopsy and to establish the correlation between PI-RADS score and Gleason's score.

Materials and Methods: A retrospective cohort study was conducted to correlate PI-RADS score and prostate cancer using MRI-Ultrasound fusion guided trans-perineal prostate biopsy from June 2017 to July 2018 in a single institution. 135 men presented with an elevated PSA, abnormal DRE or a previous negative prostate biopsy, but with a persistent rise in PSA. 220 lesions were identified.

Results: Two hundred twenty PI-RADS 3, 4 and 5 lesions were detected in 135 patients. 131/ 220 lesions were scored as PI-RADS 3, 61 as PI-RADS 4 and 28 as PI-RADS 5. Lesions were biopsied using the MRI-Ultrasound fusion guided trans-perineal prostate biopsy system. 25.2% PI-RADS 3 lesions, 72.1% PI-RADS 4 lesions and 85.7% PI-RADS 5 lesions respectively were positive for malignancy. Overall, there were 45.9% lesions classified as PI-RADS 3 to 5 that were positive for prostate carcinoma. 54.8% of patients were diagnosed with prostate adenocarcinoma. 29.2% with a maximum score of PI-RADS 3, 75% with a maximum of PI-RADS 4 and 84.6% with a maximum of PI-RADS 5 harbored malignancy. In terms of location, 44.6% of malignancies were in the peripheral sector, 30.7% in the anterior sector, and 24.8% in the central sector of the prostate. Using Spearman correlation, the rho coefficient was 0.3153 (p-value =.00013) which denotes a significant positive relationship between Gleason and PI-RADS score.

Conclusion: Our data validate the superiority of MP-MRI in the identification, localization and characterization of prostate cancers. We also verified the positive correlation between PI-RADS score and Gleason score.

UP-443

Phosphodiesterase-5 Inhibitors and Risk of Dementia in Prostate Cancer Patients with Androgen Deprivation Therapy

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Introduction and Objective: Androgen deprivation therapy (ADT) for prostate cancer (PCa) has been reported increasing the risk of subsequent dementia. However, there is little information on the potential benefits of phosphodiesterase-5 inhibitor(PDE5i) use on dementia in patients with ADT.

Materials and Methods: We conducted a population-based cohort study of 5,549 PCa patients with ADT utilizing the Chang Gung Memorial Hospitals Research Database (CGRD) of Taiwan between 2009 and 2016. Nested-case control propensity score-matched analysis was performed between PDE5i user and non-users two groups. Cox proportional hazards models and Kaplan-Meier survival analysis between PDE5i use and the risk of dementia.

Results: Of the 5,549 selected patients with ADT, 4,483 patients were met all inclusion and exclusion criteria. With a mean follow up of 4.3 ±2.5 years, 206 PDE5i users and 824 non-PDE5i users were included in the study cohort. A propensity score-matched analysis with adjusted hazard ratio of 0.31 (95% confidence interval = 0.10 to 0.94, P < 0.001) demonstrated a significantly decreased risk of dementia in the PDE5i users.

Conclusion: PDE5i use in patients with ADT for prostate cancer had a benefit effect to decrease the risk of dementia. Further studies are warranted to examine between PDE5i and dementia in ADT patients

UP-444

A Retrospective Single Centre Comparison Between 200 Cases of Transperineal Prostate Biopsy and 200 Cases of Transrectal Prostate Biopsy

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Introduction and Objective: To compare the clinical outcomes and pathological findings of transperineal prostate biopsy (TPUSPB) and transrectal prostate biopsy (TRUSPB) in a secondary referral hospital.

Materials and Methods: This was a retrospective study of the first 200 TPUSPB done in our centre with one of our recent reported TRUSPB cohort. The prebiopsy patient parameters, including patient ages, clinical staging, serum PSA levels, prostate sizes, PSA densities as well as pathological results and 30-days complication and readmission rates were retrieved from the clinical notes. The results of the two groups were then compared.

Results: The 200 TPUSPB were performed from January 2018 to October 2018, while the 200 TRUSPB were done from June 2015 to April 2016. There was no statistical difference between the mean ages of the two groups. The mean prostate size of TPUSPB was smaller than TRUSPB (50.5 ml vs 60 ml, p= 0.001) and higher median PSA level (10.95 ng/dL vs 10 ng/dL, p= 0.158). So, the median PSA density of TPUSPB was higher (0.231 vs 0.172, p= 0.001). The prostate cancer detection rate of TPUSPB was statistically higher than that of TRUSPB (34.5% and 25%, p= 0.038). TPUSPB also showed better prostate cancer detection rate after stratifying PSA density and prostate size. For complications, there was no fever developed in TPUSPB group, while 4% of TRUSPB group had fever, requiring admission of at least one-week course of intravenous antibiotic. (p= 0.004). On the other hand, TPUSPB had more post-procedure acute retention of urine (3% vs 1%, p= 0.317) and haematuria requiring admission (1% vs 0%, p= 0.500), but none suffered from per-rectal bleeding (0% vs 0.5%, p= 0.156).

Conclusion: TPUSPB is a safer procedure of getting prostate biopsy with no infection complication. Meanwhile, TPUSPB has better prostate cancer detection rate as compared with TRUSPB.

UP.443, Table 1. Characteristics of the prostate cancer patients with androgen deprivation therapy (ADT) according to use of phosphodiesterase type 5 inhibitors (PDE5i)

	Before matching			After 1:4 matching		
Variable	PDE5i (n= 253)	Non-PDE5i (n= 4,230)	P-value	PDE5i (n= 206)	Non-PDE5i (n= 824)	P-value
Age (year)	65.9±6.7	75.2±8.2	<.001	67.4±6.2	68.6±7.2	0.02
Age group			<.001			0.829
< 65 years old	106 (41.9)	441 (10.4)		59 (28.6)	247 (30.0)	
65-74 years old	123 (48.6)	1419 (35.6)		123 (59.7)	473 (57.4)	
≥ 75 years old	24 (9.5)	2370 (56.0)		24 (11.7)	104 (12.6)	
Initial androgen deprivation therapy			<.001			0.157
GnRH agonists	175 (69.2)	2337 (55.3)		144 (69.9)	514 (62.4)	
Oral antiandrogens	18 (7.1)	616 (14.6)		12 (5.8)	79 (9.6)	
Oral estrogens	5 (2.0)	184 (4.4)		3 (1.5)	19 (2.3)	
Other combinations	55 (21.7)	1093 (25.8)		47 (22.8)	212 (25.7)	
Comorbidity in the previous year						
Alcohol abuse	0 (0)	6 (0.1)	0.706	0 (0)	0 (0)	-
Tobacco use disorder	6 (2.4)	324 (7.7)	0.002	5 (2.4)	13 (1.6)	0.380
Hypertension	45 (17.8)	1245 (29.4)	<.001	40 (19.4)	150 (18.2	0.688
Coronary heart disease	16 (6.3)	363 (8.6)	0.210	13 (6.3)	45 (5.5)	0.636
Heart failure	2 (0.8)	124 (2.9)	0.045	2 (1.0)	7 (0.9)	1.000
Hyperlipidemia	30 (11.9)	537 (12.7)	0.697	22 (10.7)	77 (9.3)	0.561
Diabetes mellitus	28 (11.1)	645 (15.3)	0.071	23 (11.2)	92 (11.2)	1.000
Atrial fibrillation	1 (0.4)	100 (2.4)	0.040	1 (0.5)	4 (0.5)	1.000
Ischemic stroke	2 (0.8)	175 (4.1)	0.008	2 (1.0)	3 (0.4)	0.263
Chronic kidney disease	5 (2.0)	228 (5.4)	0.018	5 (2.4)	25 (3.0)	0.643
Chronic liver disease	14 (5.5)	260 (6.2)	0.693	13 (6.3)	53 (6.4)	0.949
Traumatic brain injury	0 (0)	18 (0.4)	0.351	0 (0)	0 (0)	1.000
Depression	0 (0)	15 (0.4)	0.418	0 (0)	0 (0)	1.000
Chronic obstructive pulmonary disease	6 (2.4)	348 (8.2)	0.001	6 (2.9)	1 (1.9)	0.135
Medication in the previous year						
Antiplatelet agents	18 (7.1)	742 (17.5)	<.001	16 (7.8)	65 (7.9)	0.954
Anticoagulation	1 (0.4)	61 (1.4)	0.104	1 (0.5)	2 (0.2)	0.385
ACEi/ARB	25 (9.9)	773 (18.3)	0.001	23 (11.2)	70 (8.5)	0.232
Statin	24 (9.5)	418 (9.9)	0.838	16 (7.8)	59 (7.2)	0.764
Anti-hyperglycemia agents	19 (7.5)	461 (10.9)	0.090	16 (7.8)	57 (6.9)	0.671
NSAID	75 (29.6)	1219 (28.8)	0.778	52 (25.2)	179 (21.7)	0.279
Prostate-specific antigen			<.001			0.673
<10 ng/ml	246 (97.2)	3415 (80.7)		199 (96.6)	797 (96.6)	
>= 10 ng/ml	4 (1.6)	597 (14.1)		4 (1.9)	20 (2.4)	
No available data	3 (1.2)	218 (5.2)		3 (1.5)	7 (0.9)	

UP.444, Table 1. Patients' characteristics, prostate cancer detection rates and complications in transperineal USG guided prostate biopsy (TPUSPB) and transrectal USG guided prostate biopsy (TRUSPB)

	TPUSPB	TRUSPB	P-value
Age (mean)	67.5	69.5	0.06
Prostate size (ml) (mean)	50.5	60.0	0.001
PSA Level (ng/dL) (median(IQR))	10.95 (12.3)	10 (9.0)	0.158
PSA Density (median(IQR))	0.231 (0.35)	0.172 (0.21)	0.001
Detection Rate	34.5%	25%	0.038
Detection Rate Stratified to PSA Density			
<0.15	13.6% (8/59)	8.33% (7/84)	0.337
>=0.15	43.2% (61/141)	37.0% (43/116)	0.315
Detection Rate Stratified to Prostate Size (ml)			
<30	47.5% (19/40)	39.1% (9/23)	0.527
30-50	41.0% (32/78)	30.8% (20/65)	0.204
>50	22.0% (18/82)	18.8% (21/112)	0.588
Sepsis Rate	0%	4%	0.004
Retention of urine	3%	1%	0.317
Rectal Bleeding	0%	0.5%	0.156
Haematuria	1%	0%	0.500

UP-445

Application of U-net Convolutional Neural Network in Auto Segmentation and Reconstruction of 3D Prostate Model in Prostatectomy Navigation

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UP-446

Expanded Experience with HIFU and Prostate Cancer

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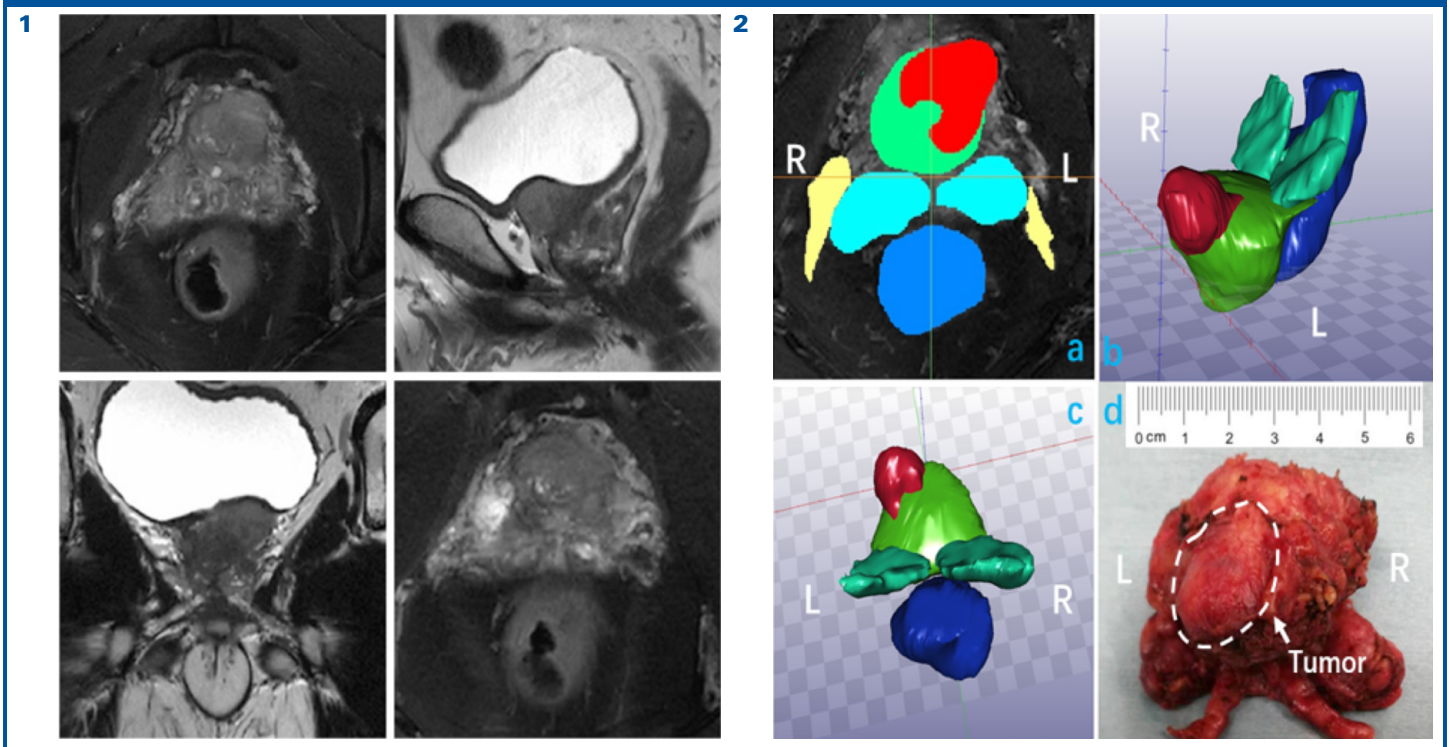
Introduction and Objective: We present our expanded experience treating prostate cancer patients with HIFU (High Intensity Focused Ultrasound) at Houston Methodist with up to 3 year follow-up.

Materials and Methods: We obtained IRB approved informed consent on 36 patients treated with HIFU from July 2016 to March 2019. The 36 men were between ages 56 to 83, mean 71. Clinical State: T1c: 34 patients (94%) (2 XRT failure), T2a: 2 patients (6%). The PSA ranged between 1.33 ng/mL (post radiation) and 16 ng/mL. IPSS (International Prostate Symptom Score) pre-treatment 1 to 35, mean of 10, and pre-IIEF (International Index of Erectile Function) was 5 to 25, mean of 15.5. (16 with IIEF > 18, the rest were < 15).

Results: At 12 months the PSA observed was between 0.032 and 2.4 ng/mL, with a mean of 0.24 ng/mL. The PSA of 2.4 ng/mL was in a hemi-ablation pt. The IPSS score at 6 months after treatment was between 2 and 19, with a mean of 9. At 6 months urinary incontinence revealed 28 patients did not use any pads, 5 a security pad, 1 used 2 pads, and 2 used 3 or more pads. The IIEF score after treatment was between 5 and 25, with a mean of 9. Of the men with a IIEF score > 18, 10 maintained that level of function. Of the 36 patients, we saw complications in 7 of them. One patient with IPSS of 17 pre-HIFU had a TURP and required transurethral incision of bladder neck contracture. 7 patients did not have a pre-HIFU TURP. All went into retention, Foley was left between 7 to 15 days, 2 developed UTI, and 2 had a VNC that required incision. No Complications were observed in 29, including the 2 salvage patients and 18 who had a TURP, all with glands > 25 grams.

Conclusion: We recommend TURP in glands over 25 grams, however small glands do not ensure a complication free outcome. We believe that early ED results

UP.445, Figures 1 – 2.



will improve as we gain more experience sparing the neuro-vascular bundles.

UP-447

Predictors of Biochemical Recurrence Following Radical Prostatectomy in Men with Localised Gleason 7 Prostate Cancer

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Introduction and Objective: We sought to determine rates and predictors of biochemical recurrence following Radical Prostatectomy (RP) in men with localised Gleason 7 Prostate cancer.

Materials and Methods: We reviewed prospectively maintained clinical data from men in our region who underwent RP, between January 2008 and December 2017 (n= 2448). Those with localised Gleason 7 Prostate cancer were included (n= 1,610). Exclusion criteria were: Neoadjuvant treatment with hormone or radiation therapies (n= 55), absent post-operative PSA data (n= 65), and not reaching a post-operative PSA nadir <0.2 ng/mL (n= 47). The latter PSA value was used to define Biochemical Recurrence as the outcome of interest. Predictors of recurrence were assessed using univariate and multivariate Cox proportional hazard regression models.

Results: In total, 1443 men were included in the analysis. Mean age and PSA before the surgery were 62.5 years, and 7.9 ng/ml respectively. Biochemical recurrence occurred in 208 (14.4 %) men, with median follow-up of 3.2 years for the entire cohort. On average, the time required to reach a nadir PSA was 9 weeks. The predictors of biochemical recurrence are shown in the attached table:

Conclusion: Pathological stage and ISUP score, were the strongest predictors of biochemical recurrence, in men with localised Gleason 7 Prostate cancer, undergoing RP.

UP-448

Cycling and Men's Health – A Worldwide Survey in Association with the Global Cycling Network (GCN)

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Introduction and Objective: The number of men cycling worldwide continues to grow and includes the age group of men affected by health issues such as prostate cancer (CaP). Concerns have been raised regarding an association between cycling and these men's issues. The present abstract reports on findings of the largest worldwide cycling survey in relation to cycling and CaP.

Materials and Methods: Data collection was integrated into to a unique men's health GCN video. Information was collected on demographics, cycling frequency, risk factors and incidence for CaP, and investigation of suspected CaP. Regression modelling and Chi squared test were used to examine any correlation between cycling and CaP.

Results: The GCN video received 619,105 views and completed data was collected on 8074 cyclists. 47 of (0.58%) respondents reported a prostate cancer diagnosis with10.3% of respondents undergoing investigations for CaP. No statistical correlation was found between cycling frequency and CaP.

Conclusion: This represents the largest worldwide study to date demonstrating an extremely low rate of CaP in cyclists when compared to the general population. It also illustrates a particularly effective method of data collection.

UP-449

An Audit of PSMA PET Scan Results; Are They Changing the Management of Prostate Cancer?

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Introduction and Objective: Prostate-specific membrane antigen (PSMA) is overexpressed by most primary and secondary prostate cancers. PSMA positron emission tomography (PET) is a relatively new image modality that highlights PSMA expressive tissues to assist in the staging of prostate cancer. We audited our local results of PSMA PET scans at a single institution to assess if it is changing the management of prostate cancer.

Materials and Methods: Between May 2015 and March 2019, a total of 656 PSMA PET scans were performed at Monash Health associated facilities. With permission from our local ethics commission we conducted a retrospective audit of PSMA PET scans collecting data on the indication, serum prostate specific antigen (PSA), result, comparison to conventional staging and whether it changed patient management.

Results: Biochemical recurrence post radical prostatectomy, defined as a serum PSA greater than 0.5 ug/L, was associated with an increased probability of a positive PSMA PET scan. This association was directly proportional to the value of PSA. In many instances PSMA PET scans were able to identify PSMA positive lymphadenopathy that were negative on conventional staging. However, the clinical significance of these often small but positive nodes on PSMA PET remains unknown.

Conclusion: PSMA PET imaging is changing the management of prostate cancer at our institution however the overall clinical benefit has yet to be fully established.

UP-450

Out Bore Focal Diode Laser Ablation for Low and Intermediate Risk Prostate Cancer

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Introduction and Objective: To present a low energy technique for focal ablation of low and intermediate risk prostate cancer using diode Laser 980nm. Materials and Methods: A prospective pilot study started in April 2015.The study included 54 patients of mean age 63 years, with localized prostate cancer. The mean cancerous lesion volume in mpMRI was V=0,59 cm≥.A mpMRI, with U/S guided subsequent prostate biopsies using the transperineal fusion 3D technique was performed to all patients before treatment. All patients underwent focal thermoablation of the lesions with 980nm diode Laser using a low-intensity technique, via transperineal 3D imaging of the prostate with the aid of Biojet® Software system. Follow-up included PSA measurement every 3,6,9 and 12 months, mpMRI at 3 months, repeat fusion biopsies and a new mpMRI when there was a PSA failure.

Results: The mean follow-up was 26,42 months. The mean initial PSA was 4.92ng/ml. Mean PSA reduction after treatment was 2,916ng/ml and 2.087ng/ml at 12 and 24 months, respectively. This represented a -38% and -31,6% change, respectively (p=0.007).7 patients (12,9%) had positive repeat biopsies at 3 months at the same site, while 2 more were diagnosed with new cancerous lesions on second biopsy. Those that had a positive repeat biopsy underwent a second session of laser ablation. Three patients were eventually treated with radical prostatectomy at 6 months. Overall, at 24 months, local control of the disease was achieved in 46 patients (85,1%). During follow-up, no major complications were recorded.

Conclusion: Although more prospective studies with longer follow-up are needed, local thermoablation with low energy diode laser appears to be an equally effective, safer and less expensive modality for low to intermediate risk localized prostate cancer. It could replace active surveillance strategies for patients that do not wish or are not eligible for major surgery or radiotherapy.

UP.447, Table 1. Predictors of Biochemical Recurrence following Radical Prostatectomy for Localised Gleason 7 Prostate cancer

Predictor	Reference	Hazard ratio - Univariate (p)	Hazard ratio - Multivariate (p)
Age > 60 years	<= 60 years	1.48 (0.009)	1.14 (0.405)
Pre-surgery PSA > 10 ng/ml	PSA <= 10 ng/ml	1.84 (0.001)	1.39 (0.028)
ISUP 3	ISUP 2	2.53 (0.001)	2.15 (0.001)
Focal positive margin	Negative margin	1.65 (0.046)	1.17 (0.546)
Positive margin	Negative margin	2.28 (0.001)	1.63 (0.002)
T3 Pathological stage	T2	3.49 (0.001)	2.61 (0.001)

UP-451

Predicting Out Bore Prostate Cancer Focal Laser Ablation Failure and Biochemical Relapse Using the Correlation with the Surrounding Tissue Temperature Parameters During Treatment

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Introduction and Objective: To predict method failure of low and intermediate prostate cancer focal laser ablation using temperature measurements of the cancer surrounding areas as an index for successful treatment. Materials and Methods: The study included 54 patients. We prospectively monitored 86 out bore prostate cancer focal laser areas ablation and the surrounding tissues with four K-type house made thermocouples placed 1 cm long apart circumferentially of the treated area. The mean area volume was 0.59 cm^3 (0.50 - 1.8 cm^3). All areas were treated with 980 nm diode laser end fire fiber with a modified low energy setting (5 watts for 75s). 45° C was set as the lowest efficient cut-off temperature while 60°C was set as the upper temperature treatment limit. All the 4 max measurements values were recorded during area treatment.

Results: We calculated with *in vivo* and ex vivo studies that an elliptical necrotic tissue area of a 0.5 mm of diameter is formed with the above applied energy settings (5w x 75 s). Positive biopsies were found in 7 patients out of 54 (12.9%) which corresponds to 13 treated areas out of 86 (15.11%) at 3 months follow up. 5 of those patients had a pretreatment Gleason score of 7 (3+4) while the remained 2 had a GS of 6 (3+3). The latter two had larger cancerous areas than the previous five ones. In all of the recurred areas the mean temperature value recorded was 47°C(45°C-50°C).As regard to the successfully treated cancerous areas (n= 73,84,89%) the mean temperature value recorded was 54°C (52°C-60°C) and the GS was 6 (3+3) for the 50 of them and 7 (3+4) in the remaining 23.

Conclusion: Low diode laser energy settings is safe and at the same time equally effective for the majority of patients treated but temperatures under 50°C seems to be inadequate especially when treating intermediate ISUP 2 localised prostate cancers. Further correlations need to be done in order to precisely identify the parameters who play a crucial role in treatment failure.

UP-452

De Ritis Ratio (AST/ALT) a Significant Prognostic Factor in Patients with Localized Prostate Cancer Following Robot-Assisted Laparoscopic Radical Prostatectomy

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Introduction and Objective: De Ritis proposed the ratio of aspartate transaminase (AST) to alanine transaminase (ALT) as a characteristic to determine acute viral hepatitis in the 1950s. Interestingly, recent studies have shown that the De Ritis ratio can also reflect tumor aggressiveness and predict worse pathological outcomes for many types of cancer, including urological malignancy. We investigated the significance of the De Ritis ratio for predicting pathological outcomes and prognosis in patients with localized prostate cancer who underwent a robot-assisted laparoscopic radical prostatectomy (RALP) procedure.

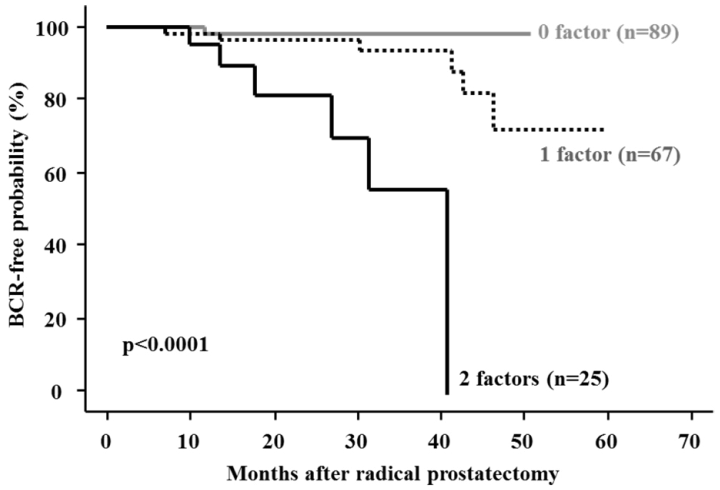
Materials and Methods: Clinicopathological data for 181 patients with localized prostate cancer who underwent surgery between October 2013 and May 2017 were retrospectively evaluated. Blood samples were collected 1-14 days before RALP and examined, including AST and ALT measurements. Based on previous studies, elevated AST and ALT values were defined as greater than 40 and 56 IU/L, respectively.

Results: The median De Ritis ratio was 1.250 (0.614-3.750), and all patients were classified into 2 groups based on the previously reported cutoff value of 1.325. An elevated De Ritis ratio was significantly related to higher pathological stage (p=0.0302) and Gleason score (p=0.0303), as well as high biochemical recurrence (BCR) after RALP (p=0.0072). In addition, multivariate backward stepwise Cox regression analysis revealed that De Ritis ratio and Gleason score were independent predictors for BCR. Further stratification with Gleason score in addition to De Ritis ratio identified a stepwise reduction of BCR-free probability.

Conclusion: This is the first report to show that the De Ritis ratio can be used to predict prognosis of localized prostate cancer patients after undergoing RALP.

UP.452, Figure 1. A predictive model for biochemical recurrence which incorporates De Ritis ratio and Gleason score

Further stratification with the Gleason score in addition to De Ritis ratio identified a stepwise reduction in biochemical recurrence (BCR)-free probability, in which the highest BCR-free probability was found in prostate cancer cases both low Gleason score (≤7) and with a De Ritis ratio of less than 1.325 (0 factor), while the lowest was in prostate cases shown to be high Gleason score (≥8) and having a De Ritis ratio of greater 1.335 (2 factors).



UP-453

Impact of Skeletal Muscle Index on Longitudinal Erectile Functional Outcomes after Nerve-Sparing Robot Assisted Radical Prostatectomy

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Introduction and Objective: Little is known about the impact of skeletal muscle index (SMI) on longitudinal erectile functional outcomes after nerve-sparing (NS) robot assisted radicle prostatectomy (RARP). Our aim was to determine this impact using patient-reported validated questionnaires.

Material and methods: Total 762 patients were performed RARP in our institution. Of those, 131 patients underwent NS RARP. To assess erectile functional outcomes, we used International Index of Erectile Function (IIEF-5) before and 1, 3, 6, 12 months after surgery. Skeletal muscle at the level of L3 was measured automatically using volume analyzer software and normalized for height (cm^2/m^2) to calculate SMI. We excluded the patients who had not taken a computed tomography (CT) before surgery, those who were not able to evaluate IIEF-5, whose IIEF-5 before surgery was extremely low (IIEF5 < 4) and those with follow-up less than 1 year. We defined the patients who had low IIEF-5 less than 4 as erectile dysfunction (ED) groups and more than 5 as non-ED group.

Results: Forty-two patients were included in this retrospective study. The median age was 63 years-old and body mass index was 24.7 kg/m^2 and preoperative IIEF-5 was 15. There were no significant differences between two groups in preoperative IIEF-5. In ED group, the SMI was significantly lower than non-ED group (48.1 vs 55.5, p= 0.0018). In simple and multiple linear regression analysis revealed that SMI was the independent associating factor of ED after RARP with NS group (OR= 1.16, p= 0.032).

Conclusion: The patients with low SMI would have worse erectile functional outcomes after NS RARP. SMI might be a predictive factor of postoperative ED.

UP-454

Validation of the Prostate Imaging and Reporting Data System Version 2 (PI-RADS V2) for the Detection of Prostate Cancer in Japanese Men with Elevated PSA Levels

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Introduction and Objective: Clinical efforts to verify its accuracy for risk stratification of prostate cancer (PCa) in Japanese men, who have differences in age of onset, biological aggressiveness, and tumor size in PCa than men in Western countries, have recently started. Therefore, the aim of the study was to evaluate the cancer detection rate of PI-RADS v2 in Japanese men with elevated PSA levels using MRI-US fusion-guided biopsy.

Materials and Methods: This study included 63 men with primary or prior negative biopsies with elevated PSA levels (median age, 70 years; median PSA, 6.87 ng/mL) who underwent MRI-ultrasound fusion-targeted biopsy (Trinity®; Koelis, France) after 3T multiparametric prostate MRI examination (mpMRI). Single radiologist (TT) evaluated mpMRI using PI-RADS v2 by consensus. Targeted biopsy was performed for lesions with PI-RADS categories of 2 to 5. After targeted biopsy, concurrent standard systematic 12-core systematic prostate biopsy was performed in all patients. All lesions were rated according to PI-RADS v2 and lesions with PI-RADS v2 category 2 or greater were biopsied. Gleason 3 + 4 or greater was defined as clinically significant PCa.

Results: A total of 100 lesions with a mean of 1.6 suspicious lesions per patient were detected by mpMRI were classified as PI-RADS category 2 in 15 lesions, category 3 in 32 lesions, category 4 in 43 lesions, and category 5 in 10 lesions. A median of 2.9 target biopsy cores per suspicious lesion were taken.The overall cancer detection rate of PI-RADS v2 categories 2, 3, 4 and 5 was 7%, 28%, 65% and 100% for all PCa, and 0%, 13%, 49% and 80% for all clinically significant PCa, respectively. The PI-RADSv2 categories were significantly associated with the presence of PCa and clinically significant PCa (each p <0.05). Negative or clinically insignificant PCa in the target biopsy but clinically significant PCa in the systemic biopsy was observed in 8 of 33 cases (24%).

Conclusion: PI-RADS v2 is significantly associated with the presence of clinically significant PCa in Japanese men with elevated PSA levels. However, when performing targeted biopsy, the combination with systematic biopsy still provides the highest detection of clinically significant PCa.

UP-455

Adult Male Anogenital Distance - Comparability and Reproducibility of Two Different Methods

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Introduction and Objective: The distance from the genitals to the anus, anogenital distance, reflects androgen concentration during prenatal development in mammals. The use of anogenital distance in human studies is still very limited and the quality and consistency of measurements is an important methodological issue. The aim of this study was to assess the feasibility and reproducibility of adult male anogenital distance measurements by two different methods.

Materials and Methods: All men were attending an outpatient clinic at a university hospital and underwent an andrological examination and completed a brief questionnaire. Two variants of anogenital distance [from the anus to the posterior base of the scrotum (AGD_{AS}) and to the cephalad insertion of the penis (AGD_{AP})] by two methods (lithotomy or frog-legged position) were assessed in 70 men. Within and between coefficient of variations, intra-class correlation coefficients, two-way repeated-measures analysis of variance, and scatter and Bland–Altman plots were calculated.

Results: The two methods produced similar values for AGD_{AP} but different estimates for AGD_{AS}. Nonetheless, the overall agreement (ICC 0.80) was acceptable for both measures.

Conclusion: Therefore, both methods are internally consistent and adequate for epidemiological studies and may be used depending on the available medical resources, clinical setting, and populations.

UP-456

Association Between Prostate Cancer and Anogenital Distance, a Biomarker of Prenatal Androgen Milieu

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Introduction and Objective: The distance from the genitals to the anus, anogenital distance, reflects androgen concentration during prenatal development in mammals. To evaluate the association between anogenital distance (AGD), as a biomarker of prenatal androgen milieu, and risk of prostate cancer (PCa).

Materials and Methods: A case-control study was conducted on 260 men attending a university hospital where underwent a physical and andrological examination and completed a brief questionnaire. PCa patients were confirmed by biopsy of the tumor. Controls were men without PCa attending the urology outpatient clinic for routine examinations. Two variants of AGD [from the anus to the posterior base of the scrotum (AGD_{AS}) and to the cephalad insertion of the penis (AGD_{AP})] were measured. Unconditional multiple logistic regression was used to estimate the association between AGD measurements and presence of PCa, and Odds Ratios and 95% confidence intervals (CI) were calculated.

Results: Cases showed significantly shorter AGD_{AP} and AGD_{AS} than controls. Subjects with AGD_{AP} and AGD_{AS} in the lowest compared to the upper tertile were 2.6-times (95% CI 1.2-5.6) and 3.2-times (95% CI 1.5-6.9) more likely to have PCa, respectively.

Conclusion: We found that shorter measurements of both distances (AGD_{AS} and AGD_{AP}) were associated with higher risk of PCa. A previous study reported similar results, showing that longer AGD_{AP} was associated with lower risk of PCa, but this relationship was not found for AGD_{AS}, as it was in our study with a larger sample size.

UP-457

Accuracy of Anogenital Distance as a Prostate Cancer Diagnosis Tool

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Introduction and Objective: The distance from the genitals to the anus [anogenital distance (AGD)] reflects androgen concentration during prenatal development in mammals. There is only one study suggesting the relationship between AGD and risk of prostate cancer (CaP). The goal of this study was to assess the performance and clinical utility of AGD, as a biomarker of prenatal androgen milieu, and risk of CaP in a larger population, in CaP diagnosis.

Materials and Methods: A case-control study was conducted on 260 men attending a hospital outpatient clinic where underwent a physical and andrological examination and completed a brief questionnaire. CaP patients were confirmed by biopsy of the tumor. Controls were men without CaP attending the urology outpatient clinic for routine examinations. Two variants of AGD [from the anus to the posterior base of the scrotum (AGD_{AS}) and to the cephalad insertion of the penis (AGD_{AP})] were measured. Parametric and non-parametric tests andreceiver operating characteristic (COR) analyses were used to determine relationships between AGD and presence of CaP.

Results: The highest area under curve (0.69; 95% CI 0.60 to 0.78 and 0.69; 95% CI 0.61 to 0.77) was obtained for the Gleason= 7 subgroup with the AGD_{AS} and AGD_{AP} measurement, with a sensitivity and specificity of 83% and 55%, and 91% and 41%, the predictive positive value of 39% and 35% and negative value of 90% and 93% respectively.

Conclusion: AGD may be a useful clinical tool for the CaP diagnosis.

UP-458

Cognitive-Registration Biopsy Targeting for Prostate Cancer has a Steep Learning Curve: Experience from a Large Public Tertiary Teaching Hospital

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Introduction and Objective: Multiparametric magnetic resonance imaging (mpMRI) facilitates targeting of regions of interest and improves the detection and accuracy of clinically significant prostate cancer. There is emerging data to support the use of expensive fusion devices to assist in biopsy targeting, however, due to limited resources our tertiary referral centre utilizes a cognitive registration method to target regions of interest. The purpose of this study was to investigate the presence of any significant learning curve in patients who undergo cognitive-registration targeted biopsy.

Materials and Methods: A retrospective observational cohort study was performed of consecutive patients attending a large public tertiary training centre. We

describe data of patients referred for clinical suspicion of prostate cancer who underwent mpMRI and biopsy. Standard clinical, histopathological, mpMRI-related and financial parameters were collected. Diagnostic accuracy of operator (consultant, resident/registrar) and biopsy approach was analysed on a year-to-year basis. Fisher's was used for comparing binary variables and Mann-Whitney was used for continuous variables.

Results: A total of 653 men underwent mpMRI, 344 of whom proceeded to subsequent prostate biopsy. Analysis of outcomes over three years demonstrated diagnostic accuracy for each PIRADS score similar to that reported by other studies. This was maintained across the study period, suggesting a steep learning curve.

Conclusion: In our large public tertiary teaching hospital, introduction of a mpMRI-based triage pathway has been shown to be effective and adapted quickly within the first year of implementation.

UP-459

The Introduction of a Multiparametric Magnetic Resonance Imaging-Based Triage Pathway in a Public Teaching Hospital Improved Prostate Cancer Detection and Reduced Biopsies

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Introduction and Objective: Multiparametric magnetic resonance imaging (mpMRI) improves detection of clinically significant prostate cancer (csPCa) by reducing negative biopsies and facilitating targeted biopsy (fusion technology, cognitive-registration or in-gantry MRI guidance). The purpose of this study was to evaluate the feasibility of implementing a mpMRI-based triage pathway, including cost analysis, diagnostic performance and applicability to training.

Materials and Methods: A retrospective observational cohort study was performed of consecutive patients attending a large public tertiary training hospital who were referred for clinical suspicion of prostate cancer (PCa) and underwent mpMRI and biopsy. Standard clinical, histopathological, mpMRI-related and financial parameters were collected for analysis of diagnostic accuracy, biopsy avoidance and logistical (including financial) and operator (consultant/registrar/resident) feasibility.

Results: A total of 653 men underwent mpMRI, of which 344 proceeded to prostate biopsy producing a biopsy avoidance rate of 47%. 240 men were diagnosed with PCa of which 208 (60.5%) were clinically significant (Gleason 3+4). Higher PIRADS scores on mpMRI observed higher rates of csPCa. In patients who underwent both targeted and systematic biopsy, targeted cores detected csPCa in 16.6% and 12.7% more men than systematic cores for PIRADS 4 and 5 respectively; whereas systematic cores detected csPCA in 3.2% and 5% of patients where targeted cores did not. The approach was cost effective and demonstrated a high level of performance which was maintained over the study period.

Conclusion: Implementation of a mpMRI-based triage pathway into a large public teaching hospital is cost-effective, feasible and leads to high rates of csPCa diagnosis, whilst reducing detection of insignificant PCa and unnecessary biopsies. Implementation of a mpMRI-based triage pathway into a large public teaching hospital is cost-effective, feasible and leads to high rates of csPCa diagnosis, whilst reducing detection of insignificant PCa and unnecessary biopsies.

UP-460

The Introduction of a MPMRI-Based Triage Pathway into a Large Public Tertiary Training Hospital is Cost Effective

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Introduction and Objective: Multiparametric magnetic resonance imaging (mpMRI) has been shown to improve detection of clinically significant prostate cancer (csPCa), facilitate biopsy targeting, and reduce rates of unnecessary biopsy. A mpMRI-based triage pathway was introduced for men referred for suspicion of prostate cancer at our large public tertiary referral centre. The purpose of this study was to perform a cost analysis of implementing this pathway.

Materials and Methods: A retrospective observational cohort study was performed of consecutive patients attending a large public tertiary training hospital who underwent mpMRI for suspicion of prostate cancer. Financial parameters for imaging, pathology and other costs incurred were collected for analysis. Biopsy avoidance was defined as the rate of patients who avoided prostate biopsy where, in the absence of mpMRI, would have otherwise undergone biopsy.

Results: A total of 653 patients underwent mpMRI with 344 proceeding to subsequent prostate biopsy, resulting in a 47% biopsy avoidance rate. Across the study period, our mpMRI-triage pathway, including biopsy, (approximately AUD$450 per mpMRI scan and $3,000) per biopsy) produced an expenditure of $1,325,850 ($293,850 for mpMRI and $1,032,000 for biopsy). If all patients referred with an elevated PSA underwent biopsy, the total expenditure is approximately $1,959,000, resulting in a cost saving of $633,150.

Conclusion: The implementation of a mpMRI-based triage pathway into a large public tertiary teaching hospital is cost effective and leads to increased rates of clinically significant cancer diagnosis, whilst reducing biopsy-related morbidity.

UP-461

Primum Non Nocere: A Prostate Cancer Diagnostic Pathway Using mpMRI Without Gadolinium Contrast Enhanced Imaging Can Safely Reduce Need for Biopsy and Increase Diagnostic Yield

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Introduction and Objective: The PROMIS and PRECISION trials have shown that multi parametric (mp) MRI including gadolinium dynamic contrast enhancement (DCE), used to risk assess cases of suspected prostate cancer (PCa), reduces biopsies and overdiagnosis of insignificant disease. In our cancer centre, contrast is not used, avoiding its' risks and improving throughput. We test a new diagnostic pathway whereby patients with MRI Prostate Imaging Reporting And Data System V2 (PIRADS) score 2 or PSA density (PSAd) 1.0 avoid biopsy. Materials and

Methods: Patients referred to one UK Cancer Centre with suspected PCa over 12 months from 2017-2018 (n= 383) underwent biparametric (bp) MRI. Of these, 263 (69 %) were biopsied, with 150 clinically significant cancers (CS-PCa, defined by standards of reporting for MRI-targeted biopsy studies (START) criteria, as maximum cancer core length (MCCL) 5 mm for Gleason 6, or any MCCL for Gleason 7 disease) detected: a 57 % pickup rate. Imaging, PSAd and biopsy were colated and a confusion matrix calculated.

Results: Twenty-two men with PIRADS 1 were biopsied, with detection of 1 CS-PCa: PSAd, in this case was 0.26. Twenty-one with PIRADS 2 lesions were biopsied, 1 CS-PCa detected: PSAd was 0.28. Seventy-four PIRADS 3 were biopsied, 22 CS-PCa detected: PSAd (mean, SD) was 0.2 (± 0.07). Fifty-six with PIRADS 4 were biopsied, 43 CS-PCa detected: PSAd 0.27 (± 0.16). Ninety PIRADS 5 were biopsied, 83 CS-PCa detected: PSAd 0.55 (± 0.63). Among the 263 biopsied patients, a pathway offering biopsy if PIRADS is 3 or PSAd 0.1 spares 11 (4.2 %) biopsies compared to baseline practice, with sensitivity 100 %, specificity 9.7 %, positive predictive value 59.5 % and negative predictive value 100 % for biopsy detected CS-PCa. Diagnostic yield is 59.5 %.

Conclusion: Biparametric MRI can be used to risk assess suspected PCa, reducing need for biopsy, and increasing diagnostic yield from 57 % to 59.5 %. Given the risks of gadolinium and pragmatic benefits of increasing scanner throughput, we recommend this as an alternative to full mpMRI.

UP-462

The Feasibility and Safety of Focal Treatment of Localized Prostate Cancer Using MRI-Guided Transurethral Ultrasound Ablation

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Introduction and Objective: We review the feasibility and safety of focal treatment of localized prostate cancer using MRI-guided and controlled transurethral ultrasound ablation (TULSA).

Materials and Methods: From March 2017, a total of 117 patients with localized prostate cancer of Gleason grades 3+3, 3+4, and 4+3, confirmed by multiparametric MRI (mpMRI) and MRI guided biopsies, underwent focal therapy with TULSA. The concept of TULSA, similar to HIFU, is based on secondary ablation of tissue, which is thermally coagulated by the application of therapeutic ultrasound. In contrast to HIFU, in TULSA the ultrasound applicator is placed transurethrally. Treatment planning and monitoring is achieved by real-time MRI and MRI based closed-loop thermal feedback control. This provides precise ablation of desired treatment zones while adjacent

structures, e.g. sphincter and neurovascular bundles, are spared avoiding thermal damage. Immediately after TULSA, treatment effects are confirmed by contrast-medium enhanced MRI. Treatment was done in general anesthesia in the MRI. A suprapubic catheter was placed. Patients were hospitalized for one night. A database was kept prospectively for all patients. All patients had mpMRI and PSA before treatment, and at 3- and 12-months follow-up. Complications and functional results were achieved by interviews, IPSS and IIEF questionnaires. To date, 38 patients completed 1-year follow-up.

Results: All procedures were completed, no complications occurred intraoperatively. In the early postoperative phase, n=5 pts had symptomatic UTIs, n=2 unilateral epididymitis, which resolved with antibiotic therapy. All patients achieved spontaneous voiding within 2 weeks, no secondary retention occurred after catheter removal. No incontinence or de-novo erectile dysfunction was reported. All patients maintained ejaculatory function, n=9 reported a decrease of ejaculate volume. PSA decreased from 8.61 ng/ml preoperatively to 2.01 at 3 months and 1.99 ng/ml at 12 months. At 12 months, in all patients no residual necrotic tissue and no residual cancer lesions were detected in mpMRI.

Conclusion: Focal treatment of low and intermediate risk prostate cancer using MRI-guided and monitored transurethral thermal ultrasound ablation is feasible and safe. There is a fair chance to maintain continence, erectile function, and ejaculatory function. Short term oncological control was achieved. Longer follow-up in a larger number of patients and randomized controlled studies are required to evaluate oncological control.

UP-463

Tumor Control Outcomes of Salvage Cryotherapy for Radiorecurrent Prostate Cancer at Median 12 Years Follow-up

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Introduction and Objective: Local prostate cancer recurrences after primary radiotherapy can occur. Salvage therapies can defer the use of subsequent systemic therapies, which tend to be non-curative with significant side-effects. The results of a large single-centre cohort of salvage cryotherapy (sCryo) patients is presented here with median 12 years follow-up.

Materials and Methods: Patients treated with salvage cryotherapy from 1995 to 2004 were included. Patients had histological confirmation of local recurrence with a transrectal ultrasound guided biopsy. Metastatic screen with CT and radionucleotide bone scan were negative. Pre-salvage data was collected to predict oncological outcomes. Kaplan-Meier analysis was performed to assess overall survival (OS), prostate cancer specific survival (PCSS), metastases free survival (MFS), development of castrate resistant prostate cancer (CRPC) and biochemical diseas- free survival (BDFS) according to the Phoenix definition. Cox-regression was used to assess predictive factors for OS, PCSS, CRPC and MFS.

Results: A total of 187 patients with completed data were treated with sCryo. Median follow-up was 149 months. Median age before salvage was 71 years (interquartile range [IQR] 66-74), median PSA pre-salvage 11 ng/mL (IQR 7.8-18.7). Twelve-year OS was 56% (CI 49-64). Pre-salvage age and PSA nadir post-salvage predicted overall mortality. Twelve-year PCSS was 81% (CI 75-88). Pre-radiation Gleason score 8-10 and stage (T3a – T4), pre-salvage PSA and PSA-nadir post-salvage cryotherapy predicted PCSS in multivariable analysis. Twelve-year freedom from CRPC was 80%, (CI – 73-87). Multivariable analysis showed primary stage and PSA-nadir post-salvage treatment to be significant predictors of CRPC. Twelve-year MFS was 78% (CI 71-85). T3a-T4 and PSA-nadir post-salvage cryotherapy predicted metastases in multivariable analysis. Median time to biochemical recurrence was 58 months (CI 44 – 79); with median time to ADT 101 months (CI – 65 – NA). Ninety-one patients (48.7%) were ADT free at end of follow up.

Conclusion: Salvage cryotherapy for localized radiorecurrent prostate cancer can provide durable response, with PCSS and MFS of approximately 80% at 12 years. OS, PCSS, CRPC and MFS are affected by a combination of primary T-stage, pre-radiation Gleason score, pre-salvage PSA and PSA-nadir post-salvage. Salvage treatment can achieve ADT free status in selected patients and delay in those who subsequently developed systemic disease.

UP-464

Pathological Significance of Large Tumor Suppressor-2 Expression in Prostate Cancer

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Introduction and Objective: Hippo pathway plays important roles for tumour growth and progression in various cancers. Yes Associated Protein (YAP) is most well-known in Hippo pathway and reported to stimulate cell proliferator, invasion and metastasis in cancers including prostate cancer. Large Tumor Suppressor (LATS)-1/2 are most important inhibitors of YAP activation, but pathological significance of LATS-2 in prostate cancer is not fully understood.

Materials and Methods: We analyzed 2 prostate cancer cell lines (LNCaP and PC3) and 63 prostate cancer tissues without neo-adjuvant therapy. In addition, 25 specimens of castration-resistant prostate cancer (CRPC) were also examined. In cell lines, changes of cell survival and migration by knock-down (KD) of LATS-2 expression were evaluated. In human tissues, LATS-2 expressions and proliferation index were evaluated by immunohistochemical technique.

Results: In LNCaP cell, KD of LATS-2 expression lead to increasing of cell proliferation and migration. However, in PC3 cell, LATS-2 was negatively associated with cell migration, but not with cell proliferation. In RP tissues, 34 patients (54.0%) were judged as positive staining of LATS-2, and its ration is lower than those in non-tumoral tissues (53/60= 88.3%). In addition, positively stained ratio of LATS-2 in pT3 patients (7/27= 25.9%) was significantly lower (P <0.001) than that in pT2 patients (27/36= 75.0%). Similarly, LATS-2 expression was negatively associated with Gleason score (P= 0.014). Proliferation index in LATS-2-positive tissues (mean= 6.4/ SD= 3.9%) was significantly lower (P= 0.001) than that in negative ones (10.7/5.6%). In CRPC, 4 of 25 tissues (16.0%) was judge as positive for LATS-2 expression, and its ratio was significantly lower than RP tissues (P <0.001).

Conclusion: Our results showed that LATS-2 plays as tumour suppressor in prostate cancer cells; however, its anti-cancer activities were dependent of androgen-dependency. In short, although its expression was negatively associated with cell proliferation and migration in androgen-dependent prostate cancer cells, whereas it was done with cell migration only in androgen-independent cells. In addition, LATS-2 expression is decreased according to loss of androgen-dependency. The finding on cell proliferation was confirmed in human cancer tissues. We suggest that LATS-2 may potential therapeutic target for patients with prostate cancer, especially in CRPC.

UP-465

Impact of Alternative Antiandrogen Therapy for Japanese Prostate Cancer Patients in the Era of New Hormonal Therapy

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Introduction and Objective: After introducing new hormone therapy, such as abiraterone acetate and enzalutamide, alternative antiandrogen (AA) therapy has gone out of use worldwide. In Japan, new hormone therapies were introduced in 2014. According to Japanese Clinical Practice Guidelines in 2012, AA therapy was recommended grade B, but was not documented in 2016 Guidelines as well world trend. However, the sensitivity of the hormone therapy is high in Japanese compared to Caucasians, and AA therapy is thought to be still useful in the era of new hormonal therapy. In this study, we evaluated the prognostic significance of AA therapy, in addition the relation of prostate-specific antigen (PSA) response with AA therapy and new hormone therapy.

Materials and Methods: Between 2001 and 2015, 141 patients with advanced prostate cancer (PC) who underwent AA therapy with flutamide following the failure of initial maximum androgen blockade (MAB) using bicalutamide in Osaka Rosai Hospital were retrospectively reviewed. Data collected on each patient included age, clinical T (cT) stage, biopsy Gleason Score, values of serum initial PSA (iPSA), lactate dehydrogenase (LDH) and alkaline phosphatase (ALP), hemoglobin (Hb) concentrations, duration of MAB therapy, PSA response for AA therapy, using or not for new hormone therapy and follow-up data. Prognostic outcomes and these 10 factors were analyzed. The significant prognostic values were determined by Kaplan–Meier method and COX's proportional hazard model.

Results: Median (range) follow-up duration was 57 (7-191) months, and 5-year overall survival (OS) estimates were 64.7%, respectively. Following intro-

duction of AA therapy, the number of patients who achieve PSA decline more than 50%, less than 50% and PSA remaining elevation was 43, 37 and 61. These responders had significantly better OS than non-responders (p= 0.0011). This study was including 50 patients received new hormone therapy, and PSA decline was detected in 41 patients (82%). These new hormone users had significantly better OS than non-users (p <0.001). Multivariate analysis revealed that age, LDH level, more than 24 months duration of response to MAB therapy, responder for AA therapy and use of new hormone therapy were independent risk factors for OS (p <0.05). Furthermore, PSA decline for new hormone therapy was significantly more detected (p= 0.0225) in responders (22/28, 92.86%) for AA therapy than non-responders (15/22, 68.18%).

Conclusion: AA therapy was effective for 56.7% patients and independent predictor of OS. Furthermore, cross resistance between AA therapy and new hormone therapy was not detected, to the contrary responders to AA therapy have still hormonally sensitivity and can be expected the effect for new hormone therapy compared to non-responders. These findings suggested AA therapy is thought to be of therapeutic value for Japanese advanced prostate cancer patients in the era of new hormonal therapy.

UP-466

Can Exercise Training Ameliorate the Adverse Cardiometabolic Side Effects of ADT in Newly Diagnosed Prostate Cancer Patients?

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Introduction and Objective: To investigate the effects of an exercise programme on cardiometabolic health in newly diagnosed prostate cancer patients receiving androgen deprivation therapy (ADT).

Materials and Methods: Fifty recently diagnosed prostate cancer patients (age: 72.0 ± 4.8 years; body mass index [BMI]: 28.0 ± 3.3 kg/m2) to be treated with ADT were randomised to a standard care control group (n = 26) or standard care plus exercise group (n = 24). The exercise group completed 12-weeks of supervised aerobic and resistance training (twice weekly for 60 min). Outcomes of cardiopulmonary exercise testing, anthropometry, blood-borne biomarkers and health-related quality of life were assessed at baseline, post-intervention and after a 24-week follow-up period. Between-group differences at post-intervention and follow-up endpoints were analysed by ANCOVA using baseline values as covariates.

Results: After 12 weeks, peak oxygen uptake (1.9 [0.3 to 3.3] mL.kg-1.min-1, p = 0.019), anaerobic threshold (1.6 [0.6 to 2.7] mL.kg-1.min-1, p = 0.003) and oxygen uptake efficiency slope (0.24, [0.10 to 0.38], p = 0.001) were higher in the exercise group versus controls. At the 24 week follow-up, the exercise group had an improved body mass (-3.1 [-5.1 to -1.2] kg, p = 0.002), fat mass (-7.9 [-11.8 to -3.9] kg, p < 0.001), fat-free mass (4.5 [0.6 to 8.4] kg, p = 0.026), ventilatory equivalent for CO2 (-1.8 [-3.4 to -0.2] mL.kg-1.min-1, p = 0.029), sex hormone-binding globulin (8.3 [1.3 to 15.3] nmol/L, p = 0.022) and Godin leisure-time exercise (10.8 [2.6 to 19.0], p = 0.011) versus controls.

Conclusion: Exercise training improved body composition and ameliorated the adverse effects that ADT on cardiopulmonary fitness. Exercise also increased sex-hormone-binding globulin, which could provide therapeutic benefit to prostate cancer patients by lowering androgen bioavailability.

UP-467

Risk Stratifying Patients to a Transperineal Approach Reduces Sepsis Rates Post-Prostrate Biopsy

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Introduction and Objective: Transrectal prostate biopsies are associated with a risk of sepsis. Ciprofloxacin and/or Gentamicin are usually used for prophylaxis, however resistance to these antibiotics is common. We performed rectal-swabs and aimed to reduce the rate of sepsis by identifying patients with positive rectal-swabs and using targeted antibiotics following TRUS or by replacing TRUS with TP biopsy.

Materials and Methods: A total of 1232 patients were included in our study. Group A (609 patients) received an empirical prophylactic antimicrobial regimen of gentamicin, metronidazole, and ciprofloxacin from January 2014 - September 2015. Group B (403 patients) had rectal swab cultures performed prior to biopsy from February 2016 - September 2017. Patients with organisms resistant to ciprofloxacin or gentamicin received a targeted prophylaxis regimen of fosfomycin, amikacin, and metronidazole. Group C (220 patients) from June 2018 – March 2019 underwent either TRUS (113 patients, no antibiotic resistant organisms on rectal swab) or TP biopsies (107 patients). 13 patients with resistant organisms on rectal swab were re-assigned to TP biopsy and received a single dose of oral co-amoxiclav.

Results: There was a total of 21 cases of sepsis; 12 (2%) in Group A, 9 (2.2%) in B and none in C. There was no significant overall difference in the rate of sepsis between Group A and B (p = 0.82). Patients in Group B with ciprofloxacin-resistant rectal flora had a significantly higher rate of sepsis than those without (9.1% vs 1.1%; p =0.003). Sepsis rates were reduced in Group C (0%) versus A (p = 0.04) and B (p = 0.03). Ciprofloxacin resistant organisms were identified in 70 patients; 56 in Group B (13.8%) and 14 (6.4%) in Group C. There was a reduction in sepsis rates in cases of ciprofloxacin resistance between Group B and C which did not reach statistical significance (9% vs 0%) (p = 0.58).

Conclusion: Risk-stratifying patients undergoing prostate biopsy to a TP approach, in cases of antibiotic resistant rectal flora, reduces sepsis incidence and has helped eliminate sepsis risk in our cohort. Further data is required to specifically demonstrate this benefit in cases of ciprofloxacin resistance.

UP-468

Adjuvant vs. Salvage Radiation Therapy After Radical Prostatectomy: Decipher May Decipher the Hidden Secrets in the Era of Personalized Medicine

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Introduction and Objective: Prostate Cancer (PCa) is the most prevalent cancer in men. Currently, one of the main treatments for PCa is radical prostatectomy (RP), which may be followed by adjuvant radiotherapy. An alternative procedure is to wait and perform salvage radiotherapy if necessary. The adjuvant vs salvage radiotherapy debate has encouraged researchers to put effort in finding markers that assist us in making the best choice. Decipher is a novel genomic classifier, developed to prognose PCa in patients. The test is based on gene-expression microarray analysis of 22 RNA biomarkers and produces scores ranging between 0 and 1. Results are then classified into low-risk, intermediate-risk, and high-risk groups (for scores <0.45, between 0.45 and 0.6, and >0.6, respectively).

Materials and Methods: In this review we studied all pubmed-indexed articles focusing on the use of decipher after RP and summarized findings.

Results: Almost all studies have confirmed Decipher as a reliable predictor of metastasis, recurrence and mortality, although one study showed contradicting results. Studies showed that likelihood of metastasis after RP could be as low as 5.5% in patients with low risk disease based on Decipher score and as high as 26.7% in patients with high risk Decipher score. In addition, 10-year recurrence rate of 2.6% and 13.6% was noted for low and high risk patients, respectively. Decipher was also capable of predicting cancer specific mortality after RP (5-year PCa specific mortality rate of 0% for low risk patients compared to 9.4% for high risk Decipher group). Decipher was able to reduce decisional conflicts in clinical recommendations and demonstrated an incremental cost-effectiveness ratio of $90,833 per QALY, which can be indicated as cost-effective.

Conclusion: While proposing radiotherapy is aimed for PCa relapse prevention, short- and long-term side effects must be taken into account. Although Decipher has shown to be capable of predicting disease recurrence, metastasis and mortality in multiple studies, further investigations are required to prove Decipher's role in clinical outcome improvement in patients receiving Decipher-based course of treatment compared with those receiving usual care.

UP-469

Peritoneal Metastasis Following Minimally Invasive Robotic Assisted Radical Prostatectomy

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Introduction and Objective: Peritoneal metastasis is exceedingly rare in prostate cancer. The majority of peritoneal metastasis is a result of disseminated metastatic disease, rather than following curative surgical intervention for localized disease. Here, we report a case series of peritoneal metastasis following radical prostatectomy using minimally invasive robotic assisted technique.

Materials and Methods: We identified three patients who presented with peritoneal metastasis following radical treatment of prostate cancer. A retrospective analysis was performed to identify patient demographics, presentation and management, as well as literature review.

Results: All three patients underwent radical prostatectomy via laparoscopic robotic-assisted technique. Time to diagnosis of peritoneal disease was 3 months, 6 months and 8 years. No cases had evidence of other distant metastatic disease. Two patients were found to have extensive peritoneal disease which presented with subacute bowel obstruction. The remaining patient was identified to have a solitary, likely port-site related metastatic deposit following PSMA-PET for rising PSA. All patients underwent surgical metastectomy, of which two were successfully treated to undetectable PSA levels.

Conclusion: To the best of our knowledge we report the first case series of peritoneal metastasis following robotic assisted radical prostatectomy. Our case series demonstrates that peritoneal metastasis can present over a broad time span, in a variety of ways. This ranges from solitary localized disease to disseminated peritoneal carcinomatosis. Tumour characteristics are likely to be a key factor in predisposition for development of peritoneal metastasis, however larger case series are needed to evaluate this infrequent occurrence.

UP-470

Evaluation of Phospholipid Profile of Prostate Cancer Cell Lines by LCMS and GCMS Analysis

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Introduction and Objective: In recent years, morbidity of prostate cancer has been increasing in Japan. There are epidemiological data suggesting that high-fat diet and obesity are involved in the onset and progression of prostate cancer, and lipid metabolisms have been considered to play important roles. We have reported that the profile of phospholipid in prostate cancer tissues is different from that in benign tissues in imaging mass spectrometry. However, the precise roles remain unknown. We have two objectives in this research. First of them is to establish experimental methods to analyze the phospholipid profile in Liquid Chromatography-Mass spectrometry (LCMS). And another objective is to analyze the profiles of phospholipid in prostate cancer cell lines and to compare them.

Materials and Methods: We extracted lipid based on Folch method. We analyzed phospholipids by LCMS/MS using SHIMADZU LCMS-8050 together with LC/MS/MS MRM library (Shimadzu). First, using the synthetic phospholipids, we confirmed that we could detect phosphatidylcholine, phosphatidylinositol, lysophosphatidylcholine, lysophosphatidyl-ethanolamine and Sphingomyelin, simultaneously. The dilution series of each phospholipid showed linear relationship between concentration and intensity in LCMS. We evaluated phospholipid compositions of four prostate cancer cell lines, LNCaP, PC3 and DU145 and AI-LNCaP which is androgen-independent cell line established from LNCaP. Gas Chromatography-Mass spectrometry (GCMS) was performed to analyze double bonds in each fatty acid composing phospholipids in detail by the methods which were previously established.

Results: We established experimental methods to analyze the phospholipid profile in LCMS. As a result of analyzing the profile of phospholipid in the cell lines, we found that the expression of phospholipids with polyunsaturated fatty acids (PUFAs) were higher in PC3 and DU145 than that in LNCaP. Conversely, the expression of phospholipids composed of saturated fatty acids or monounsaturated fatty acids in LNCaP were higher than that in PC3 and DU145. We focused on phosphatidylcholine which is most abundant phospholipid, and analyzed these cell lines by GCMS. And similar findings were observed in GCMS also.

Conclusion: PC3 and DU145 have more malignant biological potential than LNCaP. These results suggest that PUFAs might be related to aggressiveness of prostate cancer.

UP-471

40+ Years Seasonal Vitamin D Deficiency and Anaerobic Bacteria as Potential "Co-Carcinogens" in Prostate Cancer Development?

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Introduction and Objective: There is increasing evidence linking the microaerophylic bacterium Propionibacter acnes with prostate cancer (PC). That circumcision reduces PC risk further supports a role for anaerobes as circumcision reduces their presence on the glans penis. That persistent anaerobic bacterial infection is carcinogenic has been established from studies associating Helicobacter pylori to stomach cancer (also linked to Vitamin D deficiency). This presentation has undertaken a literature review of studies linking anaerobes with PC and summarises the evidence that Vitamin D deficiency could be playing a "Co-Carcinogenic" role in this process.

Materials and Methods: Eight searches of abstracts was undertaken using prostate as primary term vs 1 of 8 different terms relating to anaerobic bacteria in general and specifically diagnosis of Acne, P. acnes and H.pylori. This revealed 254 abstracts whose titles were reviewed and 17 papers selected for review in this presentation.

Results: Six case control studies (5 for P. acne and 1 for H. pylori) showed overall OR 0.98 (p NS). The only one reporting significant risk of OR 1.2 correlated it with teenage acne problem only. There were 3 case control studies involving 288,081 normal individuals followed for up to 36 years reporting significant risk of late occurence of PC if the subject had teenage acne (OR 1.67, 1.7, 1.43). Finally, 8 papers were reviewed that reported significant association in specific anaerobic bacterial studies when comparing malignant vs benign prostate tissues at time of diagnosis.

Conclusion: These observations provide a new insight into explaining the link between early puberty and increased risk of prostate cancer. Studies of serum Vitamin D levels and PC have not shown a strong positive link while less specific geographic studies of ambient sunshine have been more consistently positive. Over 10-40 years, repeated episodes of Vitamin D deficiency induced innate immune dysfunction, could explain PC linkage with the sun-sensitive P.acnes. In light of the results found in this report, the technology used to produce bacterial vaccines to treat women with recurrent cystitis could offer new approaches to separate low verses high grade PC as could study of low dose check point inhibitors.

UP-472

Waiting Times for Prostate Cancer Diagnosis at a Nigerian Teaching Hospital – A 5 Year Review

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Introduction and Objective: The waiting time for prostate cancer diagnosis varies between different institutions in different countries. It is considered by some as a measure of the quality of health care delivery. There is no evidence locally to suggest how long patients with clinically suspected prostate cancer wait to have a prostate biopsy done in Nigeria.The study aimed to document the prostate biopsy waiting times and the efficiency of getting a prostate biopsy done at the Lagos State University Teaching Hospital Nigeria with a view to identify the possible delays and improve on service delivery.

Materials and Methods: We retrospectively reviewed the data of the patients who had prostate biopsy done over a five year period (January 2011 - December 2015). Data retrieved and analyzed were patients' age, serum PSA and the various time lines – referral to presentation, presentation to biopsy, biopsy to histology report and histology to treatment.

Results: Records were available for 270 patients. The mean age was 69.50 ± 8.03years (range 45-90). The mean PSA at presentation was 563.2 ± 1879.2ng/ml (range 2.05-15400), median PSA was 49.3ng/ml. Of the 211 histology reports available, the histology was malignant for 115 patients (54.5%) and benign for 96 patients (45.5%). Mean waiting times were: from referral to presentation: 26.84 days (range 1-263), presentation to biopsy: 35.92 days (range 1-510), biopsy to review of histology: 35.23 days (range 4-300), histology review to treatment 23.77 days (1-300). Overall waiting time from referral to treatment was 121.76 days. The mean time from biopsy to histology was significantly shorter for patients who had their specimens processed in private laboratories (28.5 days) compared to those who had the specimen pro-

cessed at the teaching hospital laboratory (42.7 days), p = 0.007.

Conclusion: Though most of the patients with suspected prostate cancer presented late with high PSA values, there was still a significant delay within the hospital system in getting a prostate biopsy done and retrieving/discussing the histology report. There is the need for a review of the present practice.

UP-473

Testosterone Monitoring for Men Under Androgen Deprivation Treatment (ADT) for Prostate Cancer: Practice Patterns in 8 European Countries

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Introduction and Objective: Achievement of castration levels of testosterone is associated with improved clinical outcomes such as increased overall survival, biochemical progression free survival and freedom from progression to castrate-resistant disease in men receiving ADT for non-metastatic or metastatic hormone-naïve prostate cancer. Current guidelines do not clearly define the ideal testosterone suppression goal orthe timing of measurements. A clear-cut recommendation is only given for cases under ADT with rising PSA and/or clinical progression to confirm a castrate-resistant state. We explored the corresponding practice patterns of physicians treating prostate cancer patients across a range of European countries.

Materials and Methods: A survey was conducted using a structured questionnaire in 8 EU countries (CZ, GR, HU, LT, LV, PL, ROM, SWE) between February and May 2018. The questionnaire covered general respondent information (specialty, years of practice, practice affiliation), and, among others, their attitude towards target castration levels and frequency of estimating testosterone levels during treatment.

Results: In total, 375 physicians (70% urologists, 30% medical oncologists) completed the survey (response rate 58%), affiliated to university hospital/cancer center (50%), non-teaching hospital (36%) and private sector (14%). Target nadir testosterone levels varied significantly by country; in certain countries (CZ, LT) a considerable percentage (up to 22%) of treating physicians had no target nadir level. Target castration level differed significantly between urologists and oncologists with urologists opting more frequently for testosterone levels <20 ng/dL (p= 0.045), independently of practice affiliation (p= 0.2). Testosterone monitoring practice also differed significantly among countries regarding timing of measurement before LHRH initiation (6%-72%), within 3 months of LHRH initiation (13%-44%), during LHRH treatment (7%-60%), orwhen PSA increased (46%-93%). A higher proportion of oncologists than urologists measured testosterone levels before the initiation of ADT (55% v 27%, p <0.001) while more urologists measured it at the time of PSA increase (64% v 44%, p <0.001).

Conclusion: Testosterone monitoring practices vary significantly across Europe as well as among treating physicians. Failure to comply with recent scientific guidelines on testosterone monitoring may have a significant impact on patients' outcomes. Implementation strategies may be needed to ensure improved guideline adherence.

UP-474

Prediction Model Study of Prostate Cancer Detection Using Deep Learning

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Introduction and Objective: Prostate biopsy is the only way to confirm to diagnose prostate cancer (PC). However, side effects of procedure including sepsis or pain might be harmful, various parameters was developed for accurate diagnosis and avoiding unnecessary biopsies. In this study, we developed a prediction model using prostate-specific antigen (PSA) through machine learning (ML) algorithm, particularly, a logistic regression model.

Materials and Methods: We designed our method to predict prostate biopsy results based on patient's PSA level and PSA velocity. Our method was mainly comprised of two parts: (i) preprocessing the raw EMR data into fixed time-serial input data suitable for modeling and (ii) applying ML model to predict and test prostate biopsy results, whether if the biopsy result would come out to be benign or to have adenocarcinoma. It applied the ML algorithm at this point with six variables, including the five PSA levels and subjects' age.

Results: Total 270 patients who underwent prostate biopsy were analyzed and 72 patients were diagnosed prostate cancer. PC patients groups were significantly older than benign group. (67 years vs 71 years; p <0.01). Mean PSA level was 4.54 ng/mL. PSA level was not different between two groups. Ten-fold validation was conducted in logistic regression with accuracy of 67 percent, sensitivity of 67 percent and specificity of 66 percent using ML algorithm.

Conclusion: Physicians could use ML algorithms to predict PC. More accurate prediction will be available with adding of variables.

UP-475

Age and Prostate Specific Antigen Density as Predictors for High Grade Prostate Cancer in Prostate Biopsy at PSA Grey Zone

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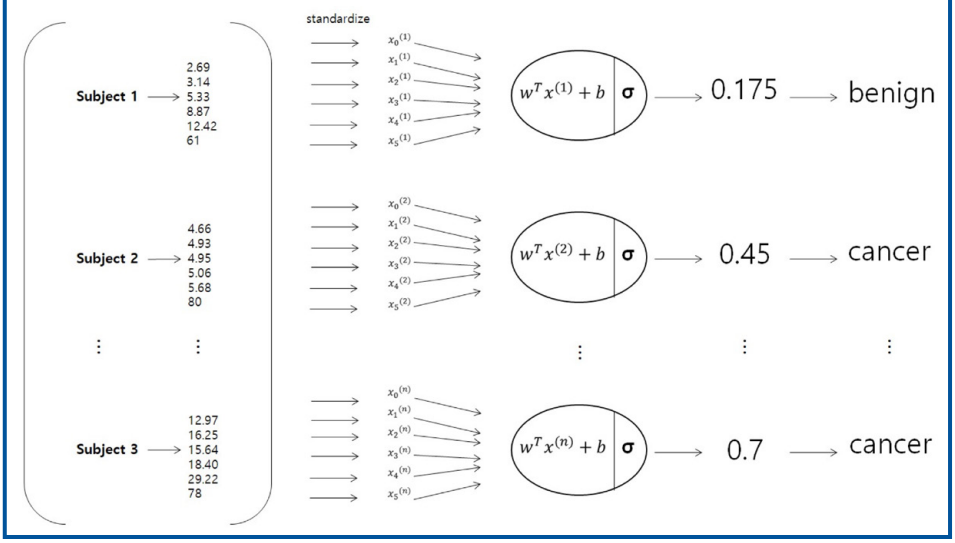
Introduction and Objective: Prostate specific antigen (PSA) screening test has been widely spread in recent decades, physicians should consider prostate biopsy when there is PSA level elevation. However, side effects and lower detection rates of prostate cancer (PC) of prostate biopsy have led physicians to question whether they should perform prostate biopsy in the PSA grey zone (4~10 ng/ml). Also, low-risk prostate cancer was recommended active surveillance due to side effects of definitive local treatment. In this study, we investigated predictors for high grade PC at prostate biopsy which needs definitive treatment in PSA grey zone patients.

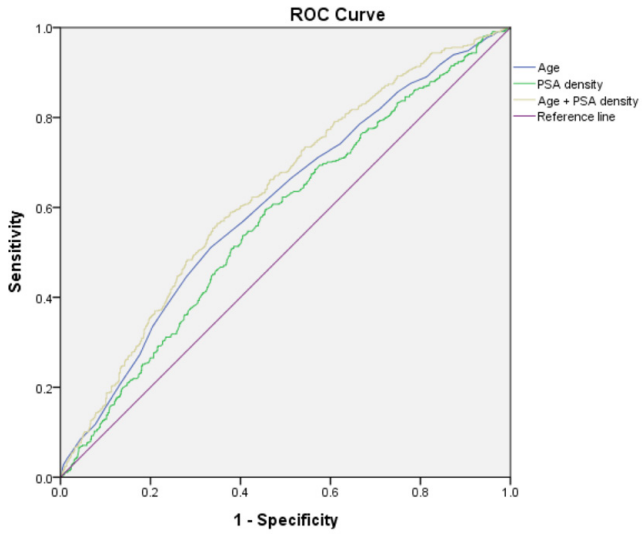
Materials and Methods: We investigated PC patients underwent transrectal prostate biopsy in PSA grey zone and who visited our institution. PSA grey zone was defined as PSA level from 4 to 10 ng/ml. High grade PC was defined as Gleason grade above Gleason grade 1. Clinical parameters were evaluated to predict High grade PC at prostate biopsy using logistic regression analysis. Receiver operating characteristics (ROC) curves and Youden Index was performed to determine for cut-off value to predict high grade PC in PSA grey zone.

Results: Total 1467 PC patients with PSA grey zone was included. Median age was 65 years and median PSA level was 6.4 ng/ml. Median prostate volume measured by trans-rectal ultrasonography was 31cc

UP.474, Figure 1.



UP.475, Figure 1. Receiver Operating Characteristics (ROC) curves for predicting high grade prostate cancer in PSA grey zone (4~10 ng/ml)



and median PSA density was 0.20 ng/ml/cc. In univariable and multivariable logistic regression analyses for prediction of high-grade PC, age and PSA density was significantly associated with high grade PC. Age above 65 years and PSA density above 0.21 was proposed as cut-off value to predict high grade PC in prostate biopsy.

Conclusion: In PSA grey zone, age above 65 years and PSA density >0.21 ng/ml/cc was associated with high grade PC in prostate biopsy. Physicians might consider these parameters whether perform prostate biopsy in PSA grey zone patients.

UP-476

Usefulness of Bi-Parametric Magnetic Resonance Imaging with b= 1800 s/mm2 Diffusion-Weighted Imaging for Diagnosing Clinically Significant Prostate Cancer

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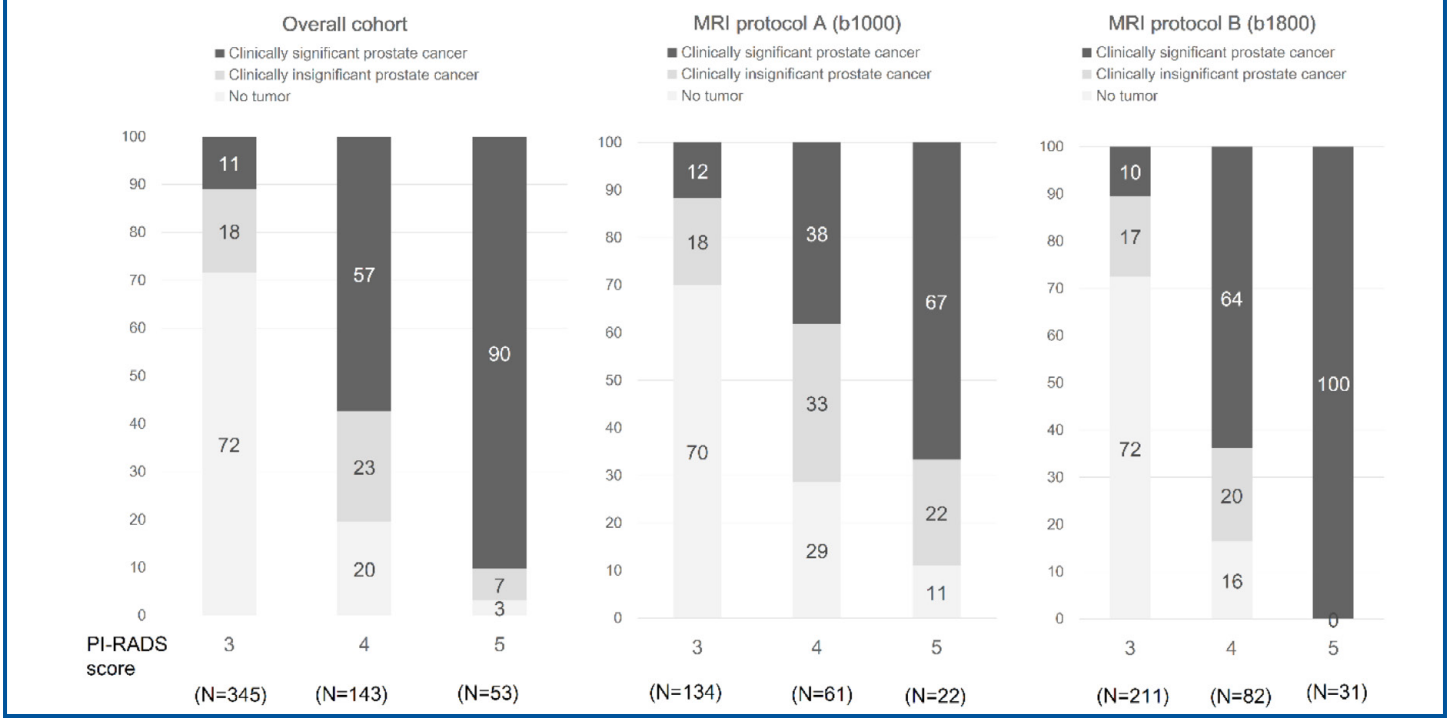
Introduction and Objective: This study was conducted to compare the accuracy of bi-parametric magnetic resonance imaging (bpMRI) with high b-value (b= 1000 s/mm^2, b1000) diffusion-weighted imaging (DWI) to that of bpMRI with ultra-high b-value (b= 1800 s/mm^2, b1800) DWI to detect clinically significant prostate cancer (csPCa).

Materials and Methods: A total of 408 patients with suspected PCa were evaluated by bpMRI prior to biopsy. One reader retrospectively reviewed all images for confirmation of Prostate Imaging–Reporting and Data System (PI-RADS) score. Cognitive MR/ultrasound fusion target biopsy was done for all visible lesions (PI-RADS 3-5). Systematic biopsy was done for all cases. The csPCa detection rates were compared according to the bpMRI protocol (with/without b1800 DWI) or PI-RADS score. The accuracy of PI-RADS score was estimated using the receiver operating characteristics curve. The signal intensity (SI) ratio (visible lesion/surrounding background) was evaluated.

Results: Among 164 men confirmed having PCa, 102 had csPCa (Gleason score 7). Proportions of PI-RADS score 1-2/3/4/5 without b1800 DWI (n= 133) and with b1800 DWI (n= 275) were 19.5%/57.9%/15.8%/6.8% and 21.1%/48.7%/22.2%/8.0%, respectively. csPCa detection rates with/without b1800 DWI were 27.6%/19.5% (p= 0.048), respectively. (figure) Areas under the curve of PI-RADS grading with/without b1800 DWI for csPCa detection were 0.885 and 0.705, respectively. The SI ratio in b1800 DWI was higher than that in b1000 DWI (p < 0.001).

Conclusion: Adding b1800 DWI to bpMRI protocol improved the diagnostic accuracy and detection rate of csPCa. The higher SI ratio (lesion/background) in b1800 DWI enabled clearer identification of lesions.

UP.476, Figure 1. Detection rate of overall and clinically significant cancer according to PI-RADS score in each MR protocol.



UP-477

Is Androgen Deprivation Therapy Associated with Cerebral Infarction in Patients with Prostate Cancer? A Korean Nationwide Population-Based Propensity Score Matching Study

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Introduction and Objective: To evaluate the association of androgen deprivation therapy (ADT) with cerebral infarction (CI).

Materials and Methods: Using information from the National Health Insurance Service database with regard to the entire Korean adult prostate cancer (PC) population (n = 206,735), data on ADT and CI between 2009 and 2016 were analyzed. Adjusted hazard ratio of CI associated with the use of ADTs were estimated using propensity score–matched Cox proportional hazards models and Kaplan-Meier survival analyses.

Results: Our final cohort comprised of 36,146 individuals with PC, including 24,069 men (66.6%) who underwent ADT. During the follow-up (mean 4.1 years), 2,792 patients were newly diagnosed with cerebral infarction. In the unmatched cohort, there was significant difference in the annual incidence of CI between ADT and non-ADT group (22.8 vs 14.6 per 1,000 person-years). However, there was no significant difference between ADT and non-ADT group in the matched cohort (14.9 vs 14.6 per 1000 person-years). The adjusted hazard ratio for CI for PC patients who received ADT was 1.045 (95% CI: 0.943–1.159, $P = 0.401$) compared with those who did not receive ADT. In addition, cumulative duration of use ADT was not also associated with an increased risk of cerebral infarction. However, old age, hypertension, diabetes, myocardial infarction, congestive heart failure, peripheral vascular disease, renal disease, dementia, and atrial fibrillation were revealed as contributing factors to cerebral infarction.

Conclusion: In this nationwide, population-based study, the use of ADT was not associated with CI after adjusting for potential confounders.

UP-478

The Preoperative Predictors of Extraprostatic Extension of Carcinoma Prostate (pT3) – An Indian Perspective

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Introduction and Objective: There is need for developing nomogram predicting extraprostatic extension (EPE) for Asian populations. There is need for data from Indian cohorts. We present our experience of preoperative factors predicting extraprostatic extension (pT3) in clinically localized prostate cancer in an Indian population.

Materials and Methods: We analyzed 336 clinically localized cancer prostate (cT2) who underwent robotic radical prostatectomy at a single center (2011-18). Post hoc analysis was done of prospectively maintained data. The variables with significant association in univariate analysis were analyzed with multivariate binary regression. Receiver operating characteristic (ROC) curves were plotted for the independent predictors of EPE.

Results: There was EPE in 44% of cT2 patients. Palpable nodule was present in 81.1% pT3 while 44.4% pT2 patients. Mean PSA was 12.0 ±8.9ng/mL in pT2 and 20.5 ±18.3 ng/mL in pT3. There were 32.4% patients with biopsy Gleason 4+3. The mean of maximum cancer in a core was 75.9 ±29.4% in EPE group and 53.5 ±30.3% in non-EPE group. The mean core positivity was 63.0 ±28.1% in EPE group and 40.3 ±24.7% in non-EPE group. Palpable nodule (p=003), T2c stage (p=0.005), Gleason 4+3(p= 0.02), maximum cancer in a core (p=0.01), core positivity(p=0.05) were predictors of extraprostatic extension independent of PSA. ROC analysis for maximum cancer in a core, core positivity, Gleason 4+3, palpable nodule and T2c stage had an area under curve(AUC) of 0.695, 0.679, 0.664, 0.664 and 0.425 respectively. Maximum cancer in a core cu-toff of 52% had sensitivity of 72.3% and specificity 51.7%. the core positivity cutoff of 45% had sensitivity of 70.7% and specificity 62.94%.

Conclusion: Palpable nodule, clinical T2c stage, biopsy Gleason grade 4+3, maximum cancer in a core, core positivity were predictors of extraprostatic extension independent of PSA in an Indian cohort.

UP-479

Evaluation of Circulating β2 Microglobulin as a Novel Risk Factor for Biochemical Recurrence After Radical Prostatectomy

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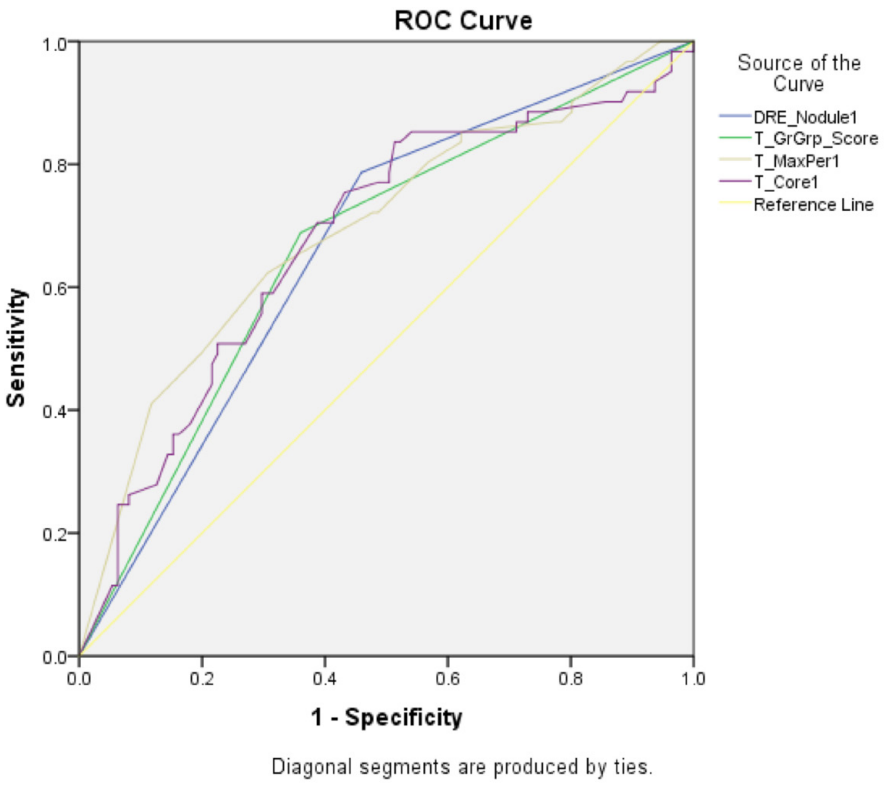
Introduction and Objective: One of the most challenging issues after radical prostatectomy (RP) is Biochemical recurrence (BCR). The Prediction of BCR can determine these lections of modality and its continuation. Currently, preoperative PSA level, Gleason Score and stage of Tumor are used for prediction of BCR. The association of beta-2 microglobulin (B2MG) with hematologic and solid Tumors such as prostate cancer suggested in previous studies. The circulating B2MG as a risk factor for BCR has been applied for the first time in the current study. B2MG is a subunit of the major histocompatibility complex (MHC) class I molecule that present antigenic peptides to cytotoxic CD8T cells. Unlike B2MG, circulating B2MG likely provides a good environment for the growth of cancer cells due to its angiogenesis and Tumorigenesis properties.

Materials and Methods: A cohort study of 62 patients who underwent RP from 2012 to 2013 was carried out. B2MG was measured in the stored serum samples taken from the patients who underwent biopsy. Patients were monitored for BCR, metastasis, and death caused by prostate cancer over a five-year period. The association of B2MG level with the PSA rising were investigated using multivariate models by adjustment of age-related effects.

Results: There were significant positive associations of B2MG with the risk of PSA rising prostate cancer patients after 5 years (RR= 1.3;95% CI, 1.06–3.14; p-value= 0.003). B2MG levels in the positive PSA rising group were 43-fold higher than in patients with negative PSA rising (p-value= 0.006).

UP.478, Figure 1.



Conclusion: B2MG could help identify those who would derive the greatest benefit from additional systemic or local treatment.

UP-480

Assessing the Diagnostic Value of Plasma-Free DNA in Prostate Cancer Screening

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Introduction and Objective: Prostate cancer is the second form of cancer among men worldwide. For early cancer detection, we should identify tumors in initial stages before the physical signs become visible. The present study aims to evaluate the diagnostic value of cell-free DNA (cfDNA), its comparison with prostate-specific antigen (PSA) level in prostate cancer screening and also in patients with localized prostate cancer, metastatic form, and benign prostatic hyperplasia (BPH).

Materials and Methods: The participants of this study were selected from 126 patients with genitourinary symptoms suspected prostate cancer, rising PSA, and/or abnormal rectal examination results and 10 healthy subjects as controls. Peripheral blood plasma before any treatment measures was considered. cfDNA was extracted using a commercial kit, and PSA levels were measured by ELISA. The ANOVA test was used to compare the average serum level of PSA and plasma concentration of cfDNA between the groups. The correlation between variables was measured by the Pearson test.

Results: The subgroups consisted of 50 patients with localized prostate cancer, 26 patients with metastatic prostate cancer, 50 patients with BPH, and 10 healthy subjects; the average concentration of cfDNA in these subgroups were 15.04, 19.62, 9.51, and 8.7 ng/µl, respectively. According to $p < 0.0001$ obtained from multivariate test, there was a significant difference between all the groups.

Conclusion: Our findings indicated significant differences between cfDNA levels of patients with localized and metastatic prostate cancer, and differences between these two groups from BPH and healthy cases show the importance of this biomarker in non-invasive diagnostic procedures.

UP-481

Protein Disulfide Isomerase 4 Drives Docetaxel Resistance in Prostate Cancer

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Introduction and Objective: Docetaxel (DTX) chemotherapy has historically been the first-line treatment for metastatic castration-resistant prostate cancer for several decades. However, long-term DTX treatment is known to promote tumor cell resistance to apoptosis induction, and the mechanisms by which resistance develops are still incompletely understood. Hence, this study was conducted to evaluate the potential effect of protein disulfide isomerase 4 (PDIA4) on chemoresistance to DTX in prostate cancer (PCa) and to investigate the underlying mechanisms.

Materials and Methods: Two types of DTX resistant PCa cells, i.e., DTX resistant PC-3 (PC-3/DTXR) and C4-2B (C4-2B/DTXR) cells, as well as the parental PC-3 and C4-2B cells were developed to investigate these issues. shRNAs targeting human PDIA4 to knockdown the expression, or PDIA4 expressing adenoviral vectors to overexpress the PDIA4 were transfected to PCa cells respectively, to study the underlying mechanisms of PDIA4 involving in PCa DTX resistance.

Results: Results showed that PDIA4 exhibited a dramatic overexpression in PC-3/DTXR and C4-2B/DTXR cells. Down-regulation of PDIA4 by infecting PC-3/DTXR and C4-2B/DTXR cells with shPDIA4 lentivirus stimulated cell death by prompting apoptosis. UP.regulation of PDIA4 by infecting PC-3 and C4-2B cells with PDIA4 expressing adenoviral vectors showed severer resistance to DTX. In addition, the expression level of Bcl-2 was remarkably down-regulated, whereas the expression of Bax showed a significant up-regulation in PDIA4 knockdown DTX resistant PCa cells. Meanwhile, PDIA4 up-regulation induced phosphorylated Akt expression, while PDIA4 knockdown significantly inhibited the expression in PCa cells.

Conclusion: Our study indicates that PDIA4 is a negative regulator of PCa cell apoptosis and plays a critical role in PCa DTX resistance by activating the Akt-signaling pathway. DTX resistance is mediated by apoptosis with multiple changes in pro- and anti-apoptotic genes and proteins. Thereby, it indicates that targeting PDIA4 could be a potential therapeutic approach against DTX resistance in PCa.

UP-482

Role of Hypoxia-Induced Erythropoietin Signaling Pathway in the Development of Castration-Resistant Prostate Cancer

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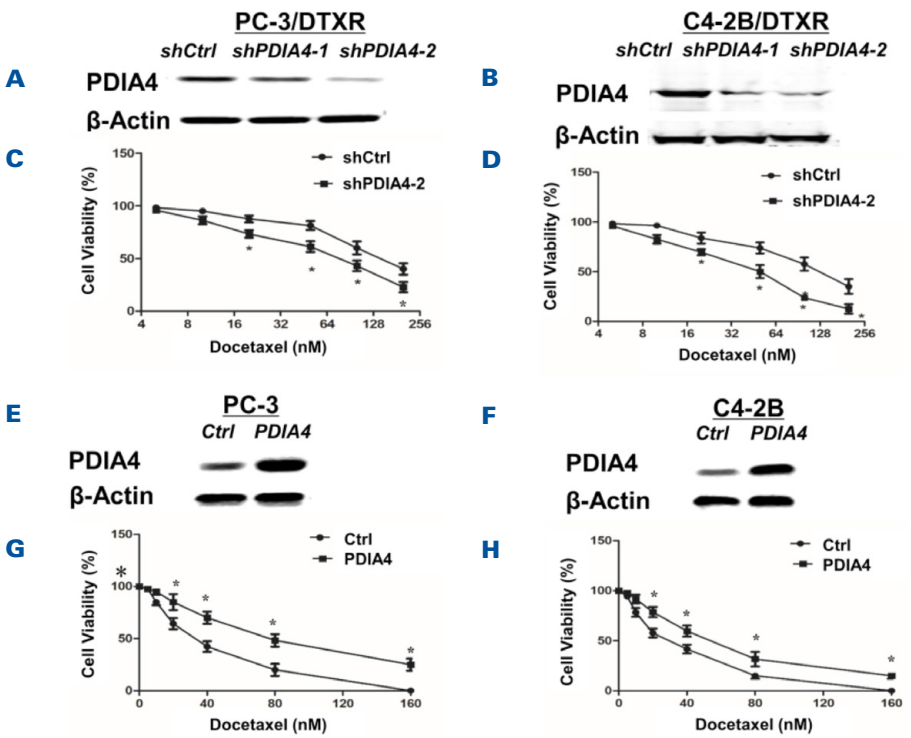
Introduction and Objective: Hypoxia-induced erythropoietin (EPO) signaling pathway plays an important role in the development of tumors. This study aimed to investigate the role of erythropoietin signaling pathway in the development of castration-resistant prostate cancer.

Materials and Methods: Specimens of advanced hormone naïve prostate cancer (ADPC) and castra-

UP.481, Figure 1. PDIA4 enhanced DTX resistance in PCa cells



(**A, B**) PC-3/DTXR and C4-2B/DTXR cells were infected with lentivirus expressing shPDIA4. 48 hours after transfection, cells were collected for detecting PDIA4 expression. Knockdown efficiencies of PDIA4 by shPDIA4-1 and shPDIA4-2 in PC-3/DTXR and C4-2B/DTXR cells were analyzed. (**C, D**) PC-3/DTXR and C4/28/DTXR cells stably expressing shPDIA4-2 or shCtrl were placed on 96-well plates to measure IC50 values of DTX by CCK-8. (**E, F**) Stably PDIA4-expressing PC-3 and C4-2B cells were generated using PDIA4 expressing adenoviral vectors. Expression of PDIA4 after infected with PDIA4 expressing adenoviral vectors or control vectors was measured by western blot. (**G, H**) Stably PDIA4-expressing PC-3 and C4-2B cells were placed on 96-well plates to measure IC50 values of DTX by CCK-8. Data presented were from three independent experiments and were shown as mean ±SD. *$p < 0.05$, versus control group, were assumed as statistically significant.

tion-resistant prostate cancer (CRPC) were obtained after transurethral resection of the prostate and the expression of EPO/EPO receptor (EPOR) in the specimens was detected by immunohistochemistry. In addition, LNCaP cells were induced under hypoxic environment with 1% oxygen concentration for 14 days, and then, RT-PCR and Western blotting were used to detect the expression of EPO and EPOR in LNCaP cells under hypoxic and normoxic conditions. Finally, the growth of LNCaP cells in androgen-stripped culture medium was determined after knock-down of EPOR using siRNAs.

Results: The EPO and EPOR expression scores for CRPC and ADPC were 7.55 vs 4.5, and 7.45 vs 5.9, respectively ($p < 0.001$). Compared with these LNCaP cells cultured under nomoxia, hypoxia-induced LNCaP cells grown faster in androgen-deprived culture medium. And as with this, hypoxia-induced LNCaP cells had significantly increased EPO and EPOR expression. Meanwhile, LNCaP cells could not be cultured in androgen stripped culture medium after EPOR suppression.

Conclusion: The EPO-EPOR self-secretion loop played an important role in the advancement of prostate cancer from androgen dependence to castration resistance.

UP-483

Viscoelastic Properties of Prostate Cancer Whole Blood Utilizing Thromboelastography & Scanning Electron Microscopy

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Introduction and Objective: Pilot study to compare the viscoelastic properties of prostate cancer patients' blood to determine whether prostate cancer increases physiological clotting factors to predispose a patient to increased thrombosis.

Materials and Methods: University of Pretoria Research Ethics committee clearance reference 108/2018. The study is a laboratory-based ex vivo cross-sectional study comparing a control group to localized D'Amico risk groups and metastatic cancer. Pre-treatment biopsy confirmed Prostate cancer patients and a control population from Steve Biko Academic and Kalafong Hospitals in South Africa, were voluntarily recruited totaling 77. Smokers and comorbidities affecting coagulation were excluded. Control group n=9 (Mean Age 64.1); low risk n= 12 (Mean Age 66.1); Intermediate risk n=19 (Mean Age 67.5); High Risk n=37 (Mean Age 67.7) of which 20 were metastatic. Metastatic disease confirmed by either bone scan or 68GA-PSMA PET/CT. Blood and clotting analyzed ex vivo utilizing TEG® and Scanning Electron microscopy (SEM). The following TEG® values were compared R-time, K-time, α -Angle, MA, G, MRTG, TMRTG, TTG. SEM Micrographs of whole blood and whole blood clots were analyzed.

Results: Kruskal-Wallis analysis of continuous variables (α= 0.05; CI = 95%) showed no statistically significant difference between controls and localized prostate cancer viscoelasticity. Mann-Whitney U test found significant difference between metastatic disease and localized disease K-time p= 0.01; α -Angle p= 0.02; MA p=0.01; G p= 0.01; MRTG p= 0.009; TTG p= 0.01. Whole blood micrographs of Metastatic group showed RBC changes suggesting oxidative stress from chronic inflammation evidenced by increased eryptosis. RBC also showed loss of structural integrity and proteinaceous debris on membrane suggesting altered membrane potentials. Whole blood clots have deformed matted clumped fibrin suggesting RBC cell leak of ferritin from damaged RBCs and architectural distortion suggesting beta-amyloid misfolding.

Conclusion: Pilot study reveals that localized prostate cancer itself does not lend itself to increased blood viscosity however metastatic disease increases viscoelasticity possible explaining the increased VTE events seen in this population group. Further research needs to be done to assess utility of findings.

UP-484

Prediction of Pathologically Favorable Disease Among Men Undergoing Radical Prostatectomy for Intermediate-Risk Prostate Cancer

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Introduction and Objective: To investigate the incidence of pathologically favorable disease in men with intermediate-risk prostate cancer and possibility of prediction for AS using clinical and pathological parameters including MPMRI.

Materials and Methods: We retrospectively reviewed the database of 2,356 radical prostatectomy (RP) cases collected prospectively from January 2006 to June 2018. Clinicopathological parameters including age, prostate-specific antigen (PSA) level, prostate volume, digital rectal examination (DRE), findings on transrectal ultrasonography (TRUS), prostate volume, clinical stage, and findings on multiparametric magnetic resonance imaging (MPMRI) were evaluated. Subgroup analysis was performed in patients who underwent MPMRI in patients with intermediate-risk prostate cancer.

Results: A total of 938 patients classified into intermediate-risk group were included in this analysis. RP confirmed 30 cases with pathologically favorable disease (3.2%) among 938 patients. Univariable and multivariable logistic regression analyses showed that biopsy Gleason score was statistically significant predictors for pathologically favorable disease in patients with intermediate-risk prostate cancer. Subgroup analysis in 414 patients who underwent MPMRI showed that advanced coefficient maps had no additional predictive value for pathologically favorable disease in patients with intermediate-risk prostate cancer. Incorporation of biopsy Gleason score 6, positive biopsy core 2 and prostate volume >40 cc showed potential prediction of pathologically favorable disease in men with intermediate-risk prostate cancer.

Conclusion: Low incidence of pathologically favorable disease in patients with intermediate-risk prostate cancer shows that most of men with intermediate-risk prostate cancer are not suitable for AS as a treatment option. Our results show MPMRI could not play a role for detection of pathologically favorable disease among patients with intermediate-risk prostate cancer. However, re-classification of intermediate-risk prostate cancer using Gleason score, number of positive biopsy core and prostate volume might be helpful to predict pathologically favorable disease.

UP-485

Predictive Factors of Pathologic Upgrading in Biopsy Gleason Group 2 Prostate Cancer

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Introduction and Objective: The morphologic criteria for the identification of the Gleason patterns were redefined in 2014 ISUP, thus resulting in the shrinkage of the Gleason pattern 3 and the expansion of the Gleason pattern 4. And Gleason group 2 is the active surveillance criteria in some institution. Authors investigated the factors that predict upgrading in biopsy GS 3 + 4. The goal is to help the treatment plan of GS 3 + 4 prostate cancer.

Materials and Methods: From June 2014 to April 2018, a total of 405 preoperative GS 3 + 4 patients were retrospectively studied. Age, PSA, PV, PSAD, number of positive biopsy core, single core positivity, PIRADS were set as potential factors. Chi-square test and logistic regression analysis were used to compare the upgrading group with the non-upgrading group. PIRADS version 2 was used and differentiated into 1-3, and 4-5 groups.

Results: The upgrading group and the non-upgrading group were 157 and 248. Mean age was 67.7 and 66.1, median PSA was 8.63 and 6.76, and PSAD was 0.427 and 0.273 respectively. The majority of the upgrading was to move to 4 + 3 and upgrading to GS 4 + 4 or higher was 5.7%. In univariate analysis, age, PSA, PSAD, and PIRADS were significant factors, and age (OR 0.965, 95% CI 0.937-0.994, p= 0.018) and PIRADS (OR 2.042, 95% CI 1.319-3.159, p= 0.001) were significant in multivariate analysis.

Conclusion: High PI-RADS score is associated with pathologic upstaging of prostate cancer. The PI-RADS score may be helpful in planning active suveillance in the low-risk group and lymph node dissection in the surgical treatment.

UP-486

The Predictors of Upgrading in Patients with Gleason Grade Group 1 on Opinion-Matched Biopsy Specimens

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Introduction and Objective: We investigated the concordance between Gleason scores assigned to prostate biopsy specimens by outside pathologists and a urological pathology expert, and determined the risk of upgrading between opinion-matched Gleason grade group (GGG), 1 biopsy specimens and radical prostatectomy specimens.

Materials and Methods: From January 2012 to May 2018, 733 patients underwent robot-assisted rad-

ical prostatectomy. Patients whose original biopsy specimens from outside hospitals were reviewed by a urological pathology expert in our institution were included. Patients who had received neoadjuvant hormonal therapy were excluded. Logistic regression analysis was used to identify predictors of upgrading among GGG 1 diagnoses.

Results: A total of 403 patients were included. Agreement in GGG between initial and second-opinion diagnoses was present in 256 cases (63.5%). Although opinion-matched cases improved concordance between biopsy and prostatectomy specimen GGG compared with single-opinion cases (initial, 35.2%; second-opinion, 36.5%; matched, 41.4%), 71% (56/79) of cases classified as GGG 1 were upgraded after prostatectomy. Multivariate analysis revealed that prostate-specific antigen density, and Prostate Imaging Reporting, and Data System version 2 score were significant predictors of upgrading (odds ratio 1.10, p=0.01; odds ratio, 1.88; p=0.03, respectively).

Conclusion: The GGG concordance rate between needle-core biopsy and radical prostatectomy specimens was higher in opinion-matched cases; however, 71% of opinion-matched GGG1 cases were upgraded after robot-assisted radical prostatectomy. Urologists would propose treatment strategies or further biopsy rather than active surveillance r patients with GGG1 and a high PSAD and/or PI-RADS score.

UP-487

Multi-Parametric MRI of the Prostate with PIRAD Score1 and 2 can Avoid Unnecessary Prostate Biopsy

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Introduction and Objective: Multi-parametric MRI (MP-MRI) of the prostate can detect clinically significant cancer. But several studies reported about 90% negative predictive value. We analyzed prostate biopsy data from MP-MRI PIRAD Score1 and 2 group and Score3 group retrospectively.

Materials and Methods: Between Jan 1, 2011, and Dec 31, 2016, 864 cases underwent MP-MRI and prostate biopsy. PIRAD Score1,2 and Score3 were 272 and 220 cases respectively. Significant cancer was defined as Grade group >1 or a maximum cancer core length 6mm or longer. Significant cancer with Score 1,2 was defined GroupA. Significant cancer with Score3 which had been evaluated as Score1,2 and had not gotten biopsy previously was defined GroupB. Retrospectively, age, PSA, PSA kinetics, prostate volume, pathological findings, treatment and PSA recurrence free survival were analyzed statistically.

Results: GoupA was n= 24(9.9%). GroupB was n= 11(5.0%). Between both groups clinical characteristics and pathological findings had no differences statistically. Although the follow up periods were short, no cases had PSA recurrence of both groups.

Conclusion: Prognosis of significant cancer with PIRAD Score1 and 2 was sufficiently acceptable as long as biopsy and treatment were performed when the PIRAD Score changed to 3 even if biopsy was not performed on Score1 and 2. Prostate biopsy with PIRAD Score1 and 2 are unnecessary.

UP-488

Salvage Radiation Therapy May Have Larger Impact on Oncological Outcome than Extended Pelvic Lymph Node Dissection During Robotic-Assisted Laparoscopic Prostatectomy

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Introduction and Objective: From the introduction of robotic-assisted laparoscopic prostatectomy (RALP) in our hospital, we didn't do extended pelvic lymph node dissection for avoiding lymphocele or other complications. And when recurrence occurred, in principle, we recommend salvage radiation therapy to the margin and pelvic lymph nodes. We consider our strategy could prove that salvage radiation therapy might have larger impact on oncological outcome than extended pelvic lymph node dissection.

Materials and Methods: Between May 2013 and October 2017, a total of 263 patients underwent robotic-assisted laparoscopic prostatectomy in our hospital. Mean patient age was 67 years (range 48 to 78). Mean PSA was 11.3 ng/ml (range 3.23 to 80.8). We decided the recurrence when PSA level exceeded 0.200 ng/ml or showing positive findings on imaging test or when the treating physician decided that it is a recurrence from other clinical data or symptoms and started treatment. Average observation period was 36.6 months (range 1 to 72). We checked medical records retrospectively.

Results: 52 patients (19.8%) had recurrence. 36 patients received initially salvage radiation therapy to the margin and pelvic lymph nodes. Among these 36 patients, 10 patients needed further treatment with anti-androgen drug or androgen deprivation therapy or both. All of these 10 patients were stage III. 8 patients were T3b and 2 patients were T3a. Among the rest of 26patients who only received salvage radiation therapy, 10 patients were T2, 11 patients were T3a and 5 patients were T3b. Prostate cancer-specific mortality was 0%.

Conclusion: Salvage radiation therapy might have larger impact on oncological outcome than extended pelvic lymph node dissection. But we need further observation.

UP-489

Prostatic Cancer Detected Incidentally by Transurethral Resection of the Prostate: Retrospective Study About 617 Patients

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Introduction and Objective: To evaluate the incidence of incidental prostate cancer detected incidentally by transurethral resection of the prostate and to determine any parameter that may predict its presence.

Materials and Methods: Between January 2011 and February 2019, 617 consecutive patients underwent transurethral resection of the prostate (TUR-P) for clinically diagnosed benign prostatic hyperplasia (BPH). Digital rectal examination provided no suspicion of prostatic cancer in all cases. Mean age was 67 +/- 10, 2 years. Mean PSA value was 3,8 +/- 2,1 ng/mL. All patients had previously undergone prostatic ultrasound. Ultrasound prostate volume was 67 +/- 42 cc. No patients underwent previous prostate biopsy. All patients underwent prostate transurethral resection. Pathological examinations of resected prostatic tissues revealed prostatic cancer in 14 (2,27%) of them. They were T1a and T1b in respectively 5 and 9 patients. Clinical features including age, serum prostate specific antigen (PSA) levels, prostatic volume and PSA density (PSAD) were compared between patients with prostatic cancer and those with BPH.

Results: PSA was not significantly different between cancer and BPH patients (p= 0,72). Mean PSA density in cancer patients was a bit higher than in patients with BPH but the difference was not significant (p= 0.1). The only tested parameter related to prostatic cancer was age, with a statistically significant difference (p= 0,0001). Postoperatively, radical prostatectomy was proposed for one patient and hormonal therapy was performed in 7 patients. The remaining 6 patients were followed with no specific treatment for prostatic cancer. Eight patients are still living and have shown no findings suggesting recurrence.

Conclusion: The incidence of incidental prostate cancer was low. PSA values and ultrasound were not good predictors of incidental cancer. Aged patients showed higher incidence of cancer. It seems of importance to explain preoperatively the possible detection of prostatic cancer in association with TUR-P, particularly for elderly patients aged 70 years or older.

UP-490

Abiraterone-Withdrawal-Syndrome: Rare Phenomenon or Therapeutic Tool?

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Introduction and Objectives: Prostate cancer is the most frequently diagnosed malignancy and the second leading cause of cancer specific death in aging male in the western world. The androgen deprivation therapy remains the standard of care for men with advanced prostate cancer. While the withdrawal-syndrome is well reported for all primary antiandrogens, it is a rarity in the therapy with Abiraterone.

Material and Methods: We report about two patients from our day-to-day praxis with a significant Abiraterone (AA) withdrawal syndrome and a PSA decrease of more than 80% and more than 50% respectively after cessation of AA and discuss the available literature respecting molecular mechanism and therapeutic consequences.

Conclusion: The definite mechanism remains unclear. Nevertheless, the syndrome arises at a low percentage of patients. If this circumstance is kept in mind and recognized at an early stage, it can be used as a therapeutic tool in tumour therapy.

UP-491

Association of Triglyceride Levels and the Aggressiveness of Prostate Cancer

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Introduction and objective: Prostate cancer (PC) is the most common non-skin malignancy and the third leading cause of cancer death in men in the United States and Europe. A diet rich in animal fats and proteins is an accepted risk factor for PC and other malignancies. The purpose of this work is to investigate the association between elevated serum triglyceride (TG) levels and the incidence of advanced prostate cancer as well as the aggressiveness of prostate cancer.

Materials and Methods: Inclusion of a total of 767 consecutive patients undergoing radical prostatectomy for prostate cancer between February 2011 and October 2014. Measurement of serum triglyceride and serum fat levels. Correlation with prostate cancer specific data.

Results: The median age at surgery was 68 years (IQR: 62-73). A total of 549 (71.5%) patients underwent an open radical retropubic prostatectomy, whereas in 218 (28.5%) patients a robotic assisted laparoscopic prostatectomy was performed. The median preoperative TG level was 1.3 mmol / L (IQR 0.9-1.7 mmol / L); 194 (25.3%) patients had a hypertriglyceridemia (>1.7 mmol / L). Regarding the preoperative PSA value, there was a statistically significant difference between the groups (7.1 µg / l at normal TG level and 8.6 µg / l at elevated TG level, p <0.001). Increased preoperative TG values were related to the aggressiveness of prostate cancer: they were statistically significant with a higher tumor stage (pT3) (p <0.001), lymph node metastasis (pN +) (p= 0.001) and a Gleason score (7b) (p <0.001). Elevated serum TG levels also showed a significant association with elevated serum cholesterol levels (p <0.001). In the multivariate analysis, after adjustment for the factors age, PSA, BMI and cholesterol, the factor hypertriglyceridemia could not be identified as an independent predictor of the occurrence of high-risk prostate cancer.

Conclusion: Increased preoperative TG values showed a correlation with an aggressive of prostate cancer. Increased preoperative TG levels are also associated with elevated serum cholesterol levels and could not be confirmed as independent predictors of high-risk prostate cancer.

UP-492

Patients at High Risk of Locally Advanced / Aggressive Prostate Cancer Have Significantly Lower Free and Bioavailable Testosterone Serum Levels and Appear to Have a Higher Recurrence Rate at Follow-Up

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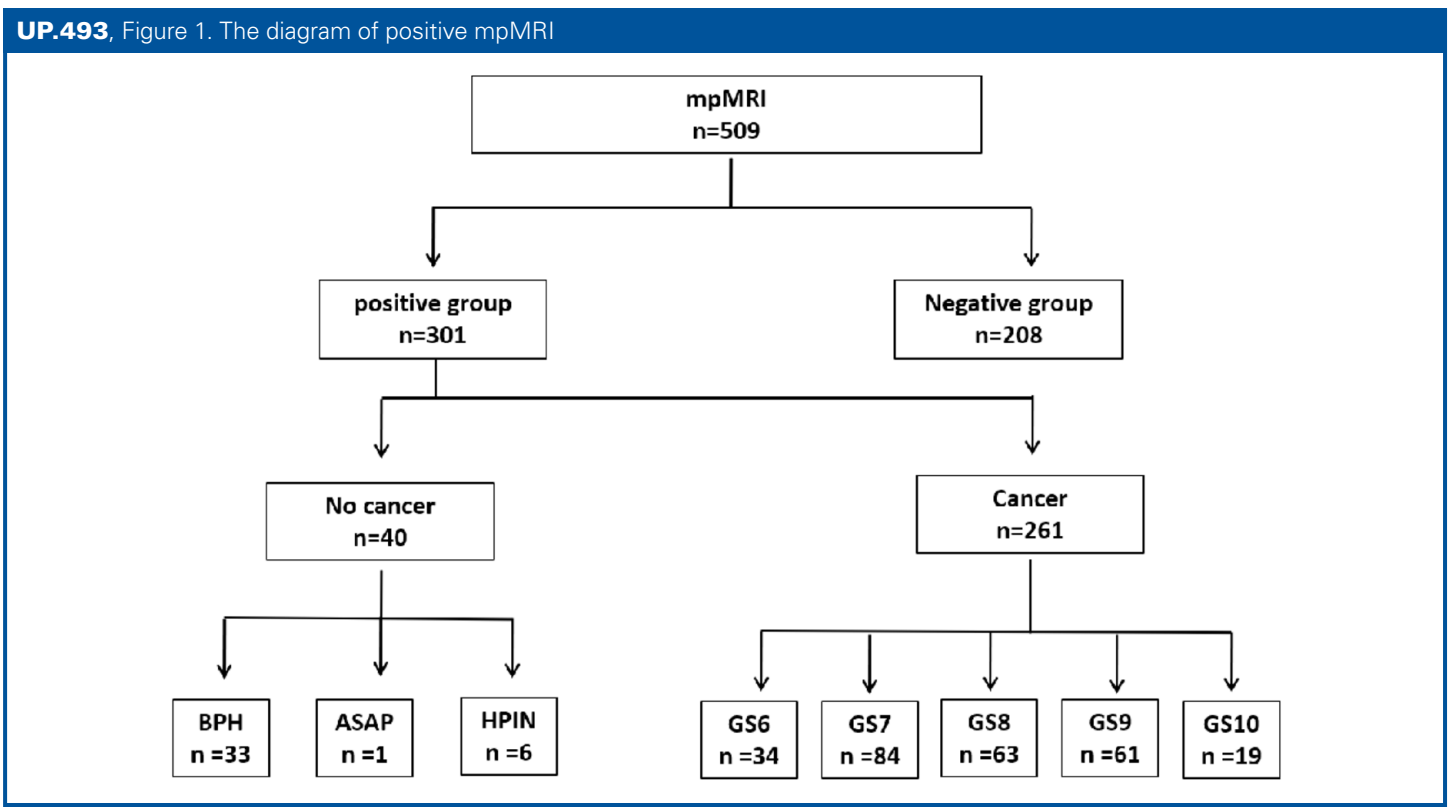
Introduction and Objective: The aim of this prospective study was to evaluate an association of sex hormone serum levels with the risk of advanced or aggressive biological tumor growth / recurrence in patients with clinically localized prostate cancer.

Material and Methods: In 1006 patients who underwent radical prostatectomy during the period between September 2010 and December 2018, preoperative total testosterone (gT), free testosterone (fT), bioavailable testosterone (bT), and sex hormone binding globulin (SHBG) as well as estradiol (E2) in serum has been measured. The results were set in relation to the preoperative risk classification according to D'Amico: low risk (n= 143), PSA <10 ng / dL, digital rectal examination (DRU)T2a, Gleason score (GS) 6; intermediate risk (n= 242), PSA 10-20 ng / dL, DRU= T2b and GS= 7; high risk (n= 124), PSA >20 ng / dL, DRU T2c or GS 8. Additional follow-up data for the patients recorded in the period in between 2010-2016 has been evaluated.

Results: With increasing risk classification according to D'Amico, patients had significantly lower fT values (low risk 0.065 ±0.060 µg / L vs. intermediate risk 0.061 ±0.020 µg / L vs. high risk 0.056 ±0.072 µ g / L, p = 0.018) and bT values (low risk 1.558 ±0.822 µ g / L vs. intermediate risk 1.450 ± 0.473 µg / L vs. high risk 1.325 ± 0.507 µg / L, p= 0.016). In contrast, there was no significant association of preoperative gT values (p= 0.074), serum SHGB levels (p= 0.203) and E2 serum levels (p= 0.292) for risk classification according to D'Amico. In addition, there is a strong trend toward a higher biochemical recurrence rate with low serum testosterone levels and high risk constellation (p= 0.05).

Conclusion: The present study shows that patients with clinically localized prostate cancer and high risk for advanced or aggressive tumor growth have significantly lower free and bioavailable serum testosterone levels. In addition, this group is probably also associated with a higher recurrence rate.

UP.493, Figure 1. The diagram of positive mpMRI



UP-493

Role of the Prebiopsy Multiparametric MRI in the Detection of Prostate Cancer

Shin TJ, Jung W, Ha JY, Kim BH, Park CH, Kim CI, Kim SH

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Introduction and Objective: To evaluate the diagnosis accuracy of prebiopsy multiparametric magnetic resonance imaging (mpMRI) to rule out clinically significant prostate cancer (CSPCa) on prostate biopsy.

Materials and Methods: We retrospectively analyzed all patients who underwent prebiopsy prostate mpMRI for suspicion of prostate cancer from January 2016 to June 2018. The positive mpMRI was defined as Prostate Imaging Reporting and Data System version 2 (PI-RADSv2) 3. CSPCa defined as a Gleason score 3+4. Diagnostic accuracy of mpMRI measured by sensitivity, specificity, positive predictive value (PPV) and negative predictive volume (NPV) for CSPCa.

Results: Overall, 509 patients who underwent prebiopsy prostate mpMRI between January 2016 and June 2018. A positive mpMRI scan was recorded for 301 men (59%). Of these, 227 (87%) men were found to have CSPCa on biopsy (figure 1). A negative mpMRI scan was recorded for 208 men (41%). Of these, 26 (13%) were found to have CSPCa on biopsy. For CSPCa, mpMRI showed a sensitivity of 89.7% (95% CI 82% to 92%), Specificity of 71.0% (95% CI 62% to 79%), Accuracy of .80.4% (95% CI 72% to 85%), PPV of 75.4% (95% CI 72% to 82%) and NPV of 87.5% (95% CI 82% to 92%).

Conclusion: Despite poor specificity, radiographic evidence of CSPCa on mpMRI consistently predicted pathologic findings on biopsy with high degree of sensitivity 89.7%. Thus, our study shows the importance of positive mpMRI findings as an initial diagnostic pathway in patients with suspicion for prostate cancer.

UP-494

The Characteristics of Prostate Cancer with a False-Negative Multiparametric MRI

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Introduction and Objective: Despite advancements in radiological imaging of the prostate with multiparametric magnetic resonance imaging (mpMRI), clinically significant prostate cancer (CSPCa) can still be missed.

Materials and Methods: We retrospectively analyzed all patients who underwent prostate mpMRI for suspicion of prostate cancer from January 2016 to June 2018. Negative mpMRI was defined as Prostate Imaging Reporting and Data System version 2 (PI-RADSv2) <3. CSPCa defined as a Gleason score 3+4. We analyzed the final pathologic finding in men with negative mpMRI but positive findings of prostate adenocarcinoma after prostatectomy.

Results: Overall, 509 patients underwent prostate mpMRI between January 2016 and June 2018. 208/509 (41%) patients had negative mpMRI. 75/208 (36%) patients had prostate cancer (figure 1) The treatment methods of these men follow as; active surveillance (AS) in 31 cases, robot assisted prostatectomy in 24 cases, retropubic prostatectomy in 1 case, radiation in 1 case, androgen deprivation therapy in 1 case. The mean age (range) was 68.6 (61 - 76) years, median PSA was 7.1 (3.4 – 16.4) ng/mL, median PSA density was 0.19 (0.05- 0.42) ng/mL^2 in 25 patients who had a prostatectomy (RALP in 24, RRP in 1). On final surgical pathology, 19/25 (76%) men had prostate cancer of Gleason 7 or greater (Gleason 7 (3+4) : 12, Gleason 7 (4+3) : 5, Gleason 8 (4+4) : 2). Five men (20%) upgraded on surgical pathology from prostate biopsy pathology, and 5 men had extra prostatic extension including 1 who had seminal vesicle extension.

Conclusion: 76% of men with prostate cancer diagnosis and negative mpMRI had clinically significant prostate cancer on final surgical pathology. Thus, our study shows the importance of a prostate biopsy despite negative mpMRI findings in patients with suspicion for prostate cancer.

UP-495

The Significance of a Visible Tumor on Magnetic Resonance Imaging in Pathologic Stage T2 Prostate Cancer

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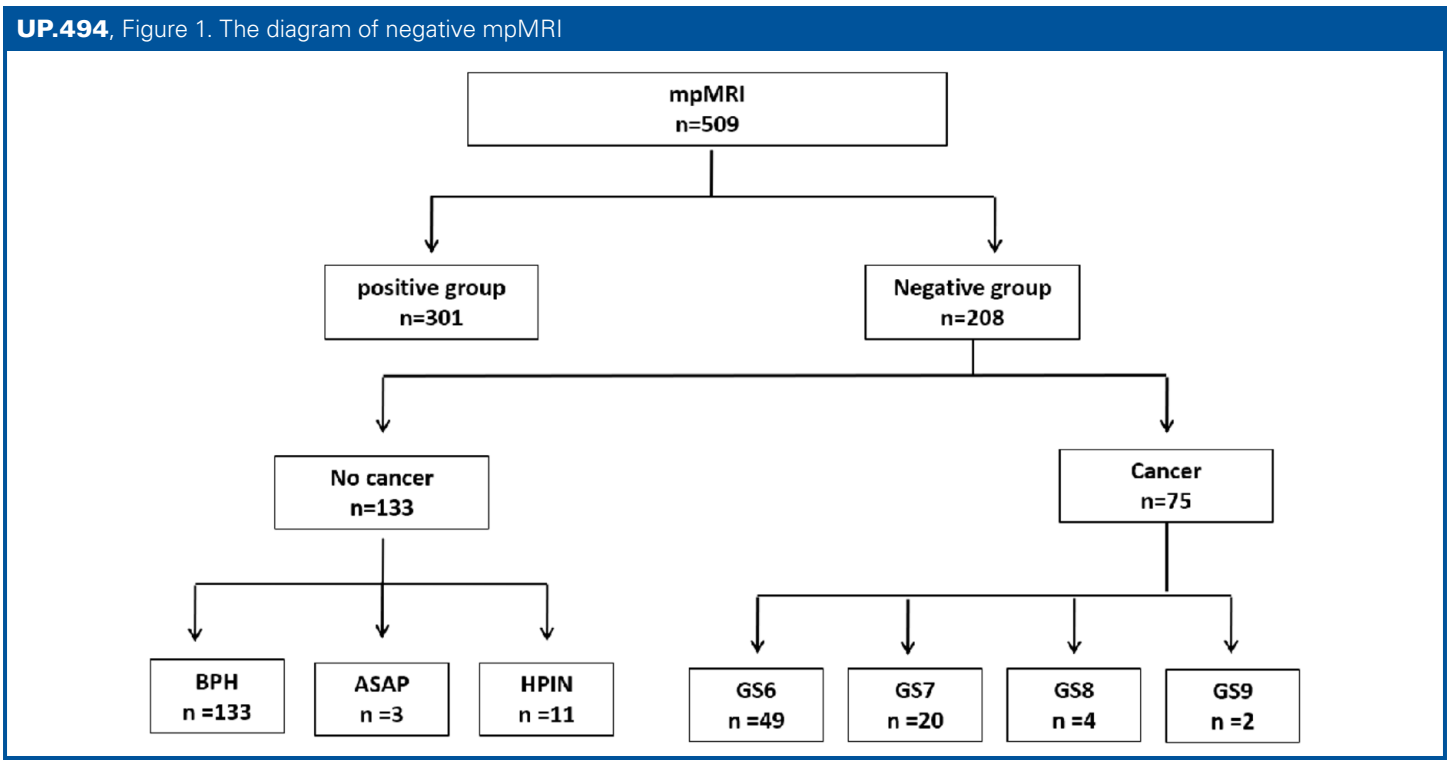
Introduction and Objective: We analyzed the significance and prognosis of tumor detected by preoperative magnetic resonance imaging (MRI) in patients with pT2 prostate cancer who underwent radical prostatectomy.

Materials and Methods: We reviewed 214 patients with pT2N0M0 prostate cancer who underwent radical prostatectomy between 2009 and 2016. All the patients performed MRI preoperatively. The patients were divided into 2 groups postoperatively: no visible tumor on MRI group (n= 96, 44.9%) and visible tumor on MRI group (n= 118, 55.1%). Age, prostate-specific antigen (PSA), prostate volume, positive surgical margin, lymphovascular invasion and biochemical recurrence (BCR) were compared between the 2 groups. As well we assessed the relationship between visible tumor on MRI and oncologic characteristics.

UP.494, Figure 1. The diagram of negative mpMRI



Results: Visible tumor on MRI group showed more Gleason score 7 (89.8% vs. 75.0%), more postoperative positive surgical margin (28.8% vs. 16.7%), and higher BCR rate (17.8% vs. 7.3%) than no visible tumor on MRI group. The Kaplan-Meier analysis for BCR free survival also showed significant difference (p= 0.006). In multivariate Cox regression analysis, the detection of tumor on MRI was associated with a higher BCR risk (HR: 3.35; 95% CI, 1.36-8.27; p= 0.009). For Gleason score, we found a positive association between visible tumor on MRI and intermediate grade (OR: 2.62; 95% CI, 1.20-5.73; p= 0.016) and high grade prostate cancer (OR: 3.90; 95% CI, 1.29-11.30; p= 0.016).

Conclusion: In pT2N0M0 prostate cancer, BCR was significantly more frequent when tumor was detected on MRI, and visible tumor on MRI was associated with Gleason score. Therefore, attention should be paid to the possibility of high grade prostate cancer when tumor was detected on MRI radical prostatectomy, and active follow-up is needed after surgery.

UP-496

Does High Ejaculation Frequency Increase the Risk of Prostate Cancer, as has Been Observed for BPH/LUTS?

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Introduction and Objective: Ejaculation frequency, including sexual intercourse, nocturnal emissions, and masturbation, affect the development of prostate diseases, such as benign prostatic hyperplasia (BPH)/lower urinary tract symptoms (LUTS), and cancer. We previously reported that ejaculation frequency was related to a decreased risk of BPH/LUTS. In this prospective study, we investigated the association between ejaculation frequency and risk of prostate cancer.

Materials and Methods: Between May 2015 and September 2016, a total of 304 men (154 in our health examination center, 150 in our urology outpatient department) participated in this study. The monthly ejaculation frequency, overall sexual satisfaction, and other determinants of sexual function including alcohol consumption, smoking, body mass index, and history of sexually transmitted infections were assessed using a self-administered questionnaire. Ejaculation frequency was assessed by asking participants to report the average number of ejaculations they had per month. Prostate-specific antigen (PSA), prostate volume (PV) and International Prostate Symptom Score (IPSS) were also assessed in all participants. BPH/LUTS was defined as PV 25 gm, and IPSS 8. Prostate biopsy was performed on patients with PSA 4 ng/mL or those who had abnormal findings in the rectal examination or transrectal ultrasound.

Results: Of 304 patients, 140 were diagnosed with BPH/LUTS (Group I, mean age ± SD: 59.2 ± 4.1 years), 40 were diagnosed with prostate cancer (Group II, mean age ± SD: 57.6 ± 4.2 years) and 124 were in the healthy control group (Group III, mean age ± SD: 51.1 ± 9.4 years). Mean number of ejaculations per month was 4.8 ± 1.7. Ejaculation frequency was inversely associated with age, but positively associated with the degree of sexual satisfaction, history of sexually transmitted infection, and consumption of alcohol. After controlling for potential confounders, a higher monthly ejaculation frequency was associated with a statistically significantly decreased risk of prostate cancer and BPH/LUTS ($P = 0.002$, $P = 0.001$, respectively). The hazard ratios (95% CI) comparing > 6 ejaculations/month to < 6 ejaculations/month were 0.181 (0.072-0.481; P <0.0001) and 0.294 (0.127-0.672; P=0.0002) at ages 40-59 years.

Conclusion: Our findings suggest that ejaculation frequency is related to a decreased risk of BPH/LUTS as well as prostate cancer. These results may support a role for ejaculation frequency in the etiology of prostate cancer, as has been previously reported for BPH/LUTS.

UP-497

An Analysis of Complications of MR/US Fusion Guided Biopsies Followed by Systematic Biopsies

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Introduction and Objective: To assess the rates and types of complications in MR/US transrectal guided biopsies followed by a systematic 12 core biopsy.

Materials and methods: We evaluated a total of 506 patients who underwent transrectal 18-gauge needle prostate biopsy. All patients had systematic 12-core prostate biopsy with additional samples taken from MR suspicious lesions using MRI/US fusion guidance. Quinolones were the preferred prophylactic antibiotics, with Trimethoprim-Sulphametoxazole used in patients with Quinolone allergy. Anticoagulants were stopped at least a week before biopsy, in ambiguous cases, laboratory tests of parameters of hemocoagulation were done before biopsy. We only included the rates of infection, retention and severe hematuria, as symptoms like hemospermia are often inconsistently reported by patients and do not present a medical problem. All complications we graded using the Clavien-Dindo (CD) scale.

Results: A total of 506 patients were evaluated with an average age of 63 years (31 – 91), mean PSA of 8,28ng/mL (0,52 – 75,0). On average 2,7 (0-9) MR/US guided cores were performed prior to the 12-core systematic biopsy. We registered a total of 17 complications (3,36%), comprising 11 CD1, 5 CD2, and 1 CD4 grade complications. Complication rates and types of complications are presented in the table below.

Conclusion: Our analysis of MRI/US target biopsy followed by systematic 12 core biopsy show low overall complications rates. Most of the complications belong to Clavien-Dindo groups 1 or 2, severe complications are rare. Results are comparable to those in recent literature.

UP.497, Table 1.

	Overal		Infections		Urinary retention		Hematuria	
	No. of patients	rate	No. of patients	rate	No. of patients	rate	No. of patients	rate
Complications	17	3.36	7	1.38	6	1.18	4	0.79
CD 1	11	2.17	1	0.19	6	1.18	4	0.79
CD 2	5	0.99	5	0.99	0	0	0	0
CD 3	0	0	0	0	0	0	0	0
CD4	1	0.19	1	0.19	0	0	0	0
CD 5	0	0	0	0	0	0	0	0

UP-498

Predictors for Biochemical Failure in Patients with Positive Surgical Margin after RARP

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Introduction and Objective: Robotic-assisted radical prostatectomy (RARP) is known as same oncological safety procedure compared to radical prostatectomy. Patient with positive margin after operation has a higher risk of biochemical failure. However, the treatment after positive margin was still controversial. The aim of this study was to find out the risk of biochemical failure over patients with positive margin after operation.

Materials and Methods: We evaluated total 462 patients who received RARP at LinKou Chang Gung Memorial Hospital during 2006-2014 with 61 patients with positive margin and didn't receive any treatment before biochemical failure. 1 patient was excluded due to lost following up. COX regression analysis and Kaplan-Meier Curve were used to compared between patient with biochemical failure (n= 19) and without biochemical failure (n= 41).

Results: Overall 13.2% of patients had positive margin with 31.7% turned out to be biochemical failure (BCF). The mean followed up months was 43.66 months (42.42 vs. 46.35(BCF), p= 0.51). In multivariable analysis, platelet and lymphocyte ratio (PL ratio) (6.26 vs. 8.02 (BCF), p= 0.001) showed statistically significant. And, if we separated the patients to two group by pathology grading group <2 and >3 (p= 0.001), it also showed statistically significant. Kaplan-Meier Curve was also used to analyze when PL ratio <=9 or >9 and it showed p value = 0.017.

Conclusion: If patients who received RARP with positive margin had PL ratio >9 by pre-operation lab data and pathology grading group >3, we strongly suggested early intervention should be applied over these patients.

UP-499

Can Natural Killer Cell Activity Help Screen Patients Requiring a Biopsy for the Diagnosis of Prostate Cancer?

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Introduction and Objective: To evaluate the usefulness of natural killer cell activity (NKA) in diagnosing prostate cancer (PC).

Materials and Methods: The medical records of patients who underwent transrectal prostate biopsy (TRBx) in Korea University Ansan Hospital from May 2017 to December 2017 were retrospectively reviewed. Patients with other malignancies, chronic inflammatory conditions high prostate-specific antigen (PSA) level >20, or history of taking 5-alpha-reductase inhibitor or testosterone replacement therapy were excluded.

Results: A total of 102 patients who underwent TRBx for PC diagnosis were enrolled in this study. Among them, 50 were diagnosed with PC. Significant differences in age and NKA level were observed between the tumor and no tumor groups. Receiver operating characteristic (ROC) curve analysis showed that the optimal cut-off of NKA level for the prediction of PC was 500 with sensitivity of 68.0% and specificity of 73.1%. In addition, NKA level (0.630) has the greatest area under the ROC curve compared to the ratio of total PSA to free PSA (0.597) and PSA density (0.578).

Conclusion: This pilot study revealed that low NKA and high PSA levels were likely to have a positive outcome for TRBx. The detection of NKA was easy and improved the diagnostic accuracy of PC.

UP-500

Local and Systemic Morbidity of De Novo Metastatic Prostate Cancer: More Prevalent, Acute and Debilitating than We Thought

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Introduction and Objective: The incidence of de novo metastatic prostate cancer (mPCa) still accounts for 15% to 20% of all prostate cancers (PCa) in Asia, with significant debilitating local and systemic complications. The objective of this study is to evaluate local and systemic complications arising from mPCA.

Materials and Methods: This is an IRB-approved retrospective study of a large cohort of patients presented with de novo mPCa from a large prospectively maintained prostate cancer database. 685 consecutive patients over a 20 years period (1995 – 2014) were included. Variables associated with complications of prostate cancer and treatment outcomes were analyzed.

Results: Median age of diagnosis was 73 years old. Bone involvement (85.4%) was the commonest site of distal metastasis. 435 (63.5%) patients had high volume bone metastasis (>4 bone metastasis) and 77 (11.2%) patients had visceral involvement. 612 (89.3%) patients were symptomatic, with bone pain (81.2%) and urinary obstruction (42.3%) being the commonest presentations. 237 (34.6%) patients required local palliative treatments (TURP - 88.2%; PCN - 7.6%; TURBNI - 2.6%; DJ - stent insertion 1.7%) at a median time of 7 months from initial diagnosis. Of these, 88 (12.8%) required immediate surgical treatment to relieve urinary obstruction while another 23 patients (9.7%) required repetitive local palliative treatments. Prostate volume >50 g (p= 0.08, OR 6.11 95% CI 4.2 – 28.26) is an independent predictor of significant obstruction requiring palliative procedures. 56 (8.2%) patients had skeletal-related events (SRE) at a median time of 15 months from initial diagnosis, with vertebrae (23 patients, 41.1%) and hip fractures (15 patients; 26.8%) being the commonest. The disease volume of bone metastasis and hormonal therapy were not significantly associated with increased risks of SREs. Interim 5 yearly analyses reported improved compliance to hormonal therapy, with medical castration gradually replacing surgical orchidectomy (p <0.01). The median time to hormonal refractory is 21.4 months, with median overall survival of 44.0 months. 597 (91.2%) patients had died, with 486 (81.4%) deaths attributed to disease progression.

Conclusion: Morbidities and complications arising from metastatic prostate cancer are more common and debilitating than we thought. Patients often require immediate palliative treatments, while many necessitate repeated interventions as disease progresses.

UP.499, Table 1. Sensitivity, NK cell-cut-off, specificity for the NKcell.

		Sensitivity (95% CI)	Specificity (95% CI)	Positive predictive value	Negative predictive value
All patients	NK <200	36.0% (22.9-50.8)	76.9% (63.2-87.5)	60.0% (40.6-77.3)	55.6% (43.3-67.4)
	NK <500	68.0% (53.3-80.5)	73.1% (59.0-84.4)	70.8% (55.8-83.2)	70.4% (56.4-82.0)
	NK <1000	76.0% (61.8-86.9)	46.2% (28.7-56.8)	55.9% (44.7-69.8)	64.7% (49.1-81.5)
PSA <10	NK <200	42.1% (26.3-59.2)	75.0% (58.8-87.3)	61.5% (40.1-80.1)	57.7% (43.2-71.3)
	NK <500	68.4% (51.3-82.5)	70.0% (53.5-83.4)	68.4% (51.1-82.7)	70.0% (53.5-83.4)
	NK <1000	79.0% (62.7-90.4)	40.0% (24.9-56.7)	55.6% (41.4-69.1)	66.7% (44.2-84.8)
PSA ≥10	NK <200	16.7% (2.1-48.4)	83.3% (51.6-97.9)	50.0% (6.7-93.2)	50.0% (26.6-73.4)
	NK <500	66.7% (34.9-90.1)	83.3% (51.6-97.9)	80.0% (44.5-97.5)	71.4% (40.7-92.2)
	NK <1000	66.7% (34.9-97.9)	33.3% (9.9-65.1)	57.1% (24.7-75.4)	60.0% (13.9-86.1)

UP-501

Comparative Study of Surgical and Medical Castration in Treatment Efficacy, Adverse Effects and Cost Based on a Large Prospective Metastatic Prostate Cancer Registry

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Introduction and Objective: The objective of this comparative study is to evaluate the efficacy, oncological outcomes and adverse effect profiles of medical versus surgical castration patients.

Materials and Methods: This is an IRB-approved retrospective study of a large cohort of consecutive patients (n=523) presented with de novo mPCa from a prospectively maintained prostate cancer database over a 15 years period (2001 – 2015). Four adverse effect outcomes were measured: change in haemoglobin, new onset or control of Diabetes mellitus (DM), coronary artery events (CAD) and skeletal-related events (SKE).

Results: 151 (28.9%) patients received surgical orchidectomy while 372 (71.1%) patients had medical castration, with an obvious shift from surgical to medical castration within interim 5 yearly analyses (p<0.01). Patients who required palliative procedures were more likely to undergo surgical orchidectomy (p<0.01). Median change in haemoglobin was -0.9 (-2.2 – 0.3). 17 (3.3%) patients had newly diagnosed DM, with median increment in HbA1c of 0.24 (-0.53 – 1.40). 63 (12.0%) patients had CAD, with a median time of 25 months (15.0 – 42.5) while 41 (7.8%) patients had SKE, with a median time of 13.7 months (3.5 – 23.5). There was no statistical significance between surgical or medical castration for the four adverse effect profiles; change in Haemoglobin (-0.75 vs -1.0, p: 0.302), newly diagnosed DM (4.6 vs 2.9%, p: 0.281), change in HbA1c (0.2 vs 0.25%, p= 0.769), CAD events (6.6 vs 8.7%, p: 0.746) and SKE (9.3 vs

7.3%, p: 0.476). Similar oncological outcomes were observed in both hormonal therapies. The proportion of PSA response (PSA <1) was 69.5% for surgical castration and 64.5% for medical castration (p= 0.195), affected only by initial PSA level (p= 0.02) and high-volume bone disease (p= 0.019). Time to castrate resistance was similar (18 vs 16 months, p= 0.097), with comparative overall survival (42 vs 38.5 months, p= 0.058) and prostate cancer mortality (80.1 vs 75.9%, p= 0.328). In terms of economics, the mean cost of surgical orchidectomy was $2783, compared to medical castration of $6279.

Conclusion: Surgical orchidectomy performed favourably compared to medical castration in terms of treatment efficacy with comparable adverse effects, but at significantly lower overall cost.

UP-502

Clinical Study of Prostate Cancers with a Prostate-Specific Antigen Level of more than 1000 ng/mL at Diagnosis.

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Introduction and Objective: High prostate-specific antigen (PSA) at diagnosis is associated with high tumor burden and worse outcomes in patients with prostate cancer. We report the results of a clinical study of patients with prostate cancer who had a PSA level of more than 1000 ng/mL at prostate cancer diagnosis.

Materials and Methods: Between January 2001 and February 2018, a total of 53 patients (PSA> 1000 ng/mL) were newly diagnosed prostatic cancer and treated with androgen deprivation therapy at our hospital. Descriptive analysis was performed to capture clinical characteristics, treatment selection and response, and outcomes in this cohort.

Results: The median age and PSA at diagnosis were 73 (55-86) and 2160 ng/mL (1025-19000). Most of the patients (79.2%) had symptoms due to prostate cancer. A high Gleason score (8) and distant metastases were identified in 83.5% and 96.2% (bone 42, extra-regional lymph node 21, lung 6, liver 1) of the patients, respectively. All the patients were treated with androgen deprivation therapy. However, 5-year PSA failure-free survival and 5-year overall survival were 22.8% and 43.3%, respectively. Multivariate analysis showed nadir PSA level (10 mg/mL) time to PSA nadir <6 months and high Gleason score (9 or 10) independently predicted shorter overall survival.

Conclusion: Many patients had PSA failure and their prognosis was poor. Nevertheless, long-term survival rate was achieved in some patients. We need to ascertain the precise prognostic marker to androgen deprivation therapy.

UP-503

Oncological Outcome After Radical Prostatectomy Without Pelvic Lymph Node Dissection for Localized Prostate Cancer; A Long-Term Follow-up Results in a Single Institution

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Introduction and Objective: Clinical guidelines recommend extended pelvic lymph node dissection (PLND) during radical prostatectomy (RP) for localized prostate cancer. PLND is necessary for accurate staging. However, oncological benefit of PLND is questionable, because the data of clinical outcome of RP without PLND is lacking. We present the oncological outcome of RP without PLND in men with localized prostate cancer.

Materials and Methods: We retrospectively reviewed consecutive 146 patients who had received open retropubic RP in our hospital between November 2004 and December 2011. D'Amico's classification was used for risk group determination. Neoadjuvant androgen deprivation therapy was performed in men with <50% of probability of organ confined disease on the nomogram for Japanese patients. Adjuvant therapy was not performed in all patients. Biochemical recurrence (BCR) was defined as two consecutive rising PSA values >0.2 ng/mL.

Results: Of 146 patients, 39, 59, 48 were classified as the low, intermediate (IM), and high (H) risk, respectively. Neoadjuvant ADT was performed in 11 (28%), 20 (34%), 35 (73%) patients in the low, IM, and H risk group, respectively. Fifty-five (38%) patients were estimated 5% of probability of lymph node involvement (LNI) on the preoperative nomogram. With the median follow-up of 78.5 months, BCR was observed in 39 patients (low: 3 IM: 16 H: 20). BCR free survival was significant shorter in IM (HR= 3.51; 95% CI= 1.01-12.1; P= 0.048) and Hi (HR= 6.04; 95% CI= 1.78-20.5; P= 0.004) risk group than low risk group. Similarly, patients with <5% of probability of LNI had significantly higher BCR than patients with <5% of probability of LNI (HR= 3.05; 95% CI= 1.53-6.06; P= 0.002). Of patients with BCR, 33 underwent salvage treatments, either radiation or ADT at the median PSA level of 0.81 ng/mL without detectable lesion in imaging studies. A total of 7 patients died, only one patient whose PSA levels did not decrease 0.2 ng/mL even once after RP died of prostate cancer during follow-up periods. There was no difference in overall survival between risk groups or probability of LNI (<5% or 5%).

Conclusion: Our study demonstrated that RP without PLND achieved favorable oncological outcome, in terms of cancer specific and overall survivals, and the significance of PLND during RP should be re-evaluated.

UP-504

Prognostic Value of KI-67 and E-cadherin Expression in Tumor Cells of Patients with Prostate Cancer

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Introduction and Objective: Just according to clinical and pathological characteristics does not allow one to estimate definitely the prognosis of the prostate cancer (PC) course, and to prescribe an adequate treatment. The study aimed at the immunohistochemical investigation of the expression of markers of proliferation (Ki-67) and intercellular adhesion (E-cadherin) in PC cells and to evaluate their clinical significance.

Materials and methods: Retrospective analysis of the results of examination, treatment and survival of 125 patients with PC of II-III stage. Investigation was performed on paraffin sections of the PC samples by means of immunohistochemical method and the H-Score calculation. Results were analyzed by STATISTICA 6.0, correlation analysis by Pearson correlation coefficient.

Results: Analysis results proved the heterogeneity of PC by expressing of the investigated markers. High level of KI-67 expression was determined in 38 (30.4%) PC samples; moderate and low expression – in 60 (48.0%) and 27 (21.6%) tumors, correspondently. Frequency of tumors with a positive response to E-cadherin in the general group of patients with PC was 64 (59.2%), among them 16 (25.0%), 30 (46.9%) and 18 (28.1%) samples had a low, moderate and high level of the examined marker, correspondently. The number of tumors with moderate and high levels of proliferating cells antigen was higher (86.0%) in patients with PC III stage compared with patients with PC II stage (73.3%) (r = 0.44). Number of PC cases with moderate and high expression of E-cadherin was significantly lower (p <0.05) in the group of patients with PC III stage (r= -0.59). Positive tendency was observed for a decrease in the relative number of tumors with low expression of Ki-67 (from 35.7% to 0%, respectively) and an increase in the incidence of PC with moderate and high expression of antigen (from 64.3% to 89.5%, respectively) with Glisson score rise (r= 0.39). It has been established that recurrence of PC is associated with an increase in the incidence of tumors with moderate and high expression of Ki-67 and decrease in the number of tumors, positive for E-cadherin (r= 0.62 and -0.58 correspondently).

Conclusion: Investigation of Ki-67 and E-cadherin expression in PC cells is valuable for prediction of the course of the disease and the development of a personalized treatment tactic.

UP-505

The Effect of Steep Trendelenburg Positioning on Retinal Structure and Function During Robot-Assisted Laparoscopic Radical Prostatectomy

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Introduction and Objective: Robot-assisted laparoscopic radical prostatectomy (RALP) has become a standard treatment choice for localized prostate cancer. RALP requires a steep Trendelenburg position, which leads to a significant increase in intraocular pressure (IOP). This study evaluated the effect on the retinal structure and function in patients undergoing RALP.

Materials and Methods: Between March and September of 2016 at Kagawa University Hospital, we enrolled a total of 24 consecutive male patients who underwent the RALP procedure. Standard automated perimetry (SAP) and optical coherence tomography (OCT) were performed in 20 males scheduled for RALP at 1 month and 1 day before the operation and at 1 and 3 months after the operation. IOP measurements were made in the supine position at 5 min after intubation under systemic anesthesia (T1), at 6 discrete time points (5, 30, 60, 120, 180 and 240 min; T2-7), and at 5 min after returning to a horizontal supine position (T8). The Guided Progression Analysis software program was used to assess serial retinal nerve fiber layer (RNFL) thicknesses and visual field progression.

Results: Average IOP (mmHg) for each time point was as follows: T1=12.3 ± 2.6, T2=20.4 ± 4.2, T3=23.3 ± 3.8, T4=24.0 ± 3.2, T5= 24.3 ± 3.4, T6=27.1 ± 7.2, T7=29.8 ± 8.7 and T8=20.1 ± 4.4. During RALP, IOP significantly increased. There was no progression of the visual field and RNFL thickness after surgery or any other ocular complications found.

Conclusion: Although IOP significantly increased during RALP, there were no significant changes in the retinal structure and function between the pre- and post-operation observations.

UP-506

Diagnostic Role of Magnetic Resonance Imaging-Targeted Biopsy for Prostate Cancer in Biopsy-Naïve Men: A Meta-Analysis

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Introduction and Objective: We aimed at investigating the diagnostic role of Magnetic Resonance Imaging (MRI)-targeted biopsy for prostate cancer (PCa) in biopsy-naïve men.

Materials and Methods: Own control studies and randomized controlled studies (RCTs) published up to December 2018 were searched via a systematic search of PubMed (Medline), Embase, Ovid and the Cochrane Library. We calculated relative sensitivity (or risk ratio, RR) to compare diagnostic efficiency for PCa and clinically significant PCa (csPCa) between MRI-targeted biopsy and systematic biopsy. Independent role of either biopsy pathway was identified for participants of positive/negative MRI.

Results: Thirty-one studies consisting of 25 own control studies and six RCTs were included. We identified 4020 biopsy-naïve patients of positive MRI who underwent two biopsies concurrently, with PCa/csPCa prevalence of 65.90% and 45.13%, respectively. MRI-targeted and systematic biopsy did not differ in the detection of any PCa (RR 0.98, 95% CI 0.92-1.05). However, MRI-targeted biopsy detected more csPCa (RR 1.19, 95% CI 1.10-1.30) and more PCa of Gleason Score 3+4 (RR 1.20, 95% CI 1.07-1.34). Using combined test as a reference, omitting systematic biopsy resulted in detecting 12.81% less csPCa and 20.76% less in-csPCa, and omitting MRI-targeted biopsy resulted in detecting 25.69% less csPCa but 10.8% more clinically insignificant PCa (in-csPCa). For patients of negative MRI, not performing a systematic biopsy led to underdetection of 30.29% of any PCa (10.9% of csPCa). Limitations mainly included heterogeneity in our pooled analysis.

Conclusion: Combining MRI-targeted biopsy and systematic biopsy increased the diagnostic yield of PCa for biopsy-naïve patients of positive MRI. And omitting systematic biopsy for patients of negative MRI would have led to underdetection of 10.9% of csPCa (approximately 1 in 10).

UP-507

Transperineal magnetic resonance imaging-targeted biopsy may perform better than transrectal route in the detection of prostate cancer? A systematic review and meta-analysis

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Introduction and Objective: The diagnostic accuracy of magnetic resonance imaging (MRI)-targeted biopsy by using transperineal (TP) versus transrectal (TR) route in the detection of prostate cancer (PCa) has yet to be revealed.

Materials and Methods: A systematic search in Pubmed, Embase, Ovid and the Cochrane Library up to January 2019 was conducted. We pooled odds ratio (OR) with 95% confidence intervals (CIs) for PCa detected by TP and TR MRI-targeted biopsy in patients of positive multiparametric MRI (mpMRI). The relative sensitivity (RR) between TP and TR route which adjusted for differences in cancer prevalence across studies were also calculated.

Results: Four studies recruiting 441 participants were included in our final analysis. A total of 328 patients with positive mpMRI underwent TP MRI-targeted biopsy and 315 patients underwent TR MRI-targeted biopsy. TP MRI-targeted biopsy detected more csPCa in patients of positive mpMRI with the detection rate of 62.2% (204/328) in comparison with that of 41.3% (130/315) for TR route (OR 2.37, 95% CI 1.71-3.26, I^2=38%). After adjusting for differences in cancer prevalence, TP MRI-targeted biopsy detected 92.8% (142/153) of csPCa compared with that of 74.1% (103/139) by using TR route (RR 1.24, 95% CI 1.12-1.38, I^2=32%). TR approach missed more clinically significant tumor located at anterior zone of the prostate (8 vs. 2; 12 vs. 1).

Conclusion: TP performed better than TR route in MRI-targeted biopsy, especially in detecting PCa located at anterior prostate. More large, prospective randomized studies comparing the two approaches should be performed in the future.

UP-508

The Prevalence of Lynch Syndrome in Patients with Primary Prostate Cancer

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Introduction and Objective: It still remains unclear whether prostate cancer (PC) is one of the Lynch syndrome (LS)-associated cancers. Loss of DNA mismatch repair (MMR) proteins, especially MSH2, has been reported to be frequently shown in high grade and/or advanced PCs. On the other hands, the incidence of germline mutations in MMR genes has been reported to be less than 1% in patients with PC, compared to 2-4% in patients with colorectal cancer. The exact prevalence of putative LS-associated PC has not been clarified. Here, we estimate the prevalence of putative LS-associated primary PC.

Materials and Methods: A total of 129 surgical specimens from radical prostatectomy performed at Toranomon Hospital between 2012 and 2015, were retrospectively tested immunohistochemically for the expression of the MMR proteins MLH1, PMS2, MSH2 and MSH6 as universal screening. For all suspected MMR-deficient patients, germline genetic tests focusing on MMR genes were carried out.

Results: Loss of MMR proteins were found in only one patient (0.8%) who showed dual loss of MSH2/MSH6. The patient showed a single nucleotide germline mutation from c.1129 C to T (p.Glc377*) at exon 7 in the MSH2 gene. He was diagnosed with primary PC at the age of 66. He had a documented history of LS (Muir-Torre syndrome) with prior colon cancer, sebaceous tumor and keratoacanthoma, and a subsequent bladder cancer, which all also showed dual loss of MSH2/MSH6. In addition, he had a strong family history of colorectal and other LS-associated cancers. The pathological stage was pT3aN0M0, and the pathological grade was Gleason 7(4+3) with tertiary pattern 5.

Conclusion: This is the first report that universally examined all four MMR proteins as immunohistochemical screening in primary PCs. PC has been suggested to be one of the LS-associated cancers. However, the prevalence of germline mutations of the MMR genes (LS) was lower than expected in patients with primary PC, compared with other LS-associated cancers.

UP-509

Follow MyPSA - An eHealth Technology for Prostate Cancer Patients Monitored by Active Surveillance

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Introduction and Objective: To develop an eHealth application for men on active surveillance (AS) for prostate cancer (PCa) and to provide them with the opportunity to monitor their disease, plan and manage appointments, and chat with their urologist. It is hypothesized that the use of such a tool will encourage active participation of patients and can have a positive effect on their quality of life (QoL). Furthermore, it can improve the quality of care as it can focus on patients' needs more specifically.

Materials and Methods: A two-phased implementation study. The first phase consists of the development and utility testing of the Follow MyPSA app. In the second phase of the study approximately 100 men currently on AS or newly diagnosed patients choosing AS in The Netherlands will be invited to participate in the study and use the Follow MyPSA app. At baseline, after 6, 9 and 12 months, men will complete the SF-12, the Memorial Anxiety Scale for Prostate Cancer (MAX-PC), the Patient Activation Measure (PAM), and knowledge questions (at baseline and after 12 months). Furthermore, focus groups with users of the Follow MyPSA app will be organized at 6 and 12-months to discuss the usability of the app and whether improvements to the app are necessary.

Results: Psychological symptoms will be assessed to determine their prevalence and severity over time. The results of the baseline measurement will be presented during the meeting. In a situation where low-risk PCa is becoming more of a chronic condition, we stimulate patients to become actively engaged in their disease process, which we hypothesize will lead to an increased sense of control and therewith a better QoL.

Conclusion: We predict that providing men with a low-cost, easy to use eHealth tool will allow them to engage in their disease process, leading to an increased sense of control and therewith better QoL, reducing any potential distress that may come from living with untreated PCa.

UP-510

Selection Criteria for Evaluation of Insignificant Prostate Cancer after Transperineal Template Mapping Biopsies

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Introduction and Objective: The objective of this study was to assess the utility of different clinic-pathological risk criteria to predict insignificant prostate cancer (PCa) in radical prostatectomy (RP) specimens.

UP.510, Table 1. The ability of the five criteria to predict insignificant prostate cancer in radical prostatectomy specimen.

	Specificity	Sensitivity	PPV	NPV	Accuracy
Klotz criteria	100%	8.6%	100%	17.5%	23.3%
Roemeling criteria	100%	13.9%	100%	18.4%	27.9%
Epstein criteria	97.2%	22.6%	87.5%	66.7%	86.1%
D'Amico criteria	100%	52.8%	100%	29.17%	60.47%
Simmons criteria	71.43%	86.1%	93.9%	50%	83.72%

UP.510, Table 2. Outcomes of area under the reciever operating characteristic analysis of the five analysed criteria.

	AUC	95% CI	p value
Klotz criteria	0.542	0.32-0.76	p=0.73
Roemeling criteria	0.569	0.36-0.78	p=0.36
Epstein criteria	0.629	0.37-0.89	P=0.29
D'Amico criteria	0.76	0.62-0.91	p=0.03
Simmons criteria	0.788	0.57-0.99	p=0.017

Materials and Methods: Men who underwent RP for clinical stage T2, PSA <20 ng/mL, Gleason score <8, PCa diagnosed by transperineal template mapping biopsy were included to this analysis. The performance of Klotz (cT1c-T2a, PSA 10 ng/mL for patients of age under 70 years and 15 ng/mL for patients over 70 years), Roemeling (cT1c, 15 ng/mL, Gleason 7), Epstein (cT1c, PSA density <0.15, Gleason 6, no more than two cores with cancer or cancer involving no more than 50% of any core), D'Amico (cT1c-T2a, PSA 10 ng/mL, Gleason 6) and Simmons (Gleason 6 and maximum cancer core length 3 mm) criteria to predict insignificant PCa upon RP defined as Gleason score6 and total tumor volume <2.5 mL were assessed.

Results: Between January 2016 and December 2018 at our department we identified 43 men who fulfilled the inclusion criteria. After RP 7 men had clinically insignificant PCa. Based on biopsy results 3 (7%) men fulfilled Epstein, 5 (11.62%) - Roemeling, 40 (93%) - Klotz, 24 (55.8%) - D'Amico and 10 (23.25%) - Simmons criteria. The ability of the five criteria to predict insignificant PCa in RP specimen was examined (see Table 1,2).

Conclusion: Simmons criteria showed a superior trade-off between sensitivity and specificity for clarifying insignificant PCa that can guide treatment and be used as the best reference test after transperineal prostate mapping biopsy.

UP-511

The Preoperative Neutrophil-to-Lymphocyte Ratio is not a Marker of Prostate Cancer Characteristics but is an Independent Predictor of Biochemical Recurrence in Patients Receiving Radical Prostatectomy

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Introduction and Objective: The neutrophil-to-lymphocyte ratio (NLR) has been reported to be a prognostic marker in prostate cancer. In this study, we assessed the association between preoperative NLR and the clinicopathological characteristics, biomolecular features and prognosis of patients with localized prostate cancer treated with radical prostatectomy.

Materials and Methods: A total of 994 subjects were retrospectively enrolled, and the histological specimens of 210 patients were retrieved for constructing a tissue microarray. Immunohistochemistry was then performed to assess the expression of AR, ERG, PTEN, p-AKT, Bcl-2, Beclin-1, Ki-67, CD3, CD4, CD8, IFN-γ and TNF-α.

Results: No significant differences in the NLR distributions among clinicopathological variables were observed ($P > 0.05$) when the original NLR data were utilized. When we dichotomized the NLR value into the high-NLR group (NLR < 2) and low-NLR group (NLR < 2), we found that the patients in the high-NLR group had more prostate capsule invasion ($P = 0.047$). Additionally, no significant correlation was found between the NLR and infiltrating CD3+ cells, the CD4/CD8 ratio, AR, ERG, PTEN, p-AKT, Bcl-2, Beclin-1, Ki-67, IFN-γ or TNF-α ($P > 0.05$). When we analyzed the data of patients without postoperative adjuvant hormone therapy or radiotherapy, univariate and multivariate survival analysis indicated that a high NLR was a predictor of better BCR-free survival ($P < 0.05$). When analyzing the entire cohort, univariate survival analysis showed that the high-NLR group had significantly poorer overall survival ($P < 0.05$).

Conclusion: NLR cannot reflect prostate cancer characteristics or the local immune microenvironment, but a high NLR can serve as an independent predictor of better BCR.

UP-512

MAGI2 Down-Regulation: A Potential Predictor of Tumor Progression and Early Recurrence in Han Chinese People with Prostate Cancer

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Introduction and Objective: Membrane-associated guanylate kinase (MAGUK) family protein MAGUK invert 2 (MAGI-2) has been demonstrated to be involved in the tumorigenic mechanism of prostate cancer via gene rearrangement. The objective of this study was to investigate the expression profile of MAGI-2 at mRNA and protein levels. The prognostic value of MAGI-2 in Han Chinese patients with prostate cancer was also investigated.

Materials and Methods: Expression data of MAGI-2 were assessed through database retrieval, analysis of sequencing data from our group and tissue immunohistochemistry using digital scoring system (H-score). The clinical and pathological data were collected. The sources of follow-up data were the medical record, the database named "PC-follow", and telephone calls to the patients or relatives. The expression of MAGI-2 expressions in prostate tumor tissues and prostate normal tissues were evaluated and compared. MAGI-2 expression was associated with clinical parameters including tumor stage, lymph node status, Gleason scores, PSA level and biochemical recurrence of prostate cancer.

Results: The relative expression of MAGI-2 mRNA was lower in the tumor tissue in the TCGA database and sequencing data ($p<0.001$). There is no difference in MAGI-2 protein expression between tumor and normal tissues in Tissue microarray (TMA) results. MAGI-2 expression was associated with pathological tumor stage ($p=0.02$), Gleason score ($p=0.05$) and pre-operation PSA ($p=0.04$). A positive correlation was identified between MAGI-2 and PTEN expressions through analysis of TCGA and TMA data ($p<0.001$). Patients with higher MAGI-2 expression had longer biochemical recurrence BCR-free survival in the univariate ($p=0.005$), which indicated indicates an optimal prognostic value of MAGI-2 in Han Chinese patients with prostate cancer.

Conclusion: MAGI2 expression gradually decreases with tumor progression and can be used as a predictor of tumor recurrence in Chinese patients.

UP-513

The Protective Effect of Lycopene on Prostate Growth Inhibitory Efficacy by Decreasing Insulin Growth Factor-1 in Indonesian Human Prostate Cancer Cells

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Introduction and Objective: Lycopene has been discussed as a potential effecter in the prevention and therapy of prostate cancer. It is red, lipophilic and naturally occurring in many fruits and vegetables, such as tomatoes. Several growth factors, including insulin-like growth factor 1 (IGF-1), play important roles in carcinogenesis and metastasis. The IGF-1 is mitogens that play important roles in the regulation of proliferation, differentiation, and apoptosis. Binding of IGF-1 to its cognate membrane receptor activates Ras/Raf/MAP kinase signaling pathways, which regulate cell-cycle progression, cell survival, and transformation. Lycopene has its protective effect, which affects multiple IGF-1 activated signaling pathways. Lycopene stimulates apoptosis through intrinsic pathways, by stimulating the pro-apoptotic factor of the mitochondrial cavity such as the Bax/Bak protein (an apoptotic promotor). Although tomatoes are widely consumed in Indonesia, there is no research study about effect of lycopene on prostate cancer in Indonesia. Hence, this study is conducted to measure the influence of lycopene on the level of insulin-like growth factor-1 (IGF-1) in Indonesian human prostate cancer cells.

Material and Methods: An experimental study was conducted on Indonesian human prostate cancer cell from a patient with Gleason score 6, divided into 5 groups: 2 control groups and 3 treatment groups that received 1 μM, 2 μM and 4 μM of lycopene respectively. Measurement of mean IGF-1 level was performed by ELISA. A comparative analysis was performed by two-ways ANOVA.

Results: The result showed that there was a significant difference of mean IGF-1 levels in the provision of various concentrations of lycopene and time of observation ($p<0.05$). Increased level of mean IGF-1 appeared on 2 μM dose of lycopene at 48 hours observation and began to decline in 72 hours observation. This happened also on 4 μM lycopene at 24 hours observation and began to decline in 48 hours observation ($p<0.05$).

Conclusion: Lycopene could be administered as an adjuvant therapy for prostate cancer patients to increase apoptosis, and eventually inhibit progressivity of cancer cells.

UP-514

Influence of the Prostate-Specific Antigen Change Rate on Prostate Cancer Detection Just Before a Prostate Biopsy

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Introduction and Objective: Patients are being introduced to our urology department with a high prostate-specific antigen (PSA) level at a medical checkup or inspection at a family doctor with increasing frequency. In our department, we re-examine the PSA level at the time of their visit to our hospital in principle. We examined the influence of the rate of change between the referral PSA level and the PSA level measured at our hospital on prostate cancer detection.

Materials and Methods: A total of 747 patients were introduced to our department and underwent a prostate biopsy due to a PSA high level from March 2014 to August 2018. In 391 of those 747 patients, the levels of the referral PSA and that measured at our hospital were confirmed. We examined the relationship between the detection rate of prostate cancer and the PSA change rate for these 391 patients.

Results: In 49 patients, the PSA level had dropped by 20%, and the detection rate of prostate cancer in those patients was 24.5% (12/49). There were 222 patients whose PSA change rate was within ±20%, and the detection rate of prostate cancer in those patients was 79.3% (176/222). There were 120 patients whose PSA level increased by 20%, and the detection rate of prostate cancer in those patients was 50.8% (61/120). The rate of prostate cancer detection in patients with a declining PSA trend was significantly lower than in those whose PSA level remained stable or increased. In addition, the rate of prostate cancer detection in the cases whose PSA level increased by 20% was also about 50%, which was slightly lower than assumed. This phenomenon may have been influenced by fluctuations in the PSA levels in large sized cases of benign prostatic hyperplasia or those with inflammation.

Conclusion: PSA levels measured in short intervals are predictive indicators of prostate cancer detection.

UP-515

Korean Clinical Practice Guideline for the Treatment of Prostate Cancer

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Introduction and Objective: The Korean urological association (KUA) organized the prostate cancer (Pca) clinical practice guideline (CPG) developing committee composed of experts in the field of oncology with the Korean Urological Oncology Society (KUOS). The purpose is to provide current and comprehensive recommendations for the medical and surgical treatment of Pca.

Materials and Methods: The committee comprised of 27 members determined to develop CPG with mainly adapting from existing guidelines. The CPG development committee consulted to experts for the search of data. The committee determined 22 key questions under the principle of PICO (population, intervention, comparison and outcome). A comprehensive literature review was carried out primarily from 2007 to 2016 using medical search engines including data from Korea. Ten committee members evaluated the quality of the selected guidelines for adaptation with K-AGREE II (the Korean Appraisal of Guidelines for Research & Evaluation II). The Delphi method was used to make consensus for recommendations through three rounds. A peer-review for the recommendations selected by consensus was done by review committee with an independent process.

Results: CPG draft was reviewed by expert peer reviewers and outside public hearings also discussed at an expert consensus meeting until final agreement was achieved. This CPG was certified by the KUA and KUOS and obtained the certification mark from the Clinical Practice Guideline Evaluation System of KAMS (Korean Academy of Medical Science). Table 1 shows the summary of recommendations in low-risk Pca.

Conclusion: This guideline was the first guideline for Pca that was certified by the KUA and KUOS and obtained the certification of KAMS in Korea.

UP-516

MRI Prostate and Trans-Perineal Template Prostate Biopsy: Is There Concordance?

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Introduction and Objective: Trans-perineal template prostate biopsy aids the diagnosis of prostate cancer. Pre-biopsy MRI prostate has now come into vogue. We have audited patients over one year to compare the accuracy as well as the site correlation between MRI prostate and the trans-perineal template prostate biopsy.

Materials and Methods: We retrospectively captured patient data over a 12 months period on 175 patients, who underwent Template biopsies. We compared the concordance between MRI and template biopsy.

Results: Almost 25% of the patients who had MRI prostate showed no concordance with template biopsy, i.e., MRI is positive for tumour and template biopsy is negative and vice versa. Although 40% of the patients were found to have tumours in both MRI and template biopsy, (Fig 1) only half of these patients showed site correlation with the MRI. About 30% were reported as Tx which on template biopsy revealed: 44% had no tumours, 48% had low and intermediate risk for aggressive tumours and 8% had significant risk for aggressive tumours. Only 5% of the patients showed true negative results, i.e., Negative MRI prostate confirmed by negative template biopsy. (Fig 2) MRI prostate showed sensitivity of 92.06%, specificity of 17.50%, PPV of 63.74% and NPV of 58.33%.

Conclusion: We found that the overall sensitivity of prostate MRI was high and as such, pre biopsy MRI/MRI fusion biopsies will significantly enhance prostate cancer diagnosis. However, based on the data from our study we would conclude that the Template Prostate Biopsy should at present be the gold standard for diagnosis.

UP-517

Upregulation of MAFG Promotes Prostate Cancer Malignant Progression Via S100A9

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Introduction and Objective: MAFG (v-Maf avian musculoaponeurotic fibrosarcoma oncogene homolog G) is a bZIP-type transcriptional regulator that belongs to the small MAF (sMAFs) protein family. It's a biological role and clinical significance that remains unknown in prostate cancer.

Materials and Methods: The pro-apoptotic, and anti-metastatic effects of MAFS in prostate cancer cells were investigated in both *in vitro* and *in vivo* studies. Short-hairpin RNA knockdown of the MAFG, pull-down and co-immunoprecipitation assays. Microarray was used to identify the downstream effector of MAFG in prostate cancer cells.

Results: In our study, the expression of MAFG in PCa cell lines DU145, LNCAP, PC3, and 22RV1 were detected with the highest expression in DU145 cell. MAFG expression in tumor specimens were higher than in paired paracancerous normal tissue. High expression of MAFG was associated with shorter recurrence free survival. In vitro experiments show that MAFG knockdown inhibited cell proliferation, migration and invasion. In vivo analysis suggested that MAFG contributed to tumor formation and metastasis. Furthermore, S100A9 might be involved in MAFG mediated disease progression in PCa.

Conclusion: Overall, these findings identify MAFG as a novel biomarker which may accurately predict disease progression in PCa patients.

UP-518

Using Age/BMI-adjusted PSA and BMI-adjusted PSA to Predict Prostate Biopsy Pathologic Outcomes

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Introduction and Objective: Prostate-specific antigen (PSA) is a standard tool for prostate cancer screening but has been challenged due to the potential consequence of over-diagnosis and subsequent over-treatment. We sought to evaluate body mass index (BMI) to adjust PSA level in order to predict prostate biopsy pathologic outcomes in both Chinese and US populations more precisely.

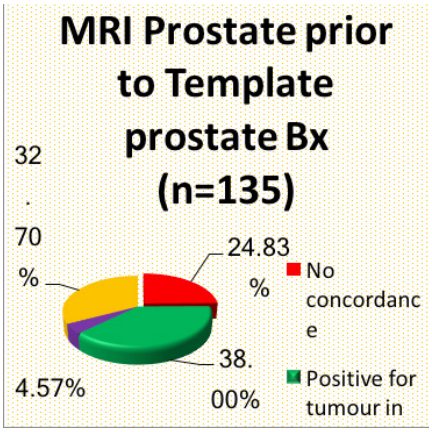
Materials and Methods: We identified 884 total patients who underwent initial biopsy at either Huashan Hospital of Fudan University (HH; Shanghai, CHN) or Oregon Health and Science University (OHSU; Portland, OR, USA) between 2013 and 2016. Two BMI-adjusted calculation methods for PSA derivatives were applied. One is BMI-adjusted PSA, which is obtained by computing the geometric mean PSA values as the basic ratio in different patient groups divided by World Health Organization (WHO) categories for BMI (Normal: 18.5–25, Overweight: 25–30, Obese: 30 and above). The other is age/BMI-adjusted

UP.515, Table 1. The summery of recommendations in low risk prostate cancer.

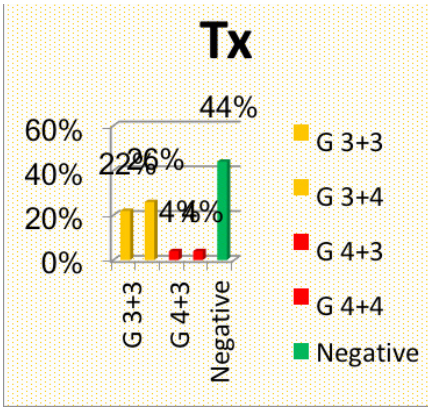
1.	Does observation or active surveillance have a lower survival rate than radical prostatectomy in patients with low-risk prostate cancer whose life expectancy is less than 10 years? Patients with very low-risk and low-risk prostate cancer whose life expectancy is less than 10 years can be considered for observation. (A, I)
2.	Does radical prostatectomy or radiation therapy have a higher survival rate than active surveillance in patients with low-risk prostate cancer whose life expectancy is more than 10 years? Active surveillance, radiation therapy or radical prostatectomy are recommended for low-risk patients with a life expectancy of more than 10 years. (A, II)
3.	Does radical prostatectomy have a higher survival rate than radiation therapy in patients with low-risk prostate cancer? Because radical prostatectomy and radiation therapy are not significantly different in survival rates in patients with low-risk prostate cancer, both therapy can be recommended. (A, I)
4.	Does adjuvant radiotherapy have a benefit from survival rate in patients with low-risk prostate cancer who had pathologic poor prognostic factors after radical prostatectomy? Patients with low-risk prostate cancer who have a life expectancy more than 10 years are recommended to receive adjuvant radiotherapy or salvage radiotherapy if they had pathologic poor prognostic factors after radical prostatectomy or postoperative prostate-specific antigen elevation. (A, I)
5.	Does radical prostatectomy with pelvic lymphadenectomy have a better survival rate than radical prostatectomy only in patients with low-risk prostate cancer? Pelvic lymphadenectomy does not improve survival rate in patients with low-risk prostate cancer, so pelvic lymphadenectomy may be avoided. (A, II)

A-C: The level of recommendation, I-III: The level of evidence

UP.516, Figure 1.



UP.516, Figure 2.



PSA, calculated by coefficients of age and BMI from the linear regression model for the association of PSA with age and BMI. Then the logistic regression multivariate analysis was applied to identify the predictive effect of both BMI-adjusted PSA and age/BMI-adjusted PSA on the biopsy pathology.

Results: From 2013-2016, 702 patients from HH and 182 from OHSU underwent initial prostate biopsy. The natural logarithm of BMI-adjusted PSA density served as an independent predictor for positive biopsy (OR 2.581, CI 2.123-3.138, p <0.001), high-grade cases (OR 1.956, CI 1.509-2.535, P <0.001), and clinically significant cases (OR 1.857, CI 1.417-2.434, p<0.001). Even adjusted for institution, the natural logarithm of BMI-adjusted PSA density still served as an independent predictor for positive biopsy (OR 3.447, CI 2.755-4.313, p<0.001), high grade cases (OR 2.292, CI 1.705-3.081, p <0.001), and clinically significant cases (OR 1.995, CI 1.476-2.697, p <0.001). However, the age/BMI-adjusted PSA model did not serve as an independent predictor, and only the institution predicted prostate cancer with both statistical and clinical significance.

Conclusion: BMI-adjusted PSA, but not age/BMI-adjusted PSA, more precisely predicts adverse pathology in prostate biopsy in both Chinese and US populations.

UP.518, Table 1. BMI-adjusted PSA density (PSAD) between HH and OHSU cohorts

		HH	OHSU	P value
PSAD in whole population	BMI Groups			
	<25 kg/m^2	0.470±0.715 ng/ml*cc	0.201±0.156 ng/ml*cc	0.003
	25-30kg/m^2	0.559±0.716 ng/ml*cc	0.375±0.814 ng/ml*cc	NS#
	>30kg/m^2	0.736±0.964 ng/ml*cc	0.231±0.290 ng/ml*cc	0.009
PSAD in those with PCa	BMI Groups			
	<25 kg/m^2	0.861±0.991 ng/ml*cc	0.230±0.175 ng/ml*cc	0.002
	25-30kg/m^2	0.896±0.886 ng/ml*cc	0.490±1.013 ng/ml*cc	0.025
	>30kg/m^2	1.190±0.550 ng/ml*cc	0.270±0.322 ng/ml*cc	0.001

NS=No significance

UP.518, Table 2. Logistic regression for BMI-adjusted PSA density in predicting adverse prostate biopsy pathology in the entire population (adjusted with age, prostate volume)

HH+OHSU	Odds ratio	Std. Err.	P value	95% CI
Bx_result				
ln_PSAD_bmiadjust	2.581	0.257	< 0.001	2.123-3.138
Age	1.047	0.010	< 0.001	1.027-1.067
Prostate Volume	0.982	0.004	< 0.001	0.975-0.990
High grade cases				
ln_PSAD_bmiadjust	1.956	0.259	< 0.001	1.509-2.535
Age	0.980	0.015	NS#	0.951-1.009
Prostate Volume	1.010	0.006	NS#	0.999-1.021
Clinical significance				
ln_PSAD_bmiadjust	1.857	0.256	< 0.001	1.417-2.434
Age	1.022	0.016	NS#	0.990-1.054
Prostate Volume	1.002	0.006	NS#	0.992-1.014

NS=No significance

UP-519

The Epidemiology of Urethral Stricture Disease: Multi-Center Study from Kuwait

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Introduction and Objective: The true incidence of urethral stricture disease is still unknown. In the past decades, patients increased seeking medical advice regarding this condition due to better patient education and ease of access to variety of medical resources. Causes categorized into inflammatory, traumatic, iatrogenic and idiopathic. The aim of this study is to identify the incidence and etiologies of urethral stricture disease in Kuwait, and type of intervention done.

Materials and Methods: Data of patients diagnosed with urethral stricture disease from 4 different medical centers: Farwaniya, Amiri, Sabah Alahmad and Military hospital, were collected and analyzed. Data from The Public Authority of Civil Information was used to estimate the total population covered by each center. We included all the patients with urethral stricture above the age of 12 from Jan 2008 to June 2018. Demographic data, possible etiology, and location of urethral strictures were studied. Moreover, the treatment modality used in terms of endoscopic or urethroplasty was noted. Patients with incomplete data were excluded from the study. The diagnosis of urethral stricture was made on the basis of retrograde urethrogram and cystoscopy.

Results: A total of 243 patients met our inclusion criteria. The mean age of the group studied was 47 years old. The estimated incidence is 2 cases per 100,000 per year. The most common etiology of urethral strictures was iatrogenic (41.6%), followed by idiopathic causes (30.5%). Other etiologies that accounted for urethral strictures were Infection (16.5%), trauma (8.6%), and Lichen sclerosis (6%). The location of the stricture was classified as penile (8.2%), penobulbar (1.6%), bulbar (83.1%), membranous (1.2%) and panurethral (5.8%). As end point treatment, urethroplasty was performed in 94 patients (38.7% of the cases).

Conclusion: Urethral stricture disease is uncommon urological condition. The most common attributable cause in our study is iatrogenic.

UP-520

Recurrent Penile Adhesions in Patients with Lichen Sclerosis: A Multi-Institutional Experience with Sub-coronal Resurfacing Using Buccal Mucosal Graft "Belt"

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Introduction and Objective: Recurrent penile adhesions associated with lichen sclerosus (LS) may cause pain, bleeding and disfigurement. We present a novel surgical technique for treatment of refractory penile adhesions using a sub-coronal buccal mucosal graft (BMG) resurfacing.

Materials and Methods: A retrospective, international multi-institutional study was conducted to include patients with refractory penile adhesions who were treated with this technique. The procedure included circumferential excision of the diseased skin segment and replacing it with a circumferential 1-cm strip of BMG. Patients with <1-year follow-up were excluded. The primary outcomes were recurrence and surgical complications. Secondary outcomes were patient-reported outcomes measures (PROMS) including SHIM questionnaire and global response assessment (GRA) questionnaire administered to measure functional and esthetic outcomes. The GRA scale ranges from -3 (markedly worse) to +3 (markedly improved).

UP.518, Table 3. Logistic regression for BMI-adjusted PSA density in predicting adverse pathology of prostate biopsy (adjusted with age, prostate volume, and institutions)

	Odds ratio	Std. Err.	P value	95% CI
Bx_result				
ln_PSAD_bmiadjust	3.447	0.394	< 0.001	2.755-4.313
Age	1.065	0.011	< 0.001	1.043-1.088
Prostate Volume	0.985	0.004	< 0.001	0.977-0.993
OHSU vs HH	6.192	1.411	< 0.001	3.961-9.679
High grade cases				
ln_PSAD_bmiadjust	2.292	0.346	< 0.001	1.705-3.081
Age	0.986	0.015	NS#	0.957-1.017
Prostate Volume	1.010	0.005	NS#	1.000-1.021
OHSU vs HH	2.325	0.783	0.012	1.202-4.500
Clinical significance				
ln_PSAD_bmiadjust	1.995	0.307	< 0.001	1.476-2.697
Age	1.026	0.017	NS#	0.993-1.059
Prostate Volume	1.002	0.006	NS#	0.991-1.014
OHSU vs HH	1.420	0.447	NS#	0.766-2.632

NS=No significance

UP.518, Table 4. Logistic regression for BMI-adjusted PSA density in predicting adverse pathology of prostate biopsy (adjusted with age, prostate volume, and institutions)

	Odds ratio	Std. Err.	P value	95% CI
Bx_result				
PSA_adjustagebmi	1.062	0.009	< 0.001	1.045-1.080
BMI	1.058	0.030	0.043	1.002-1.118
Age	1.083	0.013	< 0.001	1.057-1.109
Prostate Volume	0.965	0.005	< 0.001	0.956-0.975
OHSU	4.119	0.996	< 0.001	2.564-6.615
High grade cases				
PSA_adjustagebmi	1.031	0.006	< 0.001	1.020-1.042
BMI	0.961	0.040	NS#	0.886-1.042
Age	1.015	0.020	NS#	0.975-1.056
Prostate Volume	0.997	0.006	NS#	0.984-1.009
OHSU	2.518	0.953	0.015	1.200-5.288
Clinical significance				
PSA_adjustagebmi	1.038	0.010	< 0.001	1.018-1.059
BMI	0.997	0.038	NS#	0.926-1.074
Age	1.035	0.020	NS#	0.996-1.076
Prostate Volume	0.988	0.006	NS#	0.976-1.000
OHSU	1.358	0.473	NS#	0.687-2.688

NS=No significance

Results: Sixteen men with mean age of 61 (46-74) underwent the procedure in five institutions between 3/2014 and 3/2018. Twelve men with >1-year follow-up met inclusion criteria. Prior treatments included topical agents (5/12), oral agents (2/12) and circumcision (5/12). Histologically-proven LS was the most common etiology (8/12). At the mean follow-up of 21 (13-72) months no patients developed recurrence. Mean SHIM score remained unchanged at 15 (p= 0.83). Overall improvement of symptoms on GRA was reported by all patients: 50% GRA+3; 25% GRA+2, 25% GRA+1. All patients saw improvement in pain with intercourse: 33% GRA+3; 17% GRA+2, 50% GRA+1. Ten patients (83%) reported an improvement in esthetic appearance, 1 patient reported no change, and 1 patient mild worsening. Baseline penile sensation was preserved in 9/12 (75%). The majority would recommend the procedure to a friend/relative (11/12, 92%).

Conclusion: Refractory penile adhesions in the setting of LS are notoriously difficult to treat. A sub-coronal BMG resurfacing is feasible. This initial patient cohort demonstrated no recurrence and overall high satisfaction. A prospective study with long-term follow up is warranted.

UP-521

Too Much Endoscopic Management? A Population Based Assessment of Adults with Urethral Strictures After Previous Hypospadias Repairs

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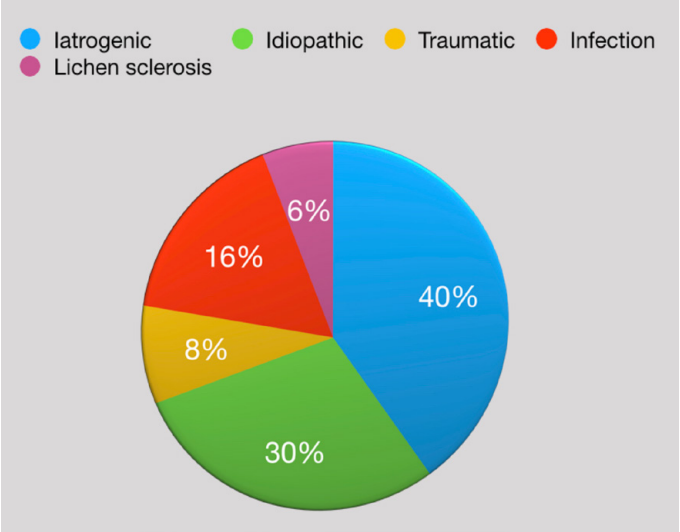
Introduction and Objective: Adults with persistent voiding dysfunction or urethral strictures after childhood hypospadias repairs are a reconstructive challenge. Based on the AUA Guidelines, the standard management of penile urethral strictures is open surgery. Nearly all prior reports on adults with urethral strictures after failed hypospadias repairs are case series from single centers and surgeons. To our knowledge, our report is the first population-based experience on adult hypospadias care in the real world.

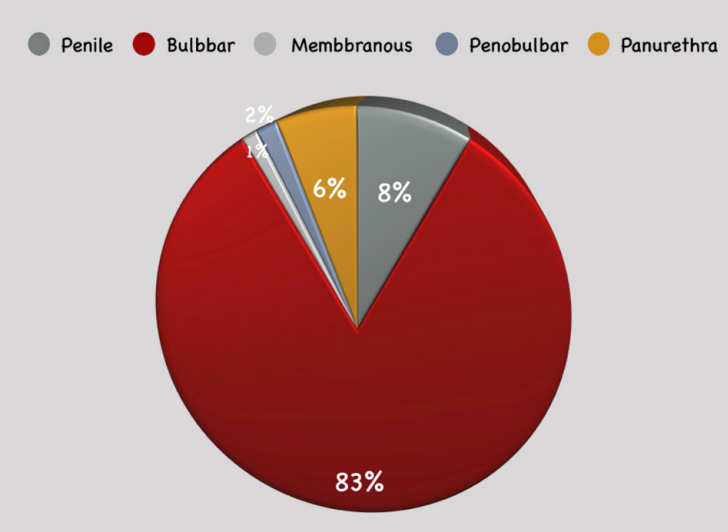
Materials and Methods: We queried the Statewide Panning and Research Cooperative System (SPARCS) database: a large comprehensive database of all payer data reporting system in New York State, between the years 1995-2014. SPARCS collects details on patients in both the inpatient and outpatient settings utilizing ICD9 and CPT codes. The inclusion criteria for the study were patients 18 years and older, with a diagnosis of hypospadias. We captured all urethral operative procedures in this cohort and all subsequent urethral procedures during the follow up period. Success was defined as not requiring subsequent urethral procedure.

Results: 726 adults, mean age 46.9 yrs, who underwent a total of 1,051 procedures. Overall, the most common procedures were urethral dilation (36%) and DVIU (7.6%). The most common co-morbidities were diabetes (10.7%) and hypertension (17%). Patients were divided based on the initial procedures upon entrance to the database. 388 had endoscopic treatments, mean age 57.9 and 340 had urethral reconstruction, 4 were coded as first stage procedures, mean age 36.1 (p<0.01). In those starting with endoscopic treatment, 30 patients had subsequent procedures at a mean time of 32.95 months and among the reconstruction group 52 underwent unplanned subsequent procedures at a mean 18.48 months, translating to 15% failure rate. In multivariable analysis, increasing age was associated with decreased likelihood of secondary procedures (p=0.002), which correlates with the findings in figure 1.

Conclusion: In a statewide population-based evaluation, the success rate for urethral reconstruction in adults with prior failed hypospadias is reasonable. However, despite the high reported failure of endoscopic management, the community excessively uti-

UP.519, Figures 1-2.





lizes dilation and DVIU for adult hypospadias related strictures.

UP-522

Penile Prosthesis Insertion in Transmen After Musculocutaneous Latissimus Dorsi Phalloplasty

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Introduction and Objective: One of the main goals following phalloplasty in transmen is an erectile function with the possibility to engage in sexual intercourse. To enable full rigidity penile prostheses, either inflatable or semirigid, are used. Our objective was to evaluate outcomes of penile prosthesis insertion (PPI) after total musculocutaneous latissimus dorsi (MLD) phalloplasty in our series of transmen.

Materials and Methods: During the period of 8 years (January 2009-May 2017), we performed PPI in 61 transmen. All patients have previously undergone total MLD phalloplasty. There was a mean period of 13 months (range: 9-23 months) between phalloplasty and PPI. Semirigid penile prostheses were inserted into the neophallus using dorsal and/or phalloscrotal approach. The proximal end of each cylinder was fixed to the pubic symphysis preventing their displacement. In case of a three-component inflatable prosthesis, cylinders were inserted using dorsal approach. Pump was placed in the proper scrotal sac at opposite side from microvascular anastomosis, while the reservoir was placed retrovesically using the inguinal approach. All patients were evaluated by either a psychologist or a psychiatrist after complete healing.

Results: Follow-up ranged from 20 to 120 months (mean 41 months). Inflatable and semirigid penile prostheses were implanted in 22 and 39 patients, respectively. Good functioning with full rigidity was reported in 15 and 37 patients. Rejection of penile prostheses due to infection was noted in 2 patients (inflatable prosthesis) and one patient (semirigid prosthesis), respectively. Inflatable prosthesis was replaced by a semirigid prosthesis in two patients, due to malfunctioning i.e. migration of cylinders with subsequent rigidity of only proximal part of the neophallus and inability to engage the intercourse. Three patients reported no utilization of inflatable implants. Semirigid prosthesis was replaced in two patients because it was broken due to trauma. All patients who engaged in sexual intercourse reported satisfying penetration.

Conclusion: Transmen who desire penetrative sexual intercourse require penile prosthesis implantation. Second stage of gender affirmation surgery with PPI represents complex procedure with possible complications, like rejection or malfunctioning. Musculocutaneous latissimus dorsi phalloplasty provides neophallus of good volume and dimensions, offering simple and safe insertion of penile prosthesis. Our study proves lower complication rate in comparison to PPI in other phalloplasty techniques.

UP-523

The Cost-Effectiveness of Urethroplasty Compared with Urethral Dilatation for the Management of Bulbar Urethral Strictures

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Introduction and Objective: Urethroplasty is the gold-standard curative treatment for bulbar urethral strictures. Nevertheless, many are still managed by urethrotomy/dilatation. This study evaluates the cost-effectiveness of urethroplasty on one hand and urethral dilatation on the other within the framework of the UK National Health Service funding system.

Materials and Methods: All previously untreated bulbar strictures managed by urethroplasty or urethral dilatation between January and December 2013 were included. Our prospectively compiled database was retrospectively searched to identify patient and stricture characteristics, treatment outcome and management of failures. Cost of urethroplasty was ≤2964. Dilatation was done as a day case procedure costing ≤934 (Dilatation as an outpatient costs ≤194 for the dilatation alone or ≤317 including flexible cystoscopy). All patients were followed up for five years. Cost of treatment per patient over the entire period from the initial procedure to date was calculated.

Results: 38 patients with newly diagnosed bulbar strictures were managed by dilatation (Group A) and 62 by urethroplasty (Group B – anastomotic n=6; non-transecting n=28; buccal graft augmentation n=28). 11(29%) patients in GroupA and 58 (93.5%) in GroupB required no further intervention during follow-up. 16 patients in GroupA required 29 further dilatations between them (mean 1.8each) costing ≤2627per patient. 15 patients went on to have a urethroplasty, 11 after the first dilatation. Between them these 15 had 19 dilatations costing ≤4147per patient. Cost of managing a patient after a single failed dilatation (by further dilatation or urethroplasty) was ≤3583 (≤2304 if outpatient dilatation). Total cost per patient of managing bulbar strictures by urethral dilatation as inpatient was ≤2816 (≤1728 as outpatient).4 patients in GroupB developed recurrent strictures. One underwent redo-urethroplasty. The other 3 underwent 7 dilatations between them. Total cost of managing strictures by urethroplasty was ≤3117 per patient.

Conclusion: Overall costs per patient of managing bulbar strictures in hospital by urethral dilatation and primary urethroplasty are comparable (≤2816 vs ≤3117). However, if the first dilatation fails, any further management, particularly urethroplasty, becomes less cost-effective than immediate urethroplasty. If, however, inpatient urethroplasty is compared with outpatient dilatation then dilatation becomes considerably more cost-effective over that five-year period. Patient and stricture selection are therefore extremely important before embarking on a treatment strategy for newly diagnosed bulbar strictures.

UP-524

Long-Term Functional and Cosmetic Outcomes of Distal and Penile Hypospadias Repair

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Introduction and Objective: Hypospadias and its surgical correction may impact quality of life (QoL) and psychosexual development of patients. We aim to evaluate the long-term functional and cosmetic outcomes in adult life of patients who underwent hypospadias surgery during childhood.

Materials and Methods: We selected patients operated in our Hospital of distal or penile hypospadias during childhood. Those now 16 years-old were contacted. In clinic, we performed physical examination, uroflowmetry and post-void residual (PVR) measurement. Sexual, urinary and cosmetic outcomes were assessed using validated questionnaires: IIEF-5, IPSS, PROM-urethra, HOSE, PPS, JGPS. Original degree of hypospadias, previous surgeries and follow-up were collected from patient records. Descriptive analysis was conducted.

Results: Twenty-nine patients participated (response rate: 55.8%). Mean age was 19.0(SD 2.9) years. Mean time since last operation was 12.9 (SD 3.5) years. Hypospadias at birth was glandular in 15, distal penile in 10 and mid penile in 4 cases. They underwent a mean of 1.9 operations (range 1-6) for correction. On exam, 86.2% had neomeatus on glans tip, 2 on glans, 2 on sulcus. Mean penile length was 11 (SD 2.6) cm. 3 patients had urethrocutaneous fistula. Two patients had urethral strictures. Mean flowmetry values were: Qmax 20.53 (SD 7.4) mL/seg, Qave 9.4 (SD 3.9) mL/seg, voided volume 270.5 (SD 169.6) mL, 2 patients showing plateau pattern. Mean PVR was 13.8 (SD 41.4) mL, only 2 cases >50 mL. Voiding symptoms were mainly postmicturition dribble and spraying. PROM showed no impact on QoL, with 88.75/100 (SD 12.6) on health status. Seventeen were sexually active, only 1 reporting erectile dysfunction; mean IIEF-5 21.7 (SD 6.9). 89.7% declared being satisfied with penile length, and 86.2% with penile cosmetic appearance. Conversely, PPS test showed 5 patients dissatisfied with general penile appearance and 7 with penile length. PPS mean score was 8.8/12 (SD 2.3). JGPS mean score was 25.8 (SD 4.1), with 10 patients dissatisfied with flaccid penile size. In HOSE, 89.7% scored 14/16, only 3 patients below "acceptable outcome" cutoff.

Conclusion: Surgical outcomes of paediatric hypospadias repair are good. However, patients should be assessed in adulthood to exclude underdiagnosed complications. Patients have impaired self-imaging of genitalia, despite normal sexual function and good objective cosmesis.

UP-525

Panurethral Strictures: Patient Selection and Functional Outcomes of Oral Mucosa Graft Augmentation Urethroplasty Compared with Perineal Urethrostomy

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Introduction and Objective: Panurethral strictures may need complex reconstruction. Seems important to tailor surgical indications to age, comorbidities and patient expectations. We aim to assess patient selection and outcomes of two approaches for panurethral strictures: dorsolateral buccal mucosal graft urethroplasty by perineal approach –Kulkarni technique- and perineal urethrostomy.

Materials and Methods: We selected prospectively collected data from patients with panurethral strictures managed surgically and with a minimum follow-up of 6 months. Patient characteristics, type of urethroplasty and perioperative complications were collected. Outcomes were assessed clinically, by flowmetry and using PROM questionnaires. Failure criteria were Qmax 10ml/s, Qmax 15 ml/s and evidence of stricture in urethrogram, or inability to advance a 16Ch flexible cystoscope. Descriptive analysis of groups and comparison between interventions were performed using Pearson´s X^2, Student´s T test for independent samples, or non-parametrical tests when required.

Results: Between 2014-2018, 20 patients met the inclusion criteria; 8 augmented urethroplasties. Mean age 59.86 (SD 6.7) years. Mean stricture length 12.19 (SD 4.88) cm. Graft length: 17.38 (SD 5.1) cm (Median of 2.5 grafts/patient). Length of stay 2 days (1-7 days). Two patients had postoperative complications, Clavien II and IIIA. Median follow-up 22.83 months (6-51 months). Five patients were satisfied. Three stricture recurrence requiring dilation or redo urethroplasty. Twelve perineal urethroplasties. Median age 69.75 years (80-50). Comorbidities: Diabetes (59%), smoking (50%), vascular disease (33.3%), multioperated hypospadias (41.6%), penile cancer (16.6%). Mean stricture length 6.33(SD 3.7) cm. Median length of stay 2 days. Three Clavien I complications. Mean follow-up 16.86(SD 14.76) months. One stricture recurrence requiring redo urethrostomy. 90.9% of patients satisfied with their outcomes. Statistically significant differences were found between both groups regarding age (P= 0.012), and background of multioperated hypospadias (P= 0.035), being higher in urethrostomy group. We did not find differences in diabetes, smoking or vascular disease. Stricture length was significantly longer in the augmented urethroplasty group (P= 0.015). We found no statistical differences in stricture recurrence, satisfaction rate and hospital stay.

Conclusion: For panurethral stricture surgical management, buccal mucosal graft urethroplasty and perineal urethrostomy are acceptable options, with high satisfaction and success rates. Patient selection should include age, aetiology, and comorbidities, along with patient preferences.

UP-526

Surgical Techniques and Immediate to Intermediate-Term Surgical Outcome of Female Urethroplasty Using Buccal Mucosal graft: A Single Institutional Series

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Introduction and Objective: Buccal mucosal graft onlay has recently being considered as an approach for female urethroplasty. Here in, we present our institutional surgical approach and immediate to intermediate- term surgical outcome.

Materials and Methods: All female patients diagnosed with urethral stricture managed in our institution from 2014 to 2018 were identified and reviewed for surgical management and subsequent outcome. Successful surgical outcome was defined as no further surgical intervention such as catheterization, dilatation, urethrotomy or open reconstruction and patient able to micturate freely. Patient characteristics and clinical variables were extracted by performing a medical chart review and summarized according to surgical approach and evaluated for the outcomes including associated morbidities as reported in their last clinic follow-up.

Results: A total of 11 female patients with mean age of 55.7 years old underwent onlay urethroplasty using buccal mucosal graft. Seven (63.6%) patients had panurethral stricture, 4 (36.4%) had midurethral strictures. The average luminal calibration preoperatively was approximately 8 Fr), all patients had at least one prior urethral dilatation and or additional instrumentations such as urethrotomy prior to the urethroplasty. At the time of surgery, the patients' mean body mass index was 32.9. All patients had dorsal buccal graft onlay, while three patients (27.3%) had additional ventral graft onlay. Buccal graft surface area had an average of 8.5 cm^2. Overall mean operative time was 164 minutes and mean estimated blood loss was 139 cc. Average length of hospital stay was 52.4 hours and average catheter indwelling time was 22.6 days. One patient was lost to follow-up post-operatively. The mean follow-up duration was 15 months post-urethroplasty with at least a cystourethroscopy, flow rate, post-void residual and or radiographic study to evaluate surgical outcome. All patients had a satisfactory outcome. One complication of vaginal abscess was noted which was managed with drainage and antibiotics. Three (27.3%) patients did report some oral tightness post-operatively, while 4 (36.4%) patients noted new occurrence of urgency on follow-up which was adequately managed with anticholinergic agents.

Conclusion: Our institutional series on buccal mucosal graft onlay for female urethroplasty has shown that this procedure is an acceptable option for female stricture with high immediate to intermediate term success rate and low morbidity reported.

UP-527

Assessing the Utility of Contrast-Enhanced Ultrasound for the Evaluation of Urethral Stricture Disease: A Pilot Study

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Introduction and Objective: The diagnosis and evaluation of urethral strictures is most commonly performed with cystoscopy or retrograde urethrography (RUG). These techniques are invasive and expose patients to radiation. In this pilot study, we examined the utility of contrast-enhanced ultrasound (CEUS) for the evaluation of urethral stricture lengths.

Materials and Methods: Patients with a single, bulbar urethral stricture diagnosed on preoperative cystoscopy and RUG who elected to undergo surgical repair were recruited to this ongoing, IRB-approved study from October 2018 to March 2019. CEUS urethrography was performed under anesthesia prior to open surgical repair using 1mL of Lumason (Bracco Imaging, Monroe Township, NJ) contrast diluted with 200 mL normal saline, which was injected transurethrally. CEUS imaging was performed using an Aplio i800 scanner with an i18LX5 transducer (Canon Medical Systems, Tustin, CA). Stricture lengths based on RUG, 2D grayscale ultrasound (US) and CEUS were measured by a blinded observer and correlated to excised surgical specimens. Results: To date, six men (mean age 65.3 ±18.8 years and BMI 32.2 ±6.0 kg/m^2) have been enrolled. Five (83%) patients had previously undergone stricture dilation procedures. Most strictures (67%) had an idiopathic etiology. One (17%) patient did not undergo urethroplasty as his stricture was passively dilated on cystoscopy. Mean urethral stricture length when measured on RUG, 2D US, CEUS and pathology analysis was 0.94 ±0.44 cm, 1.14 ±0.77 cm, 1.30 ±0.66 cm and 1.49 ±0.74 cm, respectively. When compared to RUG (R= 0.528, p= 0.472) or 2D US (R= 0.312, p= 0.609), CEUS (R= 0.855, p= 0.065) showed the best correlation of measured stricture length to the excised specimen.

Conclusion: Our pilot study demonstrates the ability of CEUS to accurately characterize urethral stricture lengths when compared to current standards. Further studies assessing the utility of CEUS and optimizing the protocol should be performed in larger cohorts.

UP-528

Bladder Exstrophy: Unfinished Projects in Chronic Congenital Urology

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Introduction and Objective: Bladder exstrophy is rare and complex congenital abnormality identified in the neonatal period and reconstruction is usually undertaken within the first 12 months of life. Further surgery is likely through childhood and into adulthood. Management is initially with paediatric urologists but transition to adult care can be difficult. Patients need a motivated urologist with a skill set that covers reconstruction, urodynamics, endourological stone management and an awareness of the other areas of sexual health and fertility. Engaging with other specialists and an ongoing relationship with paediatric and other subspecialist urologists is vital.

Materials and Methods: We reviewed patients with a history of bladder exstrophy who transitioned from paediatric services to adult services in the private care setting within an Australian metropolitan area.

Results: We identified 8 patients with a history of bladder exstrophy with ongoing urological care through a single practice where one reconstructive urologist with a specific interest. All patients underwent extensive reconstructive surgery throughout childhood. Seven have also required input from other medical specialists as young adults, including general or plastic surgeons, and gynaecologists in all three female patients. A paediatric urologist was involved in revision of bladder augment and catheterisable channel as adults in three patients. Despite the broad skill set of the interested urologists who specialise in the care of these adult patients, involvement of urologists with different sub-speciality interests is important. In all patients, lifelong surveillance for deterioration of renal function, metabolic issues, bone health secondary to chronic acidosis and rare bladder malignancy is required.

Conclusion: Patients need referral to urologists with the expertise and support structures to look after their complex ongoing issues and provide the necessary ongoing surveillance. The multidisciplinary team is essential. Paediatric surgeons are needed as an integral resource in management of these adult patients. The current randomness of transitional care may mean that exstrophy patients might present acutely for crisis management in emergency departments or as new referrals to general urologists. At these times it is important to appreciate the complexity of their problems and ensure a secure ongoing urological connection.

UP-527, Table 1.

Patient	Stricture location	Etiology	Stricture length (cm)				
			16F Cystoscopy	RUG	2D Ultrasound	CEUS	Excised specimen
1	Proximal bulbar	Idiopathic	UTP	1.50	1.11	1.66	2.00
2	Proximal bulbar	Iatrogenic	UTP	0.50	0.24	0.58	0.90
3	Proximal bulbar	Idiopathic	0.2	0.50	0.34	0.64	N/A (stricture passively dilated with cystoscope)
4	Mid-bulbar	Idiopathic	UTP	1.20	1.14	1.23	1.30
5	Proximal bulbar	Trauma	UTP	N/A	2.05	1.35	0.75
6	Proximal bulbar	Idiopathic	UTP	1.00	1.98	2.33	2.50

UP-529

Long Term Functional Success after Pyeloplasty for Pelvi-Ureteral Junction Obstruction in Unilateral Poorly Functioning Kidney in Exclusively Adults Population

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Introduction and Objective: To assess long term clinical and functional outcomes post pyeloplasty in unilateral UPJO in poorly functioning kidneys in an exclusive adult population.

Materials and Methods: We reviewed the database of all cases admitted with unilateral UPJO treated with pyeloplasty and preoperative split renal function (SRF) was < 30% (by diuretic MAG-3 renography). We further subdivided patients into two groups; group (A) SRF 20% and group (B) SRF >20% and <30%. Renal function difference was evaluated by the changes in SRF at last follow up, where 5 % change was considered significant. Functional success was defined as absence of obstructive pattern on diuretic renogram with no decline in renal function. Clinical success is defined as no need for secondary intervention (re-do pyeloplasty, nephrectomy, stenting or endoyelotomy).

Results: Among 211 patients. The mean ±SD of SRF was 20.5 ± 6.6%. After a median (range) follow up of 67.1 ± 11.8 Months, SRF increased significantly to 23.5 ± 7.5 (p<0.0001). SRF was static, improved and decreased in 150 (67.9%), 59 (26.7%) and 12 (5.4%) patients, respectively. In group (A) 92 patients, SRF increased from 14.3 ± 4.9 to 18.7 ± 7.1 (p<0.0001). Functional success was achieved in 88 (95.6 %) patients. Whereas, in group (B), 24.9 ± 3.3 to 27.2 ± 6.3 (p<0.0001) at last follow up. Functional success was achieved in 121 (95 %) patients.

Conclusion: Pyeloplasty provides high rates of functional success in poorly functioning kidneys. All attempts should be done to repair UPJO regardless of the SRF.

UP-530

Multiple Transverse Dorsal Incisions Patched with Tachosil® in the Surgical Treatment of Peyronie's Disease: Preliminary Results

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Introduction and Objective: Penile curvature is in the majority of patients the primary endpoint in the treatment of Peyronie's disease. We present a technique of multiple transverse incisions patched with TachoSil® self-adhesive collagen fleece (Takeda, Portugal) for the primary surgical correction of penile dorsal curvature, regardless of severity of angle of curvature and penile length, as an alternative to grafting and plicating procedures.

Materials and Methods: 11 potent patients with dorsal curvature underwent this procedure. A duplex Doppler ultrasound scan (DDUS) was performed routinely pre-operatively to assess erectile hemodynamics. A subcoronal circumferential incision is made and penile shaft degloving is performed as necessary. The neurovascular bundle is carefully elevated off from the area of maximal curvature. Several transverse incisions are marked and then made with a cold scalpel on the tunica albuginea about 3 mm apart from each other. The tunical incisions are then sealed with TachoSil® separately with the penis on stretch to avoid potential contraction. No stitching is necessary as this vascular sealant sticks to the tunical defect by itself. The neurovascular bundle and Buck's fascia are repositioned and sutured back in place.

Results: Mean age was 64 years (range 47-76 years). Etiology of PD was variable: penile trauma during sexual intercourse in 4, urethral catheterization (post-radical prostatectomy) in 1, urethral endoscopic instrumentation in 1, penile blunt trauma 1 and idiopathic in 4. Mean penile curvature was 65º (range 45-90º). Mean operative time was 95 min (range 75-120 min). Mean follow-up varied from 4 to 13 months (mean 5). Pre-operatively, penile length measured from 11 cm to 16 cm in erection (mean 14). Post-operatively, 2 patients noted penile length reduction of < 1 cm, 5 patients reported no change and 4 noted a slight increase between 1- 1.5 cm in erection. Post-operative residual curvature was < 15º in 3 patients. Patients and partners satisfaction were high.

Conclusion: This procedure is safe and efficacious with no or minimal impact on erectile function and penile length. The use of simple incisions only and TachoSil® seems to avoid the potential adverse effects of veno-occlusive dysfunction created by the large grafted tunical defects and the frustrating complication of penile length decrease.

UP-531

The Management of Patients with Urethral Strictures Due to Lichen Sclerosus

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Introduction and Objective: The treatment of lichen sclerosus (LS), affecting the urethra, is challenging because of its uncertain aetiology, the variable response to treatment and the tendency to recur. Super-potent topical steroids are the mainstay of the treatment of the skin disease and may also be used for distal urethral disease by using clean intermittent self-catheterisation (CISC) to push steroid cream into the distal urethra. In advanced cases urethroplasty is the mainstay of treatment with variable results.

Materials and Methods: 91 men with a mean age of 57 years (range 35-82) were treated for LS urethral strictures between January 2016 and December 2018. Outcomes were assessed with symptoms (PROMs), flow rates, urethrograms and the need for further surgery.

Results: All patients had a urethral dilatation (UD) as the first line of treatment. 42 patients continued to be managed thereafter by UD, as required. Of these 42 patients, 14 eventually underwent urethroplasty, or perineal urethrostomy. The other 49 patients were started on CISC and most of these used the CISC to push Clobetasol cream through the meatus and into the fossa navicularis and distal penile urethra. 30 of those patients remain on CISC but 11 eventually had surgery. Management by CISC with or without Clobetasol was successful in 73% of patients and tended to be highest in the more distal strictures or the shorter strictures. It isn't clear whether it is the length or the location that matters. Of the patients using Clobetasol only 13% came to surgery, whereas 40% of the patients not using Clobetasol needed surgery. Urethroplasty was successful in 70% of patients with distal strictures, 50% with penile strictures and 0% in those with full length strictures.

Conclusion: In patients with LS affecting the meatus and distal urethra CISC using Clobetasol as a "lubricant" is effective. With longer strictures, more advanced or more aggressive disease, the results of interval dilatation or self-catheterisation are less satisfactory but should always be tried because the results of surgery are poor. When surgery is indicated perineal urethrostomy seems to be a better option.

UP-532

Surgical Management of Urethral Injuries in the Spinal Cord Injury Patient

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Introduction and Objective: Any form of bladder drainage in the spinal cord injury patient (SCI) may damage the urethra, causing erosion, diverticulum, stricture, false passage or fistula. We review our experience with the surgical management of these injuries.

Materials and Methods: Retrospective analysis of SCI operated in last 30 years. All patients are managed by intermittent catheterization, no condom or indwelling catheters are used. Urethral injuries are evaluated by endoscopy and urethrography. Surgical management was individualized, performing internal urethrotomy (DVIU) or urethral reconstruction (UR), according to each case. Continent diversions (CDIV) was indicated when reconstruction was not possible. The goal of surgery was to recover easy, non-traumatic, continent intermittent catheterism.

Results: 46 SCI operated, mean age 50 yr (25-70yr); there were 34 paraplegic, 10 quadriplegic and 2 cauda equina patients. The mean follow-up (FU) was 60 months (3-300mo.) and there was only one female. 42 pt. are evaluable (3pt. <3mo. FU and 1 pt. lost to FU were excluded). Injuries were 26 strictures, 9 false passages, 6 fistulas and one catheter erosion. Techniques were DVIU (11 pt.), UR (15 pt.), CDIV (16 pt.). Strictures managed by DVIU in 11pt (success 36.4%), UR in 9pt (success 88.9%) and CDIV in 6pt (success 83.3%). Overall success of strictures was 65.4%.False passages managed by UR in 4pt (success 50%) and CDIV in 5 (success 80%). Overall success of false passages was 66.7%. Fistulas managed by CDIV in 4 (success 100%) and UR in 2 (success 0%). Overall success of fistulas was 66.7%. DVIU failed in 64%, managed by urethroplasty (3pt), repeated DVIU (2pt), suprapubic catheter (SPT) (2pt). DVIU morbidity was 20%; Clavien 3 (0%). Urethroplasty failed in 33%, all managed by CDIV. Urethroplasty morbidity was 20%; Clavien 3 (10%). CDIV failed in 13%, all managed by SPT. CDIV morbidity was 65%; Clavien 3 (50%).Overall primary success of the series was 28/42 (67%). Secondary surgery rescued most failures and only 4pt (9.5%) were left with a definitive SPT.

Conclusion: Urethral injuries in the SCI are complex, but individualized surgical management can be successful in 2/3 of patients

UP-533

Versatility of Kulkarni Perineal Approach for Urethral strictures

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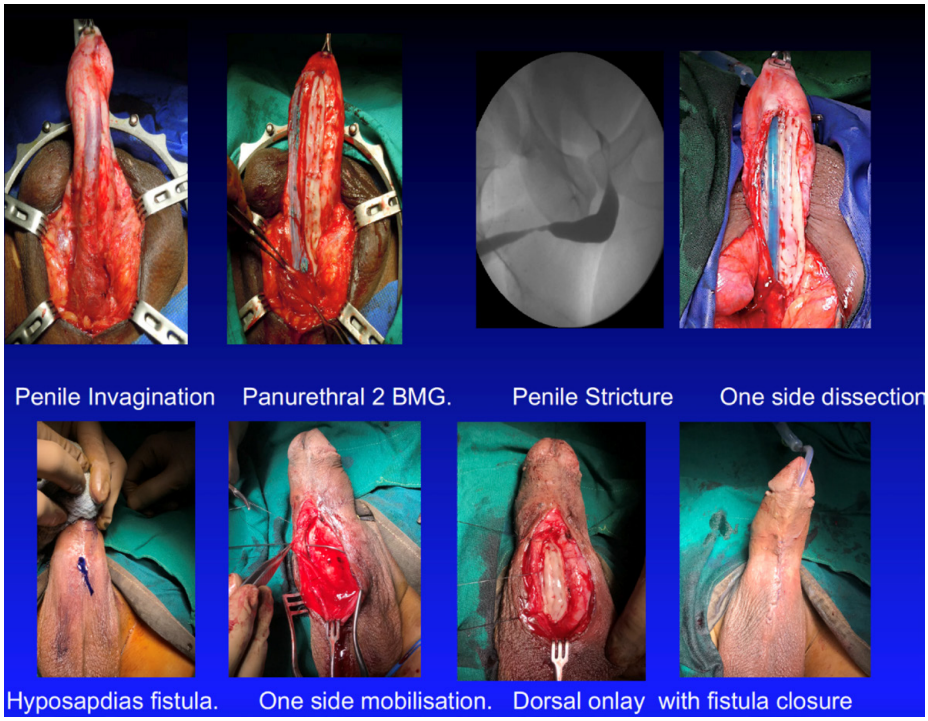
Introduction and Objective: Kulkarni Panurethroplasty with one side dissection technique is today practiced at many centers across the globe. The advantage of one side dissection is it preserves the neurovascular supply on the opposite side of urethra. It is minimally invasive urethroplasty. The urethra opens like a book and can be attached to exact same location as before unlike circumferential mobilization

Materials and Methods: The Kulkarni Urethroplasty can be used in 3 different scenarios. It is best suited for a single stage, penile invagination, dorsal onlay, one sided dissection buccal graft urethroplasty for Panurethral strictures. This is especially true for lichen sclerosus where staged approach is fraught with recurrence. The penile invagination approach can be applied to penile strictures. Through a perineal incision, penis is invaginated, Urethra mobilized on one side, dorsal onlay urethroplasty done from meatus till entire length of stricture. This can be done without penile incision. In hypospadias fistula, simple fistula closure often fails as usually there is a distal stricture. Buccal graft augmentation with dorsal inlay has been practiced. With Kulkarni one side dissection, urethra can be mobilized dorsally, Fistula closed from inside, and augmented with a dorsal onlay buccal graft. A onlay graft is always bigger and has better attachment to underlying corpora.

UP.533, Figure 1. Versatility of Kulkarni Approach for Urethral Strictures:



Results: We have performed 402 Panurethroplasty,91 Penile Urethroplasty and 7 hypospadias fistulae with a success rate of 84.90% using one side dissection technique.

Conclusion: Kulkarni one sided dissection is a simple, minimally invasive approach which can be applied to Panurethral strictures, Penile stricture and hypospadias fistula/stricture. This is a minimally invasive, neurovascular preserving urethroplasty.

UP-534

3D Printing of Pelvic Fracture Urethral Injuries

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Introduction and Objective: In Pelvic fracture urethral injuries, as per Mundy et al rate limiting step in urethroplasty is finding the posterior urethra. Even for the most experienced surgeons, at times this step can be challenging. For novice reconstructive urologists, trainees it is essential to understand the anatomy of posterior urethra and to predict the need for pubectomy. We describe a novel technique for understanding the 3 D anatomy to make urethroplasty easy for everyone.

Material and Methods: Ours is a tertiary referral center with experience of more than 1307 cases of PFUDD. This study was done between January-July 2018. Ethics approvals were taken. No patients incurred any cost for the study. A CT scan is performed with bladder filled with contrast saline. A spiral CT Scan is performed with a scan time of 10 seconds. 3D Images are reconstructed. These images are fed to 3D Ultimaker imprinter. The printing is done at a scale of 0.8 of real size. This printing takes about 20 hours.

Results: 10 models were created. This included 9 males and 1 female with PFUDD and incontinence. The models along with conventional urethrogram were shown to fellows and observers. Visually they gave a score of 4.3/5. In correlation with urethroplasty, the models helped in decreasing the surgical time and understanding the anatomy of posterior urethra. In the female patient, the model was accurately able to predict hypsoapdiac meatus, urethro vaginal fistula with introital narrowing which helped in decision making.

Conclusion: 3 D Printing can be applied to PFUDD to understand anatomy of posterior urethra, its distance from rectum, length of gap, relation to posterior urethra, direction of displacement of urethra, if Pubectomy is required or not. The next step in our mind is to do 3D printing using composite material, mimicking bone so that the urologist can practice pubectomy before performing urethroplasty.

UP-535

Robotic Peritoneal Flap Revision Vaginoplasty in Transgender Females - Preliminary Results of a Novel Technique

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Introduction and Objective: The gold standard in neovaginal reconstruction in male to female transgender patients is penile skin inversion with or without scrotal flaps. Complications after penile inversion vaginoplasty (PIV) include stenosis, necrosis, decreased depth, and fistula formation. Revision vaginoplasty is a challenge due to paucity of tissue, requiring extragenital skin grafts or use of enteric segments. The objective of this study was to evaluate the efficacy and safety of a novel technique using a robotic approach with peritoneal flaps for revision vaginoplasty in transgender females.

Materials and Methods: Between September 2017 and March 2019, we identified 12 transgender female patients who underwent robotic peritoneal flap revision vaginoplasty after initial PIV. Two peritoneal flaps measuring approximately 8 cm wide by 10 cm long are raised from the anterior aspect of the rectum and sigmoid colon, and the posterior aspect of the bladder. The two peritoneal flaps are advanced distally to serve as an attachment for inverted penile skin from previously created stenosed vaginal cavity. The proximal edges of the flap form the neovaginal apex. Charts were retrospectively reviewed, and descriptive statistics were used to analyze patient demographics, intraoperative and postoperative outcomes.

Results: Patients had a mean age of 39 years (range 27-58) at time of revision. Patients underwent revision vaginoplasty at a median of 14.5 months (range 6-240) since primary vaginoplasty. Nine of 12 patients underwent initial PIV at an outside institution. Five patients had undergone previous revision vaginoplasty. Surgical indications included short or stenotic vagina or absent vaginal canal in all 12 patients. All 12 patients successfully underwent revision vaginoplasty with no intraoperative complications. Mean follow up was 153 days (18-438) days. At most recent follow up, mean vaginal depth and width were 14.4 cm (range 13.3-14.5) and 3.55cm (range 3.2-3.8), respectively. There were no complications related to peritoneal flap harvest; one patient had post-operative bleeding from a prostatic pedicle requiring suture ligation under anesthesia.

Conclusion: Robotic peritoneal flap revision vaginoplasty is a safe, minimally invasive approach to perform revision vaginoplasty in patients who previously underwent PIV. Peritoneal flaps provide a well-vascularized canal without additional donor site morbidity.

UP-536

Glans Reconstruction in Lichen Sclerosus Atrophicus

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Introduction & Objective: Distal urethral or Navicular fossa strictures along with totally denuded glans of its skin cover due to Lichen Sclerosus Atrophicus (LSA) are a unique subset of patients. Creation of adequate long-lasting lumen and cosmesis are important concerns. This is a step by step demonstration of total glans reconstruction involving buccal mucosal graft (BMG) urethroplasty of Navicular fossa stricture and resurfacing of glans with a full thickness skin graft (FTSG).

Materials and Methods: A 41 year-old male, diabetic, previously had a pan-urethroplasty for a long anterior stricture including graft repair of the distal urethra. At that time, his foreskin and glans skin were scarred due to LSA and was excised. Over time, the wound healed with proximal penile skin covering the surface. He presented with recurrent obstructing symptoms. His glans showed unhealthy skin puckered onto the stenosed meatus. His flow was significantly obstructed. His urethrogram showed distal urethral stricture. Proximal urethra showed successful repair.

During the glans repair, unhealthy puckered skin was excised. Penis was degloved. Ventral glans incision including urethrotomy was done, extending well into the proximal healthy urethra. This lumen was <4F. The unhealthy mucosa along with underlying fibrosis was excised. The healthy glanular bed thus created was grafted with a BMG. Ventral urethral layer, glanular sponge, fascia and skin were closed. Penile shaft skin was sutured to the corona. Glans was then resurfaced with FTSG from non-hirsute skin of the lower abdomen. Accurate closure was done with cutaneous approximation at corona and mucocutaneous anastomosis at the meatal edge. Compression tie-over dressing was done over 14 F catheter.

Results: When the catheter was removed after urethrogram at three weeks, patient voided well. There was no anastomotic leak. The patient had been voiding well with a good flow and remains under follow up.

Conclusion: Glans reconstruction in a devastated Navicular fossa and loss of skin cover in LSA is a challenge. However, as long as there is a healthy glanular sponge, excision of the fibrous urethra and grafting entire surface with BMG followed by external resurfacing with nongenital FTSG achieves a good outcome.

UP-537

From Diagnosis to Treatment: Structure, Function and Evolution of a Modern Urology Reconstruction Practice in an Academic Reference Center

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Introduction and Objective: The aim of the presentation is to illustrate the development of a structured reconstructive practice over time, focusing on structure, organization and challenges in the context of contemporary urological reality.

Material and Methods: A retrospective study was conducted, that involved all patients treated surgically by the Reconstructive Department of the 1st University Urological Clinic of "Laiko" General Hospital (Athens, Greece), from 2005 to 2018.

Results: From 2005 to 2010, the number and type of procedures do not show any particular differences. Until 2010, the procedures are limited to Peyronie's disease treatments, sling procedures for female incontinence and scarce prosthetic cases for male incontinence and erectile dysfunction, as well as a few cases of cystovaginal fistulas. From 2011 to date, the number of cases treated shows a steady increase. Moreover, new procedures have been added to the armament of the Reconstructive Department, for the pathologies already treated, as well as for new maladies. For the pathologies already treated, new techniques, procedures and materials were challenged and evaluated, such as the use of various grafts in Peyronie's disease. New procedures added, include urethroplasty for urethral strictures, sling placement for male incontinence and mesh placement for pelvic organ prolapse. In terms of statistics, the time of hospitalization has reduced from a median of 4 to 1.2 days, along with the operative time in all kinds of surgical procedures.

Conclusion: In modern urological reality, reconstructive urology is no longer the last solution but the first-line treatment for a wide range of pathologies. Responsible counseling, flexibility and versatility in the surgical treatment and structured postoperative follow-up are of utmost importance in our department, combining suitably trained, qualified personnel as well as an appropriate infrastructure. In this way, it has been possible to create a reference center in Greece, capable of providing high-quality medical care, as well as a structured environment for reconstructive urology training.

UP-538

Urethroplasty: Evolution and Results from a Tertiary Reference Center

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Introduction and Objective: Male urethral strictures are a common condition, usually treated with urethral dilatations and internal urethrotomy. The efficacy of the aforementioned methods, especially in the long-term, is limited compared to the open approach. Although open urethroplasty today is regarded as the gold standard in the treatment of urethral strictures, its use is very limited in the everyday clinical practice. At the 1st University Urology Clinic of the Laiko Hospital, urethroplasty is offered as treatment of choice in new stricture cases as well as in cases where conventional methods have failed. We hereby present the results of our urethroplasty procedures. Materials and Methods: From 2011 to 2018, 87 open urethroplasties have been performed. The majority were performed for anterior strictures, mostly due to endoscopic manipulation. All posterior strictures were due to traumatic injuries. The characteristics of the strictures and previous approaches were registered during the preoperative assessment. All patients were treated with anastomotic and/or augmentation urethroplasty. In case of graft usage, the type and placement were recorded. All patients were postoperatively evaluated using a scheduled follow-up plan.

Results: The overall success of urethroplasty (no instrumentation) was 83.9% (91.4% in anastomotic urethroplasty and 80.95% in augmentation urethroplasty), reaching 100% in cases with none or one previous treatment. The incidents that required further treatment, as well as the type of treatment, were analyzed. In addition, the minor post-operative complications that occurred were recorded. The progress in the clinical practices applied is reported, in terms of postoperative evaluation methods and operative techniques.

Conclusion: Urethroplasty is an effective and durable treatment for urethral strictures, with low morbidity and high patient satisfaction. It requires excellent knowledge of the applied techniques, ongoing training and thorough pre-operative assessment, in order to personalize the treatment strategy in all cases.

UP-539

Single Stage Distal Penile Urethroplasty Using Buccal Mucosa for Balanitis Xerotica Obliterans (BXO) Induced Strictures

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Introduction and Objective: Single stage urethroplasty for distal penile urethral strictures using buccal mucosal graft (BMG), historically, have been carried out in two stages with an interval of 6 months in-between the stages and a 10% chance of revision interstage due to cross-fibrosis. Here we present the result of our centre, classified as low volume, for single stage distal penile urethroplasties performed solely for BXO related strictures.

Materials and Methods: Single stage distal penile urethroplasty was carried out on 37 patients, all suffering from BXO, by a single surgeon at what is classified as a low volume centre. Of these 7 had previous failed hypospadias repair. A naso-laryngeal tube was placed by the anaesthetist. Urethral plate divided and fibrotic tissue excised. BMG was laid in the place thus created and then fenestrated and quilted. Dartos flap was used to cover the repair. Urethra was closed over a 14F Foley's catheter. Catheter was removed on day 11. Patient was advised application of Vaseline twice a day at the tip. Follow up was at 6 weeks, 3 months and then 6 months for 2 years with urethroscopy, flow rate and post void residuals. Recurrence was described as on endoscopy.

Results: All patients had BXO induced distal penile stricture with previous dilatation and ISD with recurrence. The mean follow-up time was 42.5 months (range= 10-78 months). The average stricture length was 5.3 cm (range 1.5-12 cm). Five out of 37 patients suffered a recurrence of their strictures just at the tip (13.5%). Small urethral fistula developed in 13.5% of patients (5/37). All were surgically repaired, recurrences with BMG and fistulas with dartos flap with no residual issues. Besides recurrence and fistulae, other complications included persistent graft site pain in one patient and penile haematoma in 1 patient (managed conservatively). Standard flowmetry measurements using a Urodyn system showed an average improvement in patient Qmax from 9.1 to 20.6 ml/sec ($p < 0.005$) and a drop of the average post void residual from 30 mLs to 15 mLs.

Conclusion: Our centres experience of single stage buccal mucosal urethroplasties for BXO induced distal penile strictures would suggest that this procedure is safe and effective as a first line surgical option. Failure rates are at accepted levels for such a procedure and patients benefit from a single hospital stay and a shorter overall recovery/treatment period.

UP-540

Redo Pyeloplasty Outcomes with Laparoscopic and Robot Assisted Approach: A Single Large Centre Experience

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Introduction and Objective: Management options for Recurrent Ureteropelvic Junction Obstruction (UPJO) include endoscopic, open, laparoscopic or robot assisted approach. Due to morbidity of open surgery and variable results with endopyelotomy, laparoscopic and robotic approaches are increasingly being used. We present our experience of 22 patients over past 10 years who underwent laparoscopic and robot assisted redo pyeloplasty for recurrent UPJO.

Materials and Methods: All patients who underwent laparoscopic and robot assisted redo pyeloplasty from 2009 to 2018 were included. Patients who were lost to follow up or inadequate follow up (at least 3 months) were excluded. All patients were followed up with clinical visits and DTPA scan at 3 months and then annually for 5 years after the surgery. All complications were recorded using Clavien Dindo grades (CDG). Statistical analyses was done using simple descriptive statistics.

Results: A total of 22 patients were included. Eighteen (81.8%) underwent laparoscopic and 4 (18.18%) robot assisted redo pyeloplasty. Eighteen (81.8%) patients had resection of strictured segment and spatulated reanastomosis and 4 (18.18%) patients underwent ureterocalicostomy. Mean age of the patients was 28 years. Mean operative time was 152.5 min in laparoscopic approach and 124.5 min in Robot assisted one (p= 0.0403). Mean duration of hospital stay and mean time to drain removal were 2.5 days and 2.3 days respectively. Mean duration of stent removal was 42 days. Intraoperative complications were seen in 2 patients (9%). Post operative complications were seen in 3 patients (13%) (1 with CDG II and 2 with CDG I). No mortality was seen. Treatment success as defined by resolution of symptoms and non obstructed drainage on DTPA scan at 3 months after stent removal, was seen in 20 (91%) of all patients. All patients who underwent robot assisted surgery had complete treatment success.

Conclusion: Redo pyeloplasty gives excellent results with minimally invasive approach. Most cases can be managed by excision of the scar tissue with strictured segment and spatulated re-anastomosis. Robot assisted technique reduces the operative time and provide meticulous dissection in difficult cases.

UP-541

Management of Glans Penis Amputation with Primary Anastomosis and Hyperbaric Oxygen Therapy

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Introduction and Objective: Penile amputation is a rare complication of a circumcision in Urology and the management of this condition requires immediate microvascular surgical re-implantation of the amputated penis. We present a case report of successful penile re-implantation without microvascular anastomosis and with the use Hyperbaric Oxygen Therapy.

Materials and Methods: While in the literature, there is paucity of data and mainly limited to cases reports, it is difficult to define a specific management protocol for this complication. The case was obtained from a patient who presented in our department with a penile amputation after a Guillotine circumcision.

Results: The results of re-implantation without microvascular anastomosis and with the use of Hyperbaric Oxygen Therapy were excellent. Patient recovered satisfactorily functionally and cosmetically.

Conclusion: The above results demonstrate that the management of penile amputation, may be successful with the use of re-anastomosis without Microvascular surgery and with the use of Hyperbaric Oxygen therapy.

UP-542

Robotic Excision of Vaginal Remnant/ Urethral Diverticulum for Relief of Urinary Symptoms Following Phalloplasty in Transgender Men

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Introduction and Objective: In transgender men who undergo phalloplasty with urethral lengthening and vaginectomy, urinary complications are common. Development of a vaginal remnant or posterior urethral diverticulum in the prior vaginal cavity may cause bothersome urinary symptoms. Perineal approach to the vaginal cavity would require opening the perineal closure and splitting the neoscrotum, with risks for fistulisation of the urethra. A robotic transabdominal approach would allow for resection of the remnant vaginal cavity without violation of the perineal closure. We describe the technique of robotic remnant vaginectomy/excision of urethral diverticulum in transgender men.

Materials and Methods: Between 2015 and 2018, 4 patients underwent robotic remnant vaginectomy/ excision of urethral diverticulum for relief of urinary symptoms. Patients were a mean age of 36 years (range 26 – 50) and were a mean 26 months (range 20 – 39) post-op following their primary radial forearm free flap (n=3) or anterolateral thigh (n=1) phalloplasty. All had multiple urological complications after primary phalloplasty, most commonly urinary retention (n=4), urethral stricture (n=3), fistula (n=3), dribbling (n=2), and obstruction (n=2). Indication for revision was obstruction and retention (n=3) and/ or dribbling (n=2). In each case, the robotic transabdominal dissection freed remnant vaginal tissue from the adjacent bladder and rectum. Concurrent first- or second-stage urethroplasty was performed in all cases at a more distal portion of the urethra, using buccal mucosa, vaginal or skin grafts. Intraoperative cystoscopy was used in each case to confirm complete resection and closure of the diverticulum.

Results: At mean follow-up of 262 days (range 106-412), none had persistent recurrence of vaginal cavity/urethral diverticulum on cystoscopic follow-up. Of 3 patients who wished to ultimately stand to void, 2 were able to do so at follow-up.

Conclusion: Robotic transabdominal approach to remnant vaginectomy/excision of urethral diverticulum allows for excision without opening the perineal closure for management of symptomatic remnant/ diverticulum in transgender men after vaginectomy.

UP-543

Quality of Life Outcomes Following Urinary Diversion – A Patient Designed Survey

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Introduction and Objective: Orthotopic neobladder (ONB) and Ileal conduit (IC) are the most commonly practiced techniques for urinary diversion following cystectomy for bladder cancer. Choice of urinary diversion is influenced by both patient and surgeon preferences, with health-related quality of life (HRQoL) post-operatively being recognized as an important outcome measure. We aimed to assess patient perspectives and HRQoL following urinary diversion surgery using a patient-designed survey.

Materials and Methods: The study included 293 patients who had undergone radical cystectomy for bladder cancer, comprising 186 with ONB and 107 with IC. HRQoL was evaluated using a voluntary electronic survey which was made freely available to patients through Bladder Cancer Australia Charity Foundation website. The survey was designed and initiated by patients, then circulated through patient community groups in Australia, New Zealand, UK, Canada and USA.

Results: Patients in the ONB group had a median surgery satisfaction score of 9 (IQR, 7-10), not significantly greater than the IC group (8, 8-9) (p=0.61). There was no significant difference in the rate of patients experiencing bowel dysfunction in the ONB (99, 57.6%) and IC (50, 53.2%) groups (p=0.52). Median sex satisfaction score was 2 (0-5) and 1 (1-6) in ONB and IC patients, respectively (p=0.48). Males who underwent ONB had a median orgasm score of 2 (1-3), similar to 2 (0-3) in men who underwent IC (p=0.37). Conversely, females who underwent ONB had a lower median orgasm score of 0.5 (0-3.25) compared to 3 (0-3) in females who underwent IC, although not significant (p=0.57).

Conclusion: Overall there was no significant difference in HRQoL outcomes between ONB and IC groups. This is in keeping with recent meta-analyses which show conflicting results. Unique to our study is the development of a HRQoL survey made independently by patient groups, adapted from existing models. Further validation of this survey is required to assess its benefit in future practice.

UP-544

The Value of Sonourethrogram in Pre-operative Anatomical Evaluation of Anterior Urethral Strictures

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Introduction and Objective: Pre-operative assessment is vital in the management of anterior urethral strictures. Studies upon pre-operative imaging assessment of anterior urethral strictures point out that variations in findings about stricture anatomy influence the operative decision making of a surgeon who is going to do reconstruction. Discrepancies between the findings of imaging studies and that of the real length of the stricture were reported in many studies. This study is intended to evaluate the value and peculiar features of sonourethrogram (SUG) in pre-operative assessment of anterior urethral strictures.

Materials and Methods: This hospital based cross-sectional study included forty patients with anterior urethral strictures who underwent surgical reconstruction at Urology Unit, Yangon Specialty Hospital, from January 2017 to January 2018. Pre-operatively, patients underwent SUG and RUG to record number, location, length of stricture, degree of spongiofibrosis and other periurethral findings.

Results: Forty patients with age ranging from 25 – 85 years (mean= 50.05yr.) were studied. Majority (70%) of strictures were in bulbous urethra. SUG has sensitivity of 92.5% in detecting strictures. Average length of all strictures in this study was 1.66 cm. Average length of strictures detected by SUG was 1.5 cm whereas their average per-operative length was 1.45 cm. Average length of strictures detected by RUG was 1.87 cm but their average per-operative length was 1.97 cm. SUG failed to detect strictures in 3 patients in whom the strictures were not purely anterior and were located in bulbomembranous region. SUG could not determine length in a case of pan-urethral stricture. In 7 cases with urethral obliteration, RUG failed to detect stricture length where SUG could detect. Spongiofibrosis could be detected and graded by SUG using the grading by Chiou, et al. 1996. Optical urethrotomy was the most frequently performed procedure (29%).

Conclusion: Both RUG and SUG can detect and measure anterior urethral strictures efficiently in majority of cases. Spongiofibrosis can be well detected by sonourethrogram. SUG is superior to RUG in that it is free from radiation hazard and ability to measure stricture segment in case of obliterated urethral lumen.

UP-545

The Outcomes of Kulkarni's One-Stage Double Buccal Mucosa Urethroplasty in Patients with Panurethral Stricture: A Single Centre Experience

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Introduction and Objective: To present the results of our double buccal mucosal urethroplasty series for panurethral strictures. Materials and Methods: We included the first 35 patients who had one stage double buccal mucosal graft urethroplasty with one side dissection of the urethra which was described by Kulkarni, between January 2015 and June 2018 and had at least 6 months follow-up. From the first case, all data were recorded prospectively and patient age, etiology of the stricture, comorbidities, previous treatments, postoperative maximal flow rate, pre and post-operative erectile function, perioperative and postoperative complications and quality of life questionnaire for this study.

Results: The mean patient age was 58.8 and mean stricture length was 13.6 (10-16) centimeters. Patients had previously 1 to 17 procedures. Patients had a mean peak flow rate of 25.4 mL/sec at the first postoperative visit. During the follow-up period, 6 patients had recurrence and managed with urethral dilation (1), direct vision internal urethrotomy (2), meatoplasty (1) and re-urethroplasty (2). The responses to the questions about satisfaction from the surgery showed that 31 (88.6%) patients were satisfied with the surgery, 33 (94.3%) would prefer this procedure again, if needed, and 31 (88.6%) patients recommended this procedure to others. When patients were grouped according to age, recurrence rate was 35.7% in patients older than 65 years and 4.8% in patients 65 years old.

Conclusion: Our study showed that Kulkarni's one-stage double buccal mucosa urethroplasty technique has a high success rate. The patient satisfaction is high because of the good functional outcomes and low complication rate.

UP.545, Table 1. The preoperative data and the postoperative results of the patients

	No. of patients	%	Mean	Minimal	Maximal
Age			58.8	27	82
Etiology of the stricture					
Idiopathic	9	25.7			
Urethral catheterization	14	40			
Transurethral surgery	11	31.4			
Hypospadias	1	2.9			
Stricture length			13.7	10	16
Prior endoscopic procedures			3.5	1	17
Preoperative peak flow rate (ml/sec)			5.2	0	12.3
Postoperative peak flow rate (ml/sec)			25.4	12.1	40.0
BXO					
Present	11	31.4			
Not present	24	68.6			
Concomitant diseases					
Diabetes mellitus	5	8.6			
Coronary artery disease	6	17.1			
Hypertension	6	17.1			
COPD	2	5.7			
Cancer	5	8.6			
BPH	2	5.7			
Cerebrovascular accident	1	2.9			
Alzheimer's disease	1	2.9			
Chronic kidney failure	1	2.9			
Intraoperative data					
Mean operation time (minutes)			192	160	240
Intraoperative blood loss (ml)			63.3	20	140
Postoperative complications					
Recurrent urethral stricture	6	17.1			
Penile curvature	3	8.6			
Erectile dysfunction	4	11.4			
Urinary incontinence	2	5.7			
Oral numbness	1	2.9			
Oral contracture	1	2.9			

BXO: Balanitis Xerotica Obliterans, COPD: Chronic obstructive pulmonary disease, BPH: Benign Prostatic Hyperplasia

UP-546

Initial Clinical Experience of Indocyanine Green for Intraoperative and Real-time Vascularization of Corpus Spongiosum in Urethral Reconstructive Surgery

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Introduction and Objective: To present our initial experience to intraoperatively highlights vascularization of corpus spongiosum via Indocyanine Green (ICG) visualization under Near-infrared Fluorescent (NIRF) light.

Materials and methods: Indocyanine Green (ICG) evaluation was performed in 7 patients who underwent urethral reconstructive surgery due to urethral stricture with various etiology. Intravenous administration of 5 grams ICG diluted in 2 mL normal saline prior and after intervention of urethroplasty was performed. Near-infrared fluorescent (NIRF) imaging with SPY system (Novadaq) was used to evaluate the expression of ICG in corpus spongiosum.

Results: There were seven patients included in this study. The mean age was 47,29 ± 8.46 years. Five patients with traumatic stricture and planned for excision and primary anastomosis (EPA). The other two patients were idiopathic and planned for substitution urethroplasty. During the surgery, the ICG expression showed 6 patients had favorable corpus spongiosum that treated as preoperative surgical planning. All these patients had successful outcome. One patient who had unfavorable corpus spongiosum due to trauma had changed the intervention from EPA to vascular sparring anastomotic urethroplasty. At the 3-month follow up, this patient had also good outcome with IPSS score 3 and Q-max 22 mL/s. There were no immediate or delayed adverse effects attributable to intravenous ICG administration.

Conclusion: Intravenous injection of ICG during urethral reconstruction surgery allows for real-time vascularization of corpus spongiosum and helps reconstructive surgeon to determine appropriate urethroplasty techniques.

UP-547

Ileocystoplasty in Spinal Cord Injury (SCI) Population - Patient Reported Outcome

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Introduction and Objective: Ileocystoplasty (IC) is the most popular bladder augmentation procedure. According to the literature, it stabilizes renal function and prevents anatomical deterioration. Main indications include detrusor overactivity, congenital and inflammatory bladder diseases. In SCI population, is reserved for those in whom minimally invasive options (like Botox or neuromodulation) have failed. However, many symptomatic patients are reluctant to undertake the IC due to the significant morbidity associated with the procedure and multiple consultations required before they consent. The aim of this study was to assess the outcomes of IC from patient's perspective.

Materials and Methods: We conducted a survey among SCI patient who had IC from 2009 to 2014 at our department. We used the 30 items Qualiveen questionnaire, which has been validated for neurogenic bladder dysfunction. To avoid recall bias, 10 randomly selected SCI who opted for IC served as controls. The primary endpoint was the change in total Qualiveen score. The secondary outcomes were the changes in the Qualiveen domains, quality of life score and the degree of satisfaction in a scale from 0-10. Pearson test was used for correlations and t-test to assess intra-group variability.

Results: The questionnaire was posted to 45 patients and 37 completed it. There was a strong correlation among the preoperation scores and control scores (r=0.894). The mean difference in total Qualiveen score was -21.1 (p<0.001). The mean difference in bother domain was -1.43 (p<0.001), in restrictions domain 0.5 (p=0.03), in forced domain 0.98 (p=0.002), in worries domain -1.09 (p=0.01) and in feel domain -1.16 (p<0.001). Quality of life was improved in 89.2% of patients. At average, each candidate required 10.9 (0-36) months to decide and consent. The degree of satisfaction was 7.83 (0-10). The average recovery time and return to preoperative activities were reported to 5.1 (1-19) months. The most frequently reported complication is urinary tract infections and bladder stones that require 1.2 admissions per year per patient.

Conclusion: The results show that there is high degree of satisfaction, which was evident from qualified scores since all domains were significantly improved. The benefits and the complications of IC should be explained to the patients prior to admission.

UP-548

Substitution of the Distal Ureter Utilizing da Vinci® Robotic Surgical System.

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Introduction and Objective: Ureteroneocystostomy, occasionally with creation of Boari flap, is the best option to substitute for the loss of the distal ureter in both benign and malignant conditions. The procedure is usually performed through a large midline or Gibson incision. Utilizing the robotic da Vinci® surgical system made it feasible to achieve the objectives of the procedure with minimally invasive approach. Our aim is to report our first series of robotic assisted ureteral substitution with and without creation of Boari flap.

Materials and Methods: Between September 2009 and March 2018, we used the de Vinci® robotic system to reconstruct 23 distal ureters for 11 benign and 12 malignant conditions. The distal ureter was excised with bladder cuff in cases of TCC involving the distal ureter. The proximal ureteral end was spatulated and re implanted to the bladder either directly or after developing Boari flap to enable tension free, leak proof anastomosis. The robotic surgical system fwe implanted 6 right ureters and 7 left ureters into theoretically created Boari Flap. Negative margin was insured in all the malignant cases.

Results: The average patient age was 67 years (ranging from 34-79). We had 6 male and 7 female patients. All cases were completed robotically with no conversion, the patients were followed for an average of 35 months (ranging from 3 months to 72 months). The ureters were patent in all of the 4 (30%) patients who had benign ureteral stricture. However, 3 patients (23%) who had lower ureteral TCC developed ureterovesical anastomosis stricture. All of the strictures were due to high grade TCC on the initial and final pathology after nephroureterectomy with excision of the flap. One patient with history of high grade TCC of the lower ureter developed multifocal high grade TCC in the renal pelvis on the same side 3 years later.

Conclusion: Robotic reconstruction of the lower ureter with Boari flap is feasible and has an acceptable oncologic outcome. High grade TCC of the lower ureter is predictor of recurrence at the anastomosis. Longer follow up is needed especially in cases of malignancy.

UP-549

Robotic Fascial Sparing Rectus Abdominis Harvest

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Introduction and Objective: The rectus abdominal muscle is a useful flap for multiple surgical repairs including complex urethral fistula repair. Traditionally, open harvest with anterior sheath violation has been performed with significant donor site morbidity including hernias, bulges, infections as well as poor cosmesis due to a large incision. The increasing ubiquity and minimally invasive nature of robotics allows for a fascial sparing technique, mitigating morbidity. Materials and Methods: In 2018, four robotic rectus muscle harvests were performed at our institution by the surgeon authors, a urologist and a plastic surgeon, for complex urethral fistula repair. The operating robot (XI or SP) was docked with a GelPort into the intra-fascial space through a 3mm incision. The rectus muscle was freed robotically up to its costal and subxiphoid margin and brought down off the posterior and surrounding fascial sheath. The flap was subsequently used for pelvic soft tissue repair. Demographic as well as peri-operative variables and outcomes were recorded.

Results: All patients were male with a mean age was 65.8 (range 58-74) and mean BMI 28 (range 22.4-32.7). Mean EBL for the rectus harvest portion of the procedure only was 10cc. Two harvests were for rectourethral fistula repair, one vesicocutaneous fistula and one vesicopubic fistula repair. All harvests were completed robotically without the need for open conversion. All flaps were deemed viable intra-operatively with the use of Doppler. No patients experienced a hernia, bulge or infection at the harvest site with a mean of 5.6 months follow up (range 2-12.2). One patient experienced a harvest site seroma necessitating drainage.

Conclusion: Robotic, fascial sparing rectus abdominis harvest is safe and feasible with demonstrated reproducibility in four patients. A small incision, preserva-

tion of the fascia and minimally invasive technique facilitates decreased morbidity and makes this an attractive technique for recuts flap harvest.

UP-550

Lingual Versus Buccal Mucosal Graft for Substitution Urethroplasty: A Meta-Analysis of Urethroplasty Outcome and Patient-Reported Harvest Site Outcomes

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Introduction and Objective: Lingual mucosal graft (LMG) and buccal mucosal graft (BMG) are both used as autologous tissue graft for substitution urethroplasty. We aim to compare urethroplasty outcomes and patient-reported harvest site morbidities between LMG and BMG through meta-analysis of comparative studies.

Materials and Methods: A systematic literature search was performed in January 2019. Both non-randomized comparative studies and randomized controlled trials (RCT) were evaluated according to Cochrane Collaboration recommendations. The assessed data included urethroplasty outcomes, complications, and harvest site morbidities such as pain, bleeding, swelling, numbness, difficulty speaking, difficulty eating, mouth opening and tongue protrusion. Risk ratios (RR) with corresponding 95% confidence intervals (CI) were extrapolated. Effect estimates were pooled using the Mantel-Haenszel method with a random-effects model. PROSPERO registry (CRD42018106138).

Results: A total of 632 patients (LMG 323, BMG 309) from 12 comparative studies (4 RCTs and 8 non-randomized) were included for meta-analysis. Overall pooled effect estimates revealed no significant difference between the groups on reported urethroplasty outcomes and operative stricture-related complications. Effect estimates for patient-reported graft harvest site morbidities such as bleeding, pain/discomfort and food intake did not show any differences between the groups at <1-month, 1-3 months and up to 6-12 months follow-ups. However, LMG group reported a higher proportion of patients with difficulty speaking (RR 6.96, 95%CI 2.04-23.70) and tongue protrusion (RR 12.93, 95%CI 3.07-54.51) within 3-21 days post-op. The LMG group had significantly less incidence of early post-procedural harvest site swelling (RR 0.39, 95%CI 0.25-0.61) and numbness at <1-month (RR 0.48, 95%CI 0.23-0.97) and 3-6 months (RR 0.52, 95%CI 0.30-0.90) follow-ups. Difficulty in mouth opening was also reported to be significantly lower among LMG group at <1-month follow-up (RR 0.21 95%CI 0.12-0.37).

Conclusion: The evidence suggests no overall significant difference between LMG and BMG in urethroplasty outcomes, harvest site bleeding, pain/discomfort and food intake during up to 12-month follow-up. However, patients undergoing LMG urethroplasty have a higher chance of experiencing difficulty of speech and tongue protrusion within 1-month post-op. The BMG group has a higher likelihood of experiencing early harvest site swelling, mouth opening difficulty in 1-month post-op, and numbness up to 3-6 months.

UP-551

In Situ Replantation Emergent Repair of Ureteroscopy-related Full-length Ureteral Avulsion: A Report of Four Cases

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Introduction and Objective: To investigate the clinical efficacy of in situ replantation emergent repair of ureteroscopy-related full-length ureteral avulsion, and to provide a reference for the treatment of such serious complications.

Materials and Methods: A retrospective analysis of 4 cases of ureteroscopy-related full-length ureteral avulsion repaired by in situ emergent replantation in 4 comprehensive hospitals in Shanghai in recent 5 years was performed. The proximal end-to-end ureteroureterostomy combined with distal ureteroneocystostomy was resorted to during the repair. Perioperative and follow-up related parameters were analyzed.

Results: The average operation time of the 4 patients was 4.75±0.65 hours (4.0-5.5 hours). 3 cases (75%) were treated with greater omentum investment and 1 case (25%) underwent anti-reflux ureteroneocystostomy plus vesico-psoas hitch. Percutaneous nephrostomy was performed in 2 cases (50%). The median follow-up time was 24 months (6-54 months). The average DJ stent duration was 6.75±1.89 months (4-8 months) and the average nephrostomy duration was 7.25±11.41 months (0-24 months). The renal function and hydronephrosis of all the 4 patients were generally stable during the perioperative period and follow-up.

Conclusion: In situ replantation emergent repair based on end-to-end ureteroureterostomy and ureteroneocystostomy should be given priority to under the equal condition due to restoring the natural structure and physiological function of the ureter to effectively protect the renal function.

UP-552

Use of a Split Pedicled Gracilis Muscle Flap in Robotic-Assisted Vaginectomy and Urethral Lengthening for Phalloplasty: A Novel Technique for Masculinizing Genital Reconstruction

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Introduction and Objective: We describe the technique of robotic vaginectomy, anterior vaginal flap urethroplasty, and use of a longitudinally split pedicled gracilis muscle flap to recreate the bulbar urethra and fill the vaginal defect in gender affirming phalloplasty.

Materials and Methods: Vaginectomy is performed via robotic assisted laparoscopic transabdominal approach. Concurrently, gracilis muscle is harvested and passed through a tunnel between the groin and vaginal cavity. It is then split longitudinally, and the inferior half is passed into the vaginal cavity, where it is inset into the vaginal cavity. Following urethroplasty, the superior half of the gracilis flap is placed around the vaginal flap to buttress this suture line with well-vascularized tissue.

Results: From 2016 to 2019, 28 patients underwent this procedure, of average age 32.8 ± 8.9 years, BMI 29.5 ± 5.0, and ASA class 1.8 ± 0.6. The average length of operation was 423.6 ± 86.9 minutes, with an estimated blood loss of 208.9 ± 88.6 mL. Patients were typically out of bed on post-operative day 1, ambulating on post-operative day 2, and discharged home on post-operative day 3 (average day of discharge 3.2 ± 1.4 days). At mean follow-up time of 404.5 ± 272.6 days, 9 (32.1%) patients had developed urethrocutaneous fistulas (with 2 patients developing 2 fistulas) and 2 (7.1%) patients had developed either a stricture or stenosis. Of the 9 patients who developed fistulas, all were at the base of the neophallus near the penoscrotal junction. In two cases, patients developed both a midshaft and penoscrotal fistula. Two fistulas healed spontaneously, and the remainder required surgical repair with one patient developing recurrence. One patient developed a stricture 5mm from the bladder neck after robotic vaginectomy which was refractory to balloon dilation requiring suprapubic tube placement.

Conclusion: Use of the split gracilis muscle in first stage phalloplasty represents a novel approach of providing well-vascularized tissue for both urethral support and closure of intra-pelvic dead space with a single flap, in a safe, efficient, and reproducible manner. While fistulas are a common complication after 2nd stage urethroplasty, they are detected rapidly and managed without complication in the majority of cases.

UP-553

Mitomycin C Injection with Bladder Neck Incision for Refractory Bladder Neck Contractures – Safe and Minimally Invasive

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Introduction and Objective: Bladder neck contracture (BNC) is a known complication of radical prostatectomy and endoscopic prostatectomy. First line treatment with urethral dilation or bladder neck incision (BNI) is usually successful. However, some patients have recalcitrant BNC resistant to standard treatment. Second line treatment options for these patients include BNI plus intralesional triamcinolone or mitomycin C (MMC) injection, or open bladder neck reconstruction. We aim to report our experience with BNI and intralesional MMC injection for refractory BNC. Materials and Methods: From July 2014 through to Jan 2019, men who underwent BNI and intralesional MMC injection performed by the senior author were included in this retrospective study.

Clinicopathological data were extracted from medical records. Primary outcome was BNC recurrence rate. Secondary outcome was changes to incontinence and other significant complications.

Results: Ten men were included with a median age of 68 (IQR 62-71). The cause of BNC was radical prostatectomy in eight patients and endoscopic prostatectomy in two patients. The median number of endoscopic procedures for BNC prior to BNI and MMC injection was 3 (IQR 2-4). The median time between each endoscopic treatment was 2.5 months (IQR 1-7). We injected 0.8mg of MMC in two patients, 1mg in seven patients and 2mg in one patient. Seven patients (70%) had a successful outcome with a median follow-up of 12 months (IQR 10-22). Two men underwent a repeat procedure with one having durable response after 9 months. Both patients with urinary continence pre-operatively remained continent post-operatively. No Clavien-Dindo grade 3 or above complications directly related to MMC were recorded.

Conclusion: BNI and intralesional MMC injection is a safe and minimally invasive option for the management of recalcitrant BNC with a success rate of 70% after first injection and overall success rate of 80%. This result is similar with other series and similar to success rates of open bladder neck reconstruction. No significant adverse outcome was observed in our cohort, which we attributed to the low dose of MMC used. Further prospective randomised controlled trials would be required to compare the efficacy of this treatment with other options.

UP-554

Successful Endourological Management of Ureteral Strictures After Renal Transplantation

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Introduction and Objective: This work aims to evaluate the endourological treatment of ureteral stricture following renal transplantation

Materials and Methods: Between 1996 and 2019, 173 renal transplantation were carried out in Al-Hada Armed Forces Hospital, Taif. Patients developed late ureteral strictures were identified. Patients demographics were studied. Diagnosis was made by progressive rising of serum creatinine and graft hydronephrosis. Percutaneous nephrostomy was the cornerstone on diagnosis and antegrade pyelogram was done to show the level and length of stricture in all patients.

Results: Four patients out of 173 renal transplanted recipients developed late ureteral stricture after mean period of 4.8 ±3.6 years. There were 3 males and one female with mean age of 34 ± 7.6 years. Three grafts were harvested from cadaveric donors. Serum creatinine on presentation was 436 ±157 umol/L. Antegrade pyelogram showed stricture lower end ureter in two patients successfully treated by endoscopic meatotomy and DJ stent placement. Two patients had narrow whole ureter; one of them successfully treated by balloon dilatation and the other required Boari Flap. Patients had serum creatinine of 159 ±76 umol/L on the last follow up.

Conclusion: Transplanted ureter endoscopic meatotomy and ureteral dilatation are successful options for treating patients with ureteral stricture and should be tried before any open surgical procedures.

UP-555

Management of Urethral Strictures in Patients with Kidney Transplants

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Introduction and Objective: Urethral strictures occur in 1-2% of kidney transplant patients. We present our experience in managing strictures in this particularly challenging patient population.

Materials and Methods: Over a three-year period, 14 renal transplant patients were referred to our reconstructive urology unit for management of their urethral strictures. In 12 patients the stricture occurred on average 17 months (range 6-48 months) following the transplant. In 2 patients the stricture was present prior to transplantation (pelvic fracture urethral injury in 1; hypospadias in the other) but they were referred for stricture management after the transplant. Patients were evaluated clinically, by flow rate and urethrography. Mean follow-up in those undergoing urethroplasty was 22.3 months.

Results: 8 strictures (57%) were bulbar, 2 penile (14%) and 4 pan-urethral (29%). 5 patients (36%) had obliterative strictures and were referred with a suprapubic tube in-situ; 5 (36%) presented with poor flow; 4 (28%) had recurrent urinary infections. In the 12 patients with strictures after transplantation, contributory factors to stricture formation were traumatic catheterisation and urinary tract infections. 2 patients had concomitant pancreatic transplants. In them, irritation of the urethral mucosa by pancreatic enzymes was the most likely cause. 7 patients (50%) underwent urethroplasty (2 non-transecting anastomotic bulbar; 1 augmented non-transecting bulbar; 2 dorsal patch augmentation bulbar; 2 single-stage pan-urethral with bilateral sublingual grafts). Surgery was successful in 6 of the 7 (86%). 3 patients were managed with perineal urethrostomy, 2 by interval urethral dilatation and the other 2 perform self-catheterisation.

Conclusion: Urethral strictures in renal transplant patients are uncommon, with a surprisingly high incidence of obliterative and pan-urethral strictures. Nevertheless, selected cases can be managed safely and effectively by urethroplasty. Perineal urethrostomy is an effective alternative in those not suitable for reconstruction.

UP-556

Laparoscopic Nephrectomy with Renal Autotransplantation for Ex-vivo Correction of Complex Renal Artery Aneurysms - A Safe Minimally Invasive Approach

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Introduction and Objective: Renal artery aneurysms (RAA) affect 0,3%-1,3% of the general population. Some cases due to the location or size are not feasible by endovascular repair and demand *ex-vivo* reconstruction of the artery with autotransplant.Laparoscopic nephrectomy (LN) has proven benefits in allotransplantation, however little is known about its safety in this particular scenario.

Materials and Methods: We retrospectively analyzed surgical and functional results, and complications from 22 patients who underwent LN for *ex-vivo* correction of RAA between 2012 and 2018. LN using a transperitoneal four-port technique was performed. After kidney perfusion with Celsior preservation solution in a back-table, the aneurysms were repaired, and kidneys reimplanted in the ipsilateral iliac fossa.

Results: Patient's mean age was 49±16 years [16-74]. Fourteen cases (64%) were affecting the right kidney. The mean diameter of the aneurysms was 24,7mm [IQR 17,5-29]. All were type II by the Rundback classification (13 bifurcation of renal artery, 9 hilar). Mean duration of LN was 113min [IQR 85-138]. No intra-operative complications were reported. Mean warm and cold ischemic time were, respectively, 220seconds [IQR 159-300] and 153minutes [IQR 126-180]. Nephrectomy duration and warm ischemia time correlated inversely with case number (r=-0,686, p<0,001 and r=-0,485, p=0,019 respectively). According to the Clavien-Dindo system, 5 patients (23%) had grade 2 complications, and 4 (18%) grade 3 complications. Two patients lost the kidney (9%), one due to arterial thrombosis and another due to renal vein thrombosis.The rate of autotransplant success was 91% (n=20), and these kidneys presented normofunction during the all-time of follow-up. No significant difference was found between preoperative mean serum creatinine (Cr) (0,82 mg/dL) and postoperative Cr (0,81 mg/dL) at a mean follow-up of 33±19 months (p=0.89).In 53% patients there was a reduction in the mean arterial pressure, traducing in a lower number of anti-hypertensive agents or diminished dosages.

Conclusion: LN is a feasible minimally invasive alternative to treat RAA with indication for autotransplant. It decreases morbidity, while presenting low complication rates and preserving renal function with excellent long-term results. The better surgical results with the increase in case number reflect the importance of referral for tertiary centers.

UP-557

DE Novo Malignancy After Kidney Transplantation

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Introduction and Objective: Malignancy is considered the second cause of mortality after cardiovascular diseases in Renal Transplantation (RT) patients. The risk of dying from malignancy in those patients is double fold normal population. Malignancies are diagnosed at younger age and at higher stages compared to patients without transplantation and are associated with worse outcomes. This retrospective study aims at review of all patients who developed de Novo malig-

nancy after receiving kidney transplant and are followed up in our hospital from 2000 to 2018.

Materials and Methods: This is retrospective study depending on database of renal transplantation unit in our hospital. We have 385 patients post-RT who are following up in our center. Patients records were reviewed to evaluate the duration of pre-RT hemodialysis, type of kidney donor (cadaveric or live donor, related or unrelated), immunosuppression protocol, the post transplantation time until developing malignancy, also type of diagnosed malignancy, and its management protocol.

Results: Out of 385 cases of RT who has follow up in our center from 2000 to 2018, 9 cases (2.34%) of post-RT malignancy has been diagnosed; 4 cases with skin cancer (3 cases basal cell carcinoma, one case squamous cell carcinoma), 2 cases with thyroid papillary carcinoma, one case with testicular seminoma, one case with muscle invasive bladder urothelial carcinoma and last case with graft renal cell carcinoma. Mean age at diagnosis was 53.6 years while mean post-transplantation duration before malignancy was 10.5 years. Two of them received unrelated kidney donors, one cadaveric kidney and one had second kidney transplant. Two cases (22.2%) died of malignancy including a case of advanced graft RCC who died of inoperable malignancy.

Conclusion: The risk of developing post renal transplantation malignancy is higher than normal population. Patients receiving kidneys of unrelated donor, cadaver or re-transplant are at higher risk possibly due to more aggressive immunosuppressive protocols. Aggressive behavior of these malignancies highlights the necessity of long life follow up putting a high index of malignancy suspicion for early diagnosis. Also, immunosuppression protocols need to be tailored after cancer diagnosis.

UP-558

BK Polyoma Virus Associated Urothelial Malignancy of the Graft Kidney Posing an Immuno-Oncological and Surgical Challenges. A Highlight into Intra-Operative Difficulties and Brief Review of Literature.

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Introduction: Renal transplant offers the best long-term outcomes in patients with ESRD. There are many long-term complications associated with renal allograft transplant. One of them is opportunistic infection by BK virus and development of Transitional cell cancer, which, often leads to early graft loss. Case History: A 57-year-old lady, received live related renal allograft transplant in October 2007. She was under close follow up and during May 2012, she had worsening renal parameters with a creatinine of 2.7mg/dl. She was subjected to graft biopsy, which revealed Interstitial fibrosis and tubular atrophy (IFTA) grade II. Five months later, she was declared as graft failure and started on hemodialysis. She underwent second live unrelated renal transplant in September 2015. Patient then noticed swelling and heaviness in right lower abdomen. Extensive radiological investigations revealed a large heterogeneous mass in graft kidney and graft biopsy revealed, high-grade urothelial malignancy associated with BK virus. Serum BKV was also positive. Radiology findings were suggestive of the mass infiltrating anterior abdominal wall and Right external Iliac vessels being completely encased by the lymph nodal mass with PET CT showing a 1.4 cms right upper lobe lung lesion, multiple avid pelvic LN. Neoadjuvant chemotherapy in the form of 6 cycles of gemcitabine and cisplatin was provided. Follow up CT scan suggestive of resolution of lung lesions and pelvic lesions. Right open radical graft nephroureterectomy was performed. Intra-operatively, dense adhesions between the posterior surface of the kidney with external iliac vessels were present. There were no perioperative complications. Histopathological diagnosis confirmed High-grade urothelial malignancy with the invasion of renal parenchyma and no lymph nodal spread, T3N0 disease.

Conclusion: We report a rare case report of TCC developing in first graft kidney and requirement of multimodality treatment for the same. Many challenges were encountered in the form of, multiple alterations of Immunosuppression regime to best suit the patient profile, moderating neoadjuvant chemotherapy in a renal allograft recipient and surgical difficulties encountered during removing the kidney with minimal morbidity. Patient has completed her 3 months follow up and is doing well.

UP-559

Single Center Experience of Pediatric Renal Transplantation at PKI, SIH.

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Introduction and Objective: The pediatric kidney transplant recipients have challenges drug metabolism and clearance, perfusion of transplanted organs, and risk for post-transplant lymphoproliferative disease. They have special quality of life issues such as cosmetic side effects, stunted growth, problem of adolescent children nonadherence to immunosuppressive therapy. We hereby share our experience regarding outcome and complications in pediatric transplant.

Materials and Methods: Total of 37 patients underwent Live related kidney transplant at our center from June 2005 till December 2015. They were evaluated before renal transplant and cross matching and HLA typing was done. Twenty-three children had single antigen match, while 5 patients had 2 antigen match, 7 patients had 3 antigen match, one had 4 antigen match and 1 patient had 6 antigen match. Kidney transplant was done by standard technique, and kidney was placed in the abdomen, and renal artery was anastomosed to the aorta. Ureter was anastomosed to the bladder by creating a submucosal tunnel for anti-reflux mechanism. We collected data retrospectively for variables like age, weight, mean operative time, mean hospital stay and JJ stent.

Results: We operated 37 children having end stage renal disease for renal transplant having a mean age of 13.06± 3.90 years. Mean dry weight was 37.53±15.40 kilograms. Mean operative time was 396.57±25.04 minutes and mean hospital stay was 6.14±0.89 days. There was single renal artery in 35 patients while 2 children had 2 renal arteries. Permanent Graft dysfunction was seen in 6 patients while graft failure in 5 patients. Time of rejection was 6 months for 5 children,7 to 12 months for 1 patient while 4 patients had it after 1 year. one patient had graft failure after 10 years. We used Double J stent for ureter in 5 patients. Recurrent UTI was seen in 9 patients. One patient had a stricture at vesicoureteric junction while another patient had ureteric stricture at mid ureter. They were managed by reimplantation of the ureter. We had 94.6% graft survival in first six months, 91.9% after one year and 86.5% survival after 5 years.

Conclusion: Pediatric renal transplant poses challenges like graft failure, medication compliance and follow up problems in developing country, but with meticulous follow up and education of parents can result in overall improved results.

UP-560

Impact of Socioeconomic Disparity and Pre-Existing Comorbidity on Outcome Following Kidney Transplantation in End-Stage Renal Disease Patient with Chronic Hepatitis B Infection: Retrospective Analysis of Health Care Claims Data

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Introduction and Objective: Even with potent nucleos(t)ide analogue (NA) therapy, rapid viral replication and hepatic disease progression are frequently encountered in Hepatitis B virus (HBV)+ ESRD patients after renal transplantation (KT). However, its real long-term disease nature in HBV+ ESRD patients were still unclear. Objectives behind this study was to evaluate long-term clinical outcome and associated risk factors of HBV+ KT in different period of NA availability and National Health Insurance (NHI) reimbursement, and further, to improve current treatment strategies.

Materials and Methods: We conducted a nationwide retrospective population-based cohort study during 2000-2013 period. The enrolled participants were categorized into two cohorts based on the presence of HBV infection, HBV+ cohort and non-HBV+ cohort. The main primary outcomes were patient survival and graft survival. Secondary outcomes were rate of HBV-related renal and hepatic complications (hepatic decompensation and liver cancer). All data analysis was performed with SAS 9.4 software (SAS Institute Inc.).

Results: Of 5819 KT recipients, 4438 patients were recruited, consisting of 416 in HBV-group and 4422 in non-HBV group. The baseline clinic-demographic characteristics were well balanced except higher rate of male participants and younger in HBV group than those in non-HBV group. There was no significant difference in graft survival (p=0.215), but inferior patient survival (p<0.001) in HBV group. During study period, HBV group had a higher incidence of liver cancer (Hazard ratios (HR), 7.80 [95%confidence interval (CI),4.80-12.67], p<0.001), but were not significantly different from non-HBV group regarding the rate of re-dialysis, acute kidney injury and hepatic

decompensation. Family income seemed to exert a protective effect on renal complications.

Conclusion: Socioeconomic disparity and co-morbidities impacted negatively on renal and hepatic complications after KT in HBV+ ESRD patients, worsening particularly in renal counterparts, though short-term patient and kidney allograft survival in HBV+ recipients were comparable to HBV- recipient in contemporary era of potent NAs.

UP-561

The Implication of the Dominant Side Split Renal Function by Diethylenetriamine Penta-Acetic Acid (DTPA) in Live Kidney Donor

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Introduction and Objective: Long-term studies of live kidney donors have shown that living kidney donation is safe and rarely affects the individual's health. However, there are a few references about which kidney donor selected. Kidney Disease Improving Global Outcomes (KDIGO) recommends a significant difference in split renal function between the two kidneys, the kidney with lower function used for transplantation. Our aim was to study the split renal function as measured by DTPA in live kidney donors and its impact on kidney selection decision. Materials and Methods: From January 2008 to May 2015, 430 living kidney donors were enrolled. All donors underwent preoperative DTPA. We divided recessive side kidney donor group and dominant side kidney donor group. Live kidney donors who gave the dominant side were spilt into a difference of 7%, 8%, 9% and 10%. Moreover, renal function was compared according to the time. Continuous and categorical variables were compared using ANOVA in the 3 groups. Results: There were no differences in demographics and eGFR between 3 groups a disparity in 7%, 8%, 9% and 10%. The renal function at 6th month were 64.02±11.34, 63.98±14.00 and 64.43±15.58 in the group of 7% disparity (p= 0.970). 64.02±11.34, 64.45±14.51 and 62.04±7.60 in group of 8% disparity (p= 0.494). 64.02±11.34, 64.42±14.38 and 61.79±7.27 in group of 9% disparity (p= 0.481). 64.02±11.34, 64.43±14.18 and 60.85±7.32 in group of 10% disparity (p= 0.338). There was no effect on renal function in dominant side kidney donor compared to recessive side.

Conclusion: There was no difference in renal function after dominant side kidney donor up to 10% when determining the donor aspect with the split renal function.

UP-562

Monitoring Cellular Immune Function of Renal Transplant Recipients Based on Adenosine Triphosphate (ATP) Production by Mitogen-Induced CD4+ T Helper Cells

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UP.560, Table 1. Demographic and Clinical Characteristics of the Study Cohort at Baseline

Characteristic	HBV- group (n=4,422) n (%)	HBV+ group (n=416) n (%)	Total n (%)	P-value*
Age, yrs.	46.14±11.81	45.75±10.34		0.016
18-39	1345 (30.4)	120 (28.8)	1465	
40-49	1267 (28.7)	146 (35.1)	1413	
50-59	1274 (28.8)	115 (27.6)	1389	
≧60	536 (12.1)	35 (8.4)	571	
Gender				<0.001
Female	2148 (48.6)	148 (35.6)	2296	
Male	2274 (51.4)	268 (64.4)	2542	
Urbanization #				0.380
Urban	2874 (67)	264 (65.2)	3138	
Suburban	500 (11.7)	43 (10.6)	543	
Rural	915 (21.3)	98 (24.2)	1013	
Family income (NTD)				0.273
≤$15840	1558 (35.2)	136 (32.7)	1694	
$15841-28800	1716 (38.8)	154 (37)	1870	
$28801-45800	695 (15.7)	74 (17.8)	769	
>$45800	453 (10.2)	52 (12.5)	505	
Diabetes mellitus	665 (15)	67 (16.1)	732	0.561
Hypertension	2607 (59)	255 (61.3)	2862	0.353
Hyperlipidemia	848 (19.2)	75 (18)	923	0.569
Coronary artery disease	504 (11.4)	45 (10.8)	549	0.721
COPD	270 (6.1)	30 (7.2)	300	0.371

¶ COPD: Chronic obstructive pulmonary disease; HBV: hepatitis B virus; KT: Kidney transplantation; NTD: New Taiwan dollar;
@Plus-minus are mean±SD. Because of rounding, percentages may not sum to 100.
Data were missing for 144 patients * Chi-squared test * p-value < 0.05

UP.561, Table 1. Comparison of 3 groups (Group I: recessive side kidney donor, Group II: dominant side kidney donor 7% less, Group III: dominant side kidney donor 7% above)

	Group I	Group II	Group III	p-value
No. pts	236	153	41	
Mean gap of split renal function		3.08(1.85)	10.81(4.85)	
Mean Age(SD)	42.03(11.99)	41.16(11.75)	43.56(9.41)	0.482
Mean kg/m2 BMI (SD)	23.26(2.48)	23.34(2.75)	23.93(3.15)	0.327
Mean preop value (SD):	97.76(20.21)	95.28(18.92)	96.95(24.64)	0.497
eGFR (ml/min/1.73 m2)				
Mean postop value (SD):				
eGFR (ml/min/1.73 m2)				
1week	57.52(11.25)	58.72(12.46))	57.59(9.03)	0.829
1month	62.00(10.94)	61.06(13.04)	60.93(12.48)	0.825
3month	62.87(11.67)	62.33(13.68)	62.30(12.17)	0.952
6month	64.02(11.34)	63.98(14.00)	64.43(12.58)	0.970

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Introduction and Objective: Maintaining the balance between over- and under-immunosuppression has a critical role for successful immunosuppressive therapy after renal transplantation. We studied the predictive value of our functional immune assay, which works based on adenosine triphosphate (ATP) levels, in determining risk of infection and rejection among renal transplant recipients (RTRs).

Materials and Methods: A total of 65 RTRs with less than 1 month (RTRL1) and 48 RTRs with more than 6 months (RTRM6) of post-transplant time, and 56 healthy individuals were included. Upon lymphocyte activation by phytohemagglutinin (PHA), CD4+ T cells were separated using magnetic beads (Dynabeads), the intracellular ATP (iATP) concentrations were measured by luciferin-luciferase reaction, and compared within and between the groups.

Results: Activated CD4+ cells iATP production directly correlated with posttransplant time (r= 0.32, P= 0.011). The iATP levels were significantly lower in both RTRL1 and RTRM6 groups compared to control (P <0.001), and in the RTRL1 group compared to the RTRM6 (P <0.05). The iATP concentrations were significantly lower in patients who suffered from infection versus the RTRs with stable graft function (SGF). However, the iATP levels were higher in those with allograft rejection episode (ARE). Our optimization experiments showed that best iATP levels cutoffs were 472.5 and 572.5 ng/mL for predicting risk of ARE, and 218.5 and 300.5 ng/mL for predicting risk of developing infection in RTRL1 and RTRM6 patients, respectively.

Conclusion: iATP levels measured by immune function assay might be a promising predictive tool for identifying RTRs who are at risk of developing infection or allograft rejection.

UP-563

Does Kidney Transplantation with Multiple Arteries Affect Graft Survival?

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Introduction and Objective: Kidney grafts with multiple arteries have been suspected to be associated with a higher incidence of vascular and urological complications and to affect subsequent renal function. We intend to compare renal transplant short and long-term outcomes between grafts with single versus multiple arteries.

Materials and Methods: We analyzed retrospectively data from 219 living donors kidney transplanted patients between 2001 and 2018. Renal grafts were divided into 2 groups: 159 with single renal artery (SRA), and 43 with multiple renal arteries (MRA). Patient and graft survival were compared between these 2 groups using Kaplan-Meier survivorship curves and the results were compared using the log rank test.

Results: Both groups were also comparable regarding acute rejection, post-transplantation hypertention, post surgery renal artery stonosis and urological complications. Only hemorragic complications and renal artery thrombosis were significantly higher in MRA: p value 0.027 and 0.003 respectively. Warm ichemia timewas significantly longer in MRA without any influence on the incidence of acute tubular necrosis (p= 0.2). Mean creatinine clearance at 1 year was 65 vs. 50 mL/min/1.73 m2 (p= 0.5). At 5 years, it was 60 vs. 55 ml/min/1.7 m2 (p= 0.1) respectively in SRA and MRA. Return to hemodialysis was necessary for 18.8% of the SRA group and 16.1% of the MRA group.

Conclusion: The use of MRA allograft is a safe and successful surgical procedure, without influence on patient or graft survival and without increasing of surgical complications rate.

UP-564

Solid Tumors After Kidney Transplantation: About 5 Cases

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Introduction and Objective: Neoplasia is one of the most serious late complications of kidney transplantation. The neoplastic risk is multiplied by 3 to 5 compared to the general population. Immunosuppressive therapy is the predominant promoting factor. Radiological exploration plays an essential role in the pre-transplant assessment of the tumor-seeking donor and in the long-term follow-up of the graft to detect tumors at an early stage for conservative treatment.

Materials and Methods: This is a retrospective study of a series of 5 kidney transplant patients between 1994 and 2018 in whom a solid tumor was found in follow-up.

Results: The sex ratio women/men was 4. The average age was 38.5 years old (range 26-51). The delay between renal transplantation and the positive diagnosis of the tumor was 2.5 years. An abdominal or thoracoabdominopelvic CT scan was performed in all 5 cases. An abdominal ultrasound in 3 cases. Histological confirmation was obtained in all 5 cases. Tumors found in our series were Kaposi's sarcoma in two cases with digestive and cutaneous localization (1 case) and digestive, cutaneous and thoracic localization (1 case). Lymphoma was found in two cases, including large cell lymphoma with bowel and ganglion involvement (1 case) and Hodgkin's disease (1 case). Adenocarcinoma of the graft was found in one case. Each patient had the targeted treatment of his disease.

Conclusion: The kidney transplantation is at risk of neoplastic complications due to immunosuppressive therapy. This risk is very often linked to oncogenic viral infections that partly explain the originality of the cancers observed. The most common tumors are: cutaneous tumors, cervical and rectal cancer, renal cell carcinoma, Kaposi's sarcoma and lymphoproliferative syndroms. Radiological exploration is involved in pre-transplantation procedure screening for neoplasia and plays an essential role in long-term follow-up of the graft. Indeed, regular ultrasound monitoring makes it possible to detect these tumors at early stages, for which conservative treatment is possible.

UP-565

Ureterovesical Leak Requiring Intervention Following Renal Transplantation: Can we Anticipate it? A Single Institution Nested Case-Control Analysis and Long-Term Outcomes of 790 Consecutive Renal Transplant Recipients

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Introduction and Objective: We assessed the predictors for ureterovesical leak in a group of recently operated renal transplant recipients.

Materials and Methods: 790 recipients who underwent live related renal transplantation at a high volume transplant center in North India during a 6 year time period between January 2012 to May 2018 were retrospectively analysed and studied in a nested case-control design. All donor nephrectomies were done by experienced urologists taking special care to preserve the golden triangle. The recipient surgeries were also done by experienced surgeons and all ureterovesical anastomoses were done using stented extravesical tunneled Lisch- Gregoire technique. Cases

UP.565, Table 1.

Sl no	Factor	Leak group	Control group	p-value (univariate)	p-value (multivariate)	OR (Odd's Ratio)	CI (Confidence Interval)
1	ABO incompatibility	5/12	5/48	0.009	0.11	-	-
2	Acute rejection	5/12	4/48	0.004	0.94	-	-
3	Plasmapheresis	6/12	5/48	0.002	0.001	33.64	(3.84 – 294.36)
4	Complete HLA mismatch	4/12	5/48	0.047	0.043	6.90	(1.07 – 44.63)
5	Age (Mean in years)	45.17	36.94	0.019	0.006	1.14	(1.04 – 1.25)
6	Male Sex	1/12	5/48	0.83	-	-	-
7	Diabetes	2/12	3/48	0.243	-	-	-
8	ATG induction	4/12	20/48	0.6	-	-	-
9	Second transplant	2/12	4/48	0.39	-	-	-

with abnormal bladder profile in the recipients were excluded. 12 cases of ureterovesical leak were identified. 48 controls were taken by selecting 2 patients prior and 2 after each case of leak according to their number in the transplant register. Both the groups were comparable in terms of basic demographic parameters. Chi-square test was used for univariate analysis and multivariate analysis was done using binary logistic regression.

Results: 12 out of 790 (1.5%) patients presented with ureterovesical leak in the postoperative period requiring intervention. ABO incompatibility, complete HLA mismatch, acute rejection, plasmapheresis and increased age were found to significant factors while plasmapheresis, complete HLA mismatch and increased age were significant in multivariate analysis also with plasmapheresis having the highest Odd's ratio of 33.64 (95% CI from 3.84 – 294.36). Factors such as diabetes, ATG induction and second transplant status were not significant. None of the patients required surgical intervention as leak resolved in all these patients by conservative therapy.

Conclusion: ABO incompatibility, rejection and antirejection therapy involving plasmapheresis and increased age were found out to be significant factors contributing to ureterovesical leak post renal transplantation.

UP-566

Is There A Place For Prostate-Specific Antigen Screening in Renal Transplant Patients?

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Introduction and Objective: The rising age of renal transplant recipients is accompanied by the increased risk of potential malignancies. Prostate cancer is one of the most common cancer amongst men, however, the role of Prostate-Specific Antigen (PSA) screening has been a topic of much debate in recent times. In the unique population of immunocompromised renal transplant patients, the risks and benefits of prostate cancer screening are even more poorly defined.

Materials and Methods: In our institution, PSA screening was performed within 1 month of transplant if patients were within the at-risk age group, then on an annual basis. 12 core transrectal ultrasound guided biopsies were performed if they had 2 consecutive raised PSA levels. We performed a retrospective evaluation of the prevalence of prostate biopsies and prostate carcinoma occurrence among 421 male renal transplant recipients who had their transplants from 1983 to 2018.

Results: The majority of the patients were Chinese, which accounted for 67.5% of the patients. Median age was 40 years old (range 38-72). Sixteen patients had raised PSA levels with a mean of 10.25 ng/mL (range 4.78-20.8) and underwent biopsies. There were no post-biopsy sepsis or related complications. Six were subsequently diagnosed with prostate carcinoma at a mean of 9 years (SD 5.5) post-transplant. All the prostate carcinomas were localised at diagnosis, with Gleason grade group which ranged from 1 to 3. 3 (50.0%) underwent robotic prostatectomy and the remaining 3 (50.0%) had radiotherapy. Good graft and oncological survivals were obtained, with 5-year graft survival and biochemical progression free survival of 100%, and 83.3% respectively. Overall survival was 83.3%.

Conclusion: The minimal morbidity rates following diagnosis and treatment for renal transplant recipients with prostate carcinoma suggest that screening may be safely implemented with appropriate precautions. However, the incidence rate of prostate cancer amongst the predominantly Chinese local population is significantly lower at 1.4% compared to the incidence rate of 6.4% in the European Randomized Study of Screening for Prostate Cancer trial. Our data suggests that whilst PSA screening in transplant recipients may be safe, the utility of screening has yet to be proven. Further work evaluating financial and psychological costs should be performed.

UP-567

Patient and Graft Survival of Deceased Donor Transplant in One Year's Post Kidney Transplant Experience of Single Center. What does Need for Result to be Better than this?

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Introduction and Objective: Until this time the best modality for treatment of end stage renal failure (ESRD) is kidney transplantation, but the most important problem with that is shortage of donor. A deceased donor is the main provider of kidney and a relative and unrelated live donor is secondary provider of kidney for transplantation. But in the deceased donor, compared with the live donor there is not a time for complete evaluation and also almost deceased donor is in a bad condition so it seems that there will be some difference in deceased and live donor outcome. We investigated patient and graft survival in deceased donor in one year after transplantation in our center.

Materials and Methods: From 2003 until 2018 in our center there were 88 ESRD patients between the ages of 12 to 67 years; 33 females 55 males that have been transplanted with deceased donors, donors (between ages 5- to 60 years; 12 females and 35 males) but we just only approached 85 cases of recipients (43 males and 42 females) and investigated for patient and graft survival: All of the recipients have been treated with induction of ATG and then triple medicines Sandimune or Tacrolimuse and prednisolone and Imuran or Cellcept. And operation has been carried out with one team OF surgery.

Results: Eight cases expired in about the first 2 months of operation (8 cases in early times) and 77 patients were live in one year (%90/58) and overall 16 allograft loss in one year, 69 allografts survived in one year (81/17%).

Conclusion: In our center one-year graft survival was 81/17% and patient survival was 90/58% which results may be comparable with other centers and it seems that the result can be better than this in our center which we will discuss in this paper.

UP-568

Which One is Prefer and Safe in Auto Transplantation for Repairing of Full Length Complete Avulsed Ureter, Immediately or Delayed?

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Introduction and Objective: Modern techniques in urology have some complications that may be a disaster, one of them is ureteroscopy which may be complicated by complete avulsion or strictures of ureter. Here we present 4 cases with complete avulsion of ureters which managed successfully after complete evaluation.

Materials and Methods: Four cases, three women and one man, between ages of 55-80 years which in all of their ureters had been avulsed completely by urologist during TUL, one of the cases were from our department and three others have been referred by other centers of urology. Auto transplant was done for all of them at more than three days post trauma to the ureter.

Results: All of them discharged at least at day 6 post-transplant with good condition without sever complication.

Conclusion: It seems that after complete evaluation and preparation patients repairing complete avulsion of ureter may be safe and reasonable.

UP-569

A Longitudinal Flap of Vena Cava in Live Donor a Safe Option for Adding Elongation at Least 10 mm in Vein of Right Kidney

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Introduction and Objective: Kidney transplant is an ideal option for treatment of chronic kidney failure and kidney allograft from live donor is better than deceased donor in which overall patient and graft survival is superior, but a big problem with live donor is right kidney in which short renal vein predisposes for thrombosis of vein but in some cases for example size and function (GFR) of kidneys dictate to select right kidney we present a technique of nephrectomy for right kidney which elongates the vein and assist for challenging of short vein.

Materials and Methods: In ten cases of live unrelated kidney donors because of difference in size and GFR of kidney obligatory right side kidneys were selected for nephrectomy during dissecting renal vein and venae cava about 1 cm in caudal and 1 cm in cephalic to renal vein on vena cava skeletonized and Stansky applied to take the vein of vena cava 1 cm above and 1 cm below of vein of renal and with a calf of 5 mm, after removing kidney the kidney was placed in right iliac of kidney recipient without any trim nation of vein and donor 2 days after surgery discharged from hospital and followed after one month and then every 6 months.

Results: Right renal vein with longitudinal flaps of vena cava and with cuff was able to be anastomosed without traction and it was safe.

Conclusion: Longitudinal flap of vena cava with a cuff increase at least 10 mm length of right renal vein.

UP-570

Erectile Dysfunction Among Apparently Healthy Community-Based Nigerian Men Who Volunteered for Prostate Cancer Screening

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Introduction and Objective: Erectile dysfunction (ED) is a common sexual problem that many patients find difficult to raise with their doctors. In this study, we seek to evaluate the erectile dysfunction among apparently healthy Nigerian men who had volunteered for routine prostate cancer screening

Materials and Methods: Participants who completed the International Index of Erectile Function (IIEF-5) and the International Prostate Symptom Score (IPSS) were recruited from the community in 3 local government areas of Lagos State. The age, weight, height, body mass index, hip, waist circumference and blood pressure were recorded. They provided blood sample for serum prostate specific antigen (PSA) and had digital rectal examination (DRE).

Results: There were 698 Participants in the study. The mean age was 57.6 (range, 35-97) years. The mean (and range) weight, BMI, waist-hip ratio was 73.5 (44.0-125.0) kg, 25.8 (16.9-35.5) kg/m2, 0.96 (0.67-1.66) respectively; 399 (57.2%) were found to have hypertension. Varying degrees of ED were reported by 438 (62.8%) participants. Moderate to severe LUTS were reported by 83 (11.9%) patients. The median IPSS score was 2 (interquartile range of 1.0,-4.0). Median PSA was 1.21 (interquartile range 0.66, 2.48); 595 patients (85.2%) had PSA <4.0, 65 (9.3%) had PSA of 4-10, 21 (3%) had between 10.1-20, and 17 (2.4%) had >20. 28 (4.0%) patients had abnormal DRE findings. ED was significantly associated with age, weight, BMI, W-H ratio, the systolic blood pressure and the IPSS score on univariate analysis. Only age and IPSS score remained as independent predictors of ED on multivariate logistic regression analysis.

Conclusion: ED is highly prevalent and strongly related to LUTS among apparently healthy Nigerian men who volunteered for routine prostate cancer screening

UP-571

Impact of Low-Intensity Extracorporeal Shockwave Therapy (LIESWT) on Erectile Rehabilitation After Radical Prostatectomy

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Introduction and Objective: Recent studies indicate that LIESWT in the corpus cavernosum can promote penile rehabilitation. We aim to evaluate the LIESWT efficacy on erectile rehabilitation after radical prostatectomy (RP).

Materials and Methods: From November 2016 through May 2018, we randomly assigned 70 patients submitted to RP to receive an eight-week therapy with tadalafil 5mg daily alone (control group) or associated to LIESWT (experimental group). Inclusion criteria were baseline IIEF-5 18 and a nerve sparing RP (at least one side). The LIESWT was performed using RENOVA device (DIREX) once a week during 8 consecutive weeks (2.400 pulses per session, totalizing 19.200). We've re-assessed the IIEF-5 score at the end of the follow up (12th week). In addition, stressful events and continent status were evaluated. The complication rate was reported according to Clavien-Dindo classification. For statistical comparisons, the student t-test, Mann-Whitney and x^2 tests were conducted using R software (version 3.4.2).

Results: As of October 1, 2018, a total of 64 patients (control = 33; experimental = 31) complete the follow-up. One patient was submitted to radiotherapy following surgery, and five patients lost the follow-up, thus they were excluded from the analysis. The baseline characteristics between groups were similar including IIEF-5 (21.3 Vs. 21.6; p= 0.626) (Table 1). The postoperative IIEF-5 score was higher in the experimental group (12.8 Vs. 9.2; p <0.001) (Table 2, Figure 1).

Conclusion: Among men undergone RP, the combination tadalafil plus LIESWT led to a significant im-

UP.571, Table 1. Baseline Characteristics

Variable	Control	Experimental	p*
	n (%)		
Hypertension	19 (57.6)	19 (61.3)	0.762
Diabetes	7 (21.2)	5 (16.1)	0.446
Smoking	1 (3)	1 (3.2)	0.964
ASA ≥2	22 (66.7)	20 (64.5)	0.383
Previous 5-PPDI	1 (3)	3 (9.7)	0.332
	Mean (SD)		p**
Age (years)	64.5 (5.59)	63.3 (4.99)	0.230
BMI (kg/m²)	26.4 (2.38)	26.7 (3.67)	0.648
IIEF-5	21.3 (1.86)	21.6 (2.59)	0.626

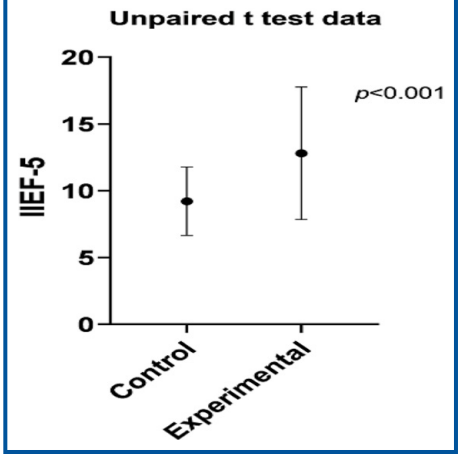
SD: standard deviation. *chi-square. **t Student.
ASA: American Society of Anesthesiologists classification.
IIEF-5: Simplified International Index of Erectile Function.
5-PPDI: 5-phosphodiesterase inhibitor.

UP.571, Table 2. Outcomes procedure-related

Variable	Control	Experimental	p*
	n (%)		
CD 1-2	5 (15.1)	4 (12.9)	0.795
CD 3-4	0	0	-
Stressful event	4 (12.1)	4 (12.9)	0.924
Continent	27 (18.2)	26 (16.1)	0.827
	Mean (SD)		p**
Final IIEF-5	9.21 (2.57)	12.81 (4.95)	<0.001

SD: standard deviation. *chi-square. **t Student.
IIEF-5: Simplified International Index of Erectile Function.
CV: Clavien-Dindo classification.
Stressful event: any event non procedure-related.
Continent: patients using 0-1 pad/daily.

UP.571, Figure 1. Final IIEF-5: control x experimental



provement on erectile rehabilitation when compared to the medical treatment alone.

UP-572

Long-Term Follow-up of Hypospadias Repaired in Childhood

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Introduction and Objective: The aim of our study was to show the impact of hypospadias treatment on psychosexual functioning of these patients in adulthood.

Materials and Methods: We evaluated 102 patients surgically treated for hypospadias in our institution from 1992-2000 and who were at least 16 years old at the time of survey. We assessed the type of hypospadias, surgical technique, early and late postoperative complications as well as sexual functioning and compared the results with 100 age- and gender-matched healthy controls.

Results: Mean patients' age at the time of surgery was 20.72±8.22 months (range 10-48 months). Majority of patients (67) had distal hypospadias. Complications occurred in 18.6% of patients in our series and were divided into early and late complications. Mean age for late postoperative complications development was 13.71±0.99 years. The most common early complication was urethral fistula (8 patients), while the most common late complication was urethral stricture (3 patients). Regarding the satisfaction with the appearance of their genitals 87% of our patients reported that they are very satisfied and 8% satisfied, respectively. To measure the sexual functioning in our samples, we used Sexual History Form (SHF), which showed a statistically significant difference among the two groups in favor of control group ($p < 0.05$).

Conclusion: Long-term follow-up of patients who have undergone hypospadias repair is still missing. We suggest that it is necessary to reveal possible complications that require further diagnostics and treatment, all in order to enable a normal psychosexual functioning in adulthood.

UP-573

Local Prevalence of Erectile Dysfunction Post Trans-Rectal Ultrasound Guided Biopsy of the Prostate: The Experience of a Single Institution

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Introduction and Objective: Trans-rectal ultrasound (TRUS) guided biopsy of the prostate has been reported to be associated with post procedural erectile dysfunction (ED). We evaluated the prevalence of ED post TRUS guided prostatic biopsy in our institution.

Materials and Methods: Between September 2017 and December 2018, 526 patients who were scheduled to undergo systematic TRUS biopsy of the prostate were interviewed. The patients who reported being sexually active were recruited into our study. Biodata such as age, race, comorbidities and smoking history were collected. The International Index of Erectile Function (IIEF-5) questionnaire with an added SEP 2 question was adapted into the 4 main languages used locally. These were given to the consenting patients based on the language they were most comfortable with. They answered the questionnaire before undergoing the procedure and 2 weeks after.

Results: 71 patients were sexually active and of these, 61 consented and completed the pre and post TRUS biopsy questionnaire. Overall, the mean pre TRUS biopsy IIEF-5 score was 15.44 (5-25), whilst the post TRUS biopsy IIEF-5 score was 15.34 (5-25). There was no statistically significant difference between these two means ($p= 0.9178$). Of all these patients, only one patient reported a drop in IIEF-5 score, which met the minimal clinically important difference (MCID) criteria of 4 points in the EF domain. Two patients reported a drop in IIEF-5 score post TRUS biopsy. Five patients reported severe ED, 10 had moderate ED, 19 had mild to moderate ED, and whilst 19 had mild ED. Eight patients did not have erectile dysfunction prior to the biopsy. There was also no statistical difference between the pre and post procedural mean IIEF-5 score in the mild ($p= 1$), mild-moderate ($p= 0.0748$), moderate ($p= 1$) and severe ($p= 0.5796$) pre procedural ED groups. There was also no change in the pre and post TRUS biopsy SEP2 domain, with all 45 patients who were able to have penetrative vaginal intercourse prior to the biopsy remaining so.

Conclusion: Trans-rectal ultrasound guided biopsy is not associated with post procedural erectile dysfunction.

UP-574

Male Erectile Dysfunction and Fertility After Bariatric Surgeries in the Saudi Community

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Introduction and Objective: Obesity and bariatric surgeries have been found to have a relation with erectile dysfunction (ED) in many studies. The aim of this study is to investigate the impact of bariatric surgeries on the erectile function in the Saudi male population.

Materials and Methods: Forty-two consecutive male patients underwent weight-losing surgeries during the period between February 2013 to July 2016. They were contacted by phone on July 2018, and then the International Index of Erectile Function (IIEF) short version (SHIM) was mailed to them. Unmarried patients were excluded from the study. We added questions regarding the use of phosphodiesterase inhibitors, the feeling regarding the sexual function before and after surgery, as well as his fertility post-surgery. All data were analyzed using specific statistical tests and SPSS package version 20.

Results: One patient was excluded from the analysis. Thirty patients responded completely to the survey. Their mean age was 41.9 years (range 26-62), and mean preoperative BMI was 46.3 ±7.5 with a significant reduction postoperatively to a mean of 30 ±5.5. IIEF score improved and the overall satisfaction and feeling better was 76.7%. Only 16.7% needed PDEI before intercourse after the operation. Thirteen (43.3%) patients had children after the operation. Univariate and multivariate analysis showed that age was a significant factor in association with both erectile function and fertility after bariatric surgeries ($p= 0.02$). Fertility was better in patients who underwent laparoscopic sleeve gastrectomy than gastric bypass surgery ($p= 0.005$).

Conclusion: The weight-losing surgeries have a significant effect on the erectile function, and they improve patient sexual satisfaction. Most of these patients feel better sexual function after bariatric surgeries. Fertility seems to have a relationship with the type of surgery. However, a larger sample size and further studies are needed to clarify this point.

UP-575

Is Penile Suspensory Ligament Division Necessary for Penile Augmentation?: Single Center Experience

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Introduction and Objective: The purpose of this is to assess the effect of the penile lengthening technique by division of the penile suspensory ligament.

Materials and Methods: From September 2017 to January 2019, a total of 2328 penile augmentation surgeries were analyzed for this article. In total, 2328 patients with a variety of etiologies were included. Of these, 1247 patients underwent division of the penile suspensory ligament in our clinic's ingenious way, 5-points permanent fixation. According to the extent of the division of penile suspensory ligament, we classified into the three groups. The outcome was assessed objectively based on increase in flaccid stretched penile length (SPL).

Results: The post-operation mean increase in SPL of 1081 patients (group 1) without division of the penile suspensory ligament was 1.5 ±1.2 cm (range, 0 to +4.5 cm). The post operation mean increase in SPL were 3.0 ±1.2 cm (range, 0 to +5.5 cm) in group 2, 3.2 ±1.0 cm (range, -0.5 to +7.0 cm) in group 3 and 3.3 ±1.1 cm (range, 1 to +7.0 cm) in group 4, respectively ($p <0.05$). The overall patient satisfaction rate was 75% and no one had other critical side effects.

Conclusion: Division of the penile suspensory ligament or other augmentation techniques may increase penile length. Suspension ligament incision tends to be reluctant to be decreased angle at the time of erection, However, in this study, there was no such anxiety of the patient and it proved to be a satisfactory technique for lengthening the flaccid state of penis.

UP-576

Evaluation of Oral Pentoxifylline, Colchicine, and Penile Traction in Management of Peyronie's Disease

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Introduction and Objective: Currently, there are several treatment options for Peyronie's Disease (PD). Although surgical interventions have better reported

outcomes than conservative therapy, surgery is not suitable for all patients with PD. Therefore, oral therapy for PD is still a frequently used treatment due to low cost, convenience and limited side effects. However, current literature on the efficacy of oral therapy in PD is inconclusive. Pentoxifylline and colchicine have both shown some promise though further studies are required to confirm their effectiveness. Our aim is therefore to assess the effect of oral therapy for PD including pentoxifylline or colchicine coupled with the Andropenis® penile traction therapy (PTT) extender on degree of penile curvature and plaque size.

Materials and Methods: Between March 2015 and June 2018, a prospectively collected database for patients receiving oral therapy for PD (pentoxifylline and/or colchicine) was reviewed. Perioperative data were compared at baseline and after 6 months of treatment, including degree of curvature, plaque size and penile doppler ultrasound parameters (peak systolic velocity, minimum diastolic velocity, pulsatility index). PTT was applied by the patient for a total of one hour per day for 6 months.

Results: A total of 46 patients were involved in this study. Mean age was 56 ± 10 years. There was a significant decrease in the degree of penile curvature after 6 months (55.8°±20° vs. 41.4°±20.8°, p=0.03). Likewise, the plaque size decreased significantly from 5.42± 2.7 to 2.42± 1.71, p = 0.0001. There was a significant increase in the peak systolic velocity from 29.8±10.02 to 38.2±11; p = 0.02 whereas no statistically significant difference could be detected regarding minimum diastolic velocity (M = 0.56 ± 3.1 vs.1.59; p = 0.415) or pulsatility index (M_{diff} = 0.03, CI [-0.06, 0.12], p = 0.473). Furthermore, there was no statistically significant difference in medication type Pentoxifylline or Colchicine (M_{diff} = 17.23, CI [-3.31, 37.77], p = 0.09).

Conclusion: Altogether, pentoxifylline and colchicine, taken with concomitant penile traction therapy, present a potentially convenient, low cost and effective treatment for penile curvature and plaque resulting from Peyronie disease. The result also reflects lack of pathophysiological knowledge of PD. Prospective randomized trials are warranted.

UP-577

Effects of Hypothyroidism on Lower Urinary Tract Symptoms, Testosterone and Sexual Function in Men

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Introduction and Objective: Although the effects of thyroid hormones on female gonadal function have been clearly established, the impact of these disorders on male sexual function and lower urinary tract symptoms remains controversial. We evaluated the sexual function and lower urinary tract symptoms (LUTS) and its possible association with hypothyroidism in male subjects.

Materials and Methods: Clinical records of 1095 consecutive male patients who had visited our hospital for health screening between January 2010 and July 2016 were assessed. All patients were evaluated serum prostate-specific antigen (PSA), serum total testosterone, thyroid stimulating hormone (TSH), free T4, transrectal ultrasonography and a compilation of the International Prostate Symptom Score (IPSS) and International Index of Erectile Function (IIEF) questionnaires. To evaluate the impact of hypothyroidism on male sexual function and LUTS, age adjusted multivariate analysis was performed. Hypothyroidism was defined as TSH greater than 4.0 mU/liter or on thyroxine treatment.

Results: Of 1,095 men, 90 (8.2%) had hypothyroidism. Univariate analysis demonstrated that levels of serum testosterone, IIEF sexual desire scores and IIEF overall satisfaction scores were negatively associated with the hypothyroidism, while prostate volumes was positively associated with the hypothyroidism. After adjusting for age, IIEF sexual desire scores (OR 0.90, P = 0.046) and levels of serum testosterone (OR 0.85, P = 0.021) were significantly associated with the prevalence of hypothyroidism. Prevalence of hypogonadism was 13.8% in patients with hypothyroidism vs 6.5% in normal thyroid function group (P = 0.002).

Conclusion: Serum testosterone level and sexual desire were decreased in male hypothyroidism patients. Therefore, it is important to identify and treat hypothyroidism when treating hypogonadism in clinical practice.

UP-578

Impact of Time Delay on Post-Operative Outcome in Patients Presenting with Penile Fracture: A 10 Year Prospective Observational Study

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Introduction and Objective: The study aims to share our clinical experience in management of penile fracture, its complications and specifically highlights the impact of time delay on postoperative outcome in patients presenting with penile fracture.

Material and Methods: The study is a prospective observational study conducted from July 2007 till January 2017. All the patients presenting to the emergency with a clinical presentation of penile fracture and a tear in the tunica albuginea of the penile cavernosal tissue, (confirmed on ultrasound) were included in this study. Intraoperative and postoperative data were analyzed.

Results: The study enrolled a total of 77 patients and most common cause for fracture noted was coitus. The average time delay from the time of insult to presentation to the emergency department was 25.11 ± 12.48 hours. The parameters that have significantly been altered by a time delay of more than 24 hours include post-operative wound infection, erectile dysfunction at 1 year and post-operative hospital stay. Two patients developed chordee at 6 and 9 months respectively, and both patients delayed beyond 24 hours. Also, all patients with hematoma size on color Doppler of more 10 cc and intraoperative tear >10 mm had developed post-operative wound infection. Patients with urethral injury, post-operative cavernositis or wound infection had significant association with erectile dysfunction.

Conclusion: Penile fracture although a rare urologic emergency has a significant impact on sexual health of a young man. An early intervention along with identifying and managing early complications factors would definitely help patients of penis fracture lead an almost normal sexual life.

UP-579

Priapism in Hematological Disorders- A Prospective Observational Study of 47 Cases

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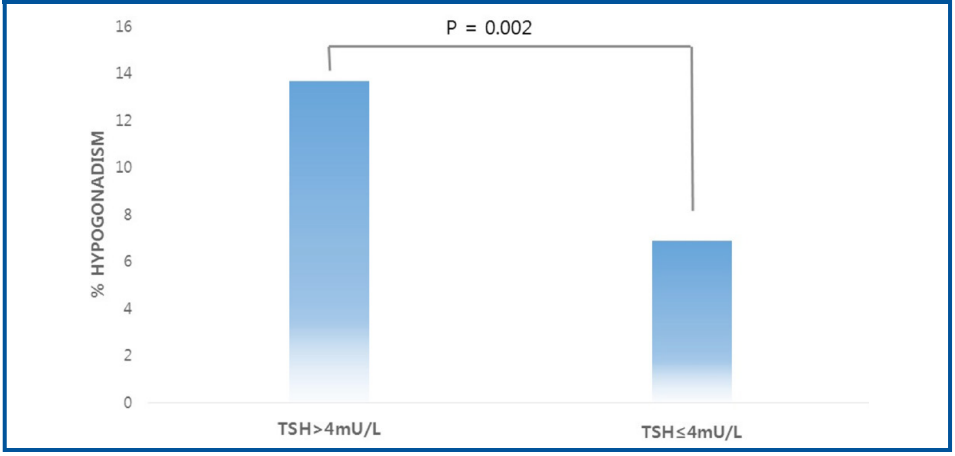
Introduction and Objective: Priapism is a urological emergency requiring immediate management to prevent erectile dysfunction. The reason to perform this study is to study different hematological conditions causing priapism and to develop an algorithm for management of such patients.

Materials and Methods: All patients with priapism due to hematological conditions presenting to us from 2010-17 were studied. As a protocol medical management was initiated, followed by simultaneous aspiration and wash. If no response was seen at 24 hours, patient was subjected to Al-Ghorab, Grayhack surgeries. Patients with erectile dysfunction were given an option of penile prosthesis.

UP.577, Figure 1.



Results: Priapism was seen in 47 hematological patients, out of which 35 were CML cases, 9 had sickle cell disease and 3 were having polycythemia vera. The most highlighting aspect was that 15 among the 47 patients (31.91%) presented priapism as the first clinical manifestation of their underlying hematologic disorder. One patient of CML died before any surgical intervention. Erectile function was preserved in those 2 CML patients who were presented and treated within 24 hrs. One polycythemic patient who did not respond to HU and phlebotomy has undergone shunt surgery.

Conclusion: The management of priapism in patients of hematological disorders should involve an integrated approach, as missing even a single case of hematologic disorder presenting with priapism will have disastrous implications. Urologists need to have a broader outlook in management of priapism.

UP-580

Sexual Dysfunction After Renal Transplantation: About 64 Cases

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Introduction and Objective: Sexuality is frequently affected during chronic kidney failure and after kidney transplantation. The majority of epidemiological studies, although few in number, have suggested that the importance of sexual problems in these patients is well founded and deserves further investigation. The aim of our work was to assess the prevalence of sexual dysfunction after renal transplantation, to specify the different modalities of sexual dysfunction and to predict different factors predicting these sexual disorders.

Materials and Methods: Our study is retrospective descriptive. It covered 64 kidney transplant patients of both sexes collected in the Urology Department of Habib Bourguiba Sfax University Hospital, during a period that runs from January 2017 to June 2017.

Results: The average age of male patients was 47 years old with extremes ranging from 28 to 64 years old, whereas he was 38 years old with extremes ranging from 25 to 47 years old in the female population. This was a transplant from a living relative donor in 95% and from a cadaver donor in 3 patients. The mean value of creatinine clearance was 86.69 mL / min with extremes ranging from 26 to 148.45 mL / min. The prevalence of sexual disorders was 32%, 35.5% in the male population and 23% of the female population. The aspect of this sexual dysfunction is very variable according to the sex, so in the male population the erectile dysfunction was observed in 35.3%, 9.8% for the function of the desire, 15.7% for the orgasmic function, 19.6% for the satisfaction with sexual intercourse and 17.6% for overall satisfaction of sexual function. In the female population, dyspareunia was the most common sexual dysfunction in 53% of cases. In the male population, creatinine clearance at the time of the study (p= 0.04), diabetes (p= 0.041), treatment with cyclosporine A (p= 0.038) and depressive disorders (p= 0.026)) were factors associated with a high risk of erectile dysfunction with significant prevalence values. In the female population, depression was the only factor associated with a high risk of sexual dysfunction after renal transplantation (p= 0.019).

Conclusion: Sexual problems in patients with chronic kidney disease should be considered as a major health problem. Strategies should be developed to incorporate the sexological assessment into the standard clinical follow-up program for these patients.

UP-581

Male Sexuality After External Continent Urinary Diversion Type Mitrofanoff

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Introduction and Objective: To evaluate the influence of continent external urinary diversion type Mitrofanoff on male sexuality.

Materials and Methods: Between 1992 and 2017, 140 patients underwent continent urinary diversion type Mitrofanoff at an academic hospital. Among 76 men, 46 were interviewed about their sexuality after this operation. This study was performed using a set of validated questionnaires (IIEF, DAN PSS and Urolife), grouped by the model of the CTMH. Patients were divided according to their marital status: group 1: patients married before surgery (15 cases), group 2: patients married after surgery (7 cases) and group 3: singles (24 cases).

Results: In the first group, the functional dimension of sexuality was positive with an overall score of 81%, the sexual discomfort score was assessed at 26 % and the sexual satisfaction score was 77%. In the second group, sexual function was considered conserved in all cases with a satisfaction score estimated at 98%. These patients reported a feeling of well-being following the disappearance of urinary incontinence with integrity of their body images. In contrast, in the last group, relatively impaired sexual function was noted (65%) with a satisfaction score estimated at 59%. These disorders were multifactorial, mainly related to neurological causal pathology.

Conclusion: To our knowledge, this is the first study about male sexuality in patients with a continent urinary diversion type Mitrofanoff. Marital status has a major role in the sexuality of these patients. A prospective study with pre- and postoperative evaluation will better clarify the factors affecting sexuality in these patients.

UP-582

Stem Cells as a Possible Therapy for Post-Radical Prostatectomy Erectile Dysfunction

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Introduction and Objective: Erectile dysfunction (ED) is a prevalent disease in men, causing a significant negative impact on quality of life in patients and their partners. A common complication after radical prostatectomy for prostate cancer is ED. Current therapeutic options have very limited efficacy and there currently is not a cure for ED.The aim of the study is to demonstrate the efficacy and safety of adipose-derived stem cells (ADSC) to improve erectile function in a cavernosal nerve injury animal model.

Materials and Methods: Fourteen rats divided into two groups underwent bilateral cavernous nerve crush injury, simulating injury caused by surgical trauma during radical prostatectomy. Group A (n=7): received an intravenous human ADSC injection into the tail vein at the time of nerve crushing plus an intracavernosal injection. Another injection one week later. Group B (n=7): received saline injections into the tail vein and an intracavernosal injection at the time of nerve crushing. Another injection was given one week later. After 4 weeks, the rats underwent non-survival surgery, at which time cavernous nerve stimulation was performed with simultaneous measurement of penile intracavernosal pressures and mean arterial blood pressure. The ratio of maximum intracavernosal pressure (ICP) to mean arterial pressure (MAP) was the primary endpoint for our analysis.

Results: Upon cavernosal nerve stimulation 4 weeks after nerve injury and ADSC injection, the peak ICP/MAP ratio of the rats in Group A (ADSC) demonstrated improvement in the graphical analysis of the data in comparison to Group B (control). The statistical analysis (***P***=.16) for the reviewed groups did not reveal great improvement.

Conclusion: Previous work suggests that ADSC has resulted in the recovery of erectile function in rats with ED. The mechanism of this effect may be paracrine or by stimulation of own cell to regenerate. This novel therapy can offer a minimally invasive option using the patient's own cells to treat the devastating complication of ED after radical prostatectomy.

UP-583

Low Intensity Shock Waves to Treat Erectile Dysfunction: Is it Safe for Patients Treated with Anticoagulants?

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Introduction and Objective: A large proportion of patients with vascular erectile dysfunction present a history of cardiovascular disease and are under anticoagulation or antiplatelet therapy. The aim of the study is to test the safety of low intensity shockwave therapy (LiST) in this group of patients.

Materials and Methods: Data were collected from two randomized clinical trials conducted by our research team and a pooled analysis was performed. The studies followed the same design and moreover the same shockwave machine (Dornier Aries 2) and the same application technique were used. Of the 138 patients who participated in both studies 35 were under single (n = 31) or double (n = 4) anticoagulation/antiplatelet therapy. These patients, according to the study they participated, were exposed to 6 (n = 2), 12 (n = 29) or 18 (n = 4) LiST sessions, using energy of

0.05 mJ/mm2 (n =23) or 0.1 mJ/mm2 (n = 12). Before and after each treatment session, patients were screened for bleeding events (clinical examination, medical history). Also, penile ultrasound was also performed on all patients during the 1st and 3rd month follow-up visit.

Results: None of the patients reported symptoms related to the treatment. No evidence of a bleeding event was found and the penile ultrasound was normal after even 18 sessions with frequency up to 3 times a week.

Conclusion: LiST to treat erectile dysfunction seems to be a safe and well tolerated method in patients under anticoagulation/ antiplatelet treatment

UP-584

Assessing the Impact of Energy Flux Density and Frequency of Sessions of Low-intensity Shockwave Therapy for Erectile Dysfunction: A 4-Arm Randomized Clinical Trial

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Introduction and Objective: The impact of the energy flux density (EFD) used on Low-intensity Shockwave Therapy (LiST) for erectile dysfunction (ED) has not be explored. Furthermore, safety and efficacy of sessions frequency has not been established. Our aim was to compare EFD of 0.05 vs 0.096 mJ/mm^2 regarding efficacy and safety of 12 treatment sessions within a 6-week period, when applied twice or 3 times per week.

Materials and Methods: Patients with vasculogenic ED, PDE5 inhibitors responders, were randomized into 4 groups, to receive 12 LiST sessions, using Dornier Aries2 shockwave machine: Group A=2 sessions/ week with EFD 0.05mJ/mm^2; Group B=3 sessions/ week with EFD 0.05mJ/mm^2; Group C=2 sessions/ week with EFD 0.096mJ/mm^2; Group D=3 sessions/ week with EFD 0.096mJ/mm^2. Follow up (FU) period was 6 months. Erectile function was assessed by International Index for Erectile Function – Erectile Function domain (IIEF-EF), Minimally Clinical Important Differences (MCID), Sexual Encounter Profile (SEP) and triplex ultrasonography parameters.

Results: All 4 groups improved in IIEF-EF, SEP3 "Yes" response at 6-month FU visit compared to baseline (p< 0.001). MCID at 6-month FU visit were achieved in 82.6%, 77.3% ,87%, 81% in Groups A(n=23), B(n=22), C(n=23), D (n=21) respectively. Mean PSV (cm/s) at baseline vs 3m-FU visit were 30.32 vs 34.67 for Group A, 30.02 vs 35.02 for Group B, 30.2 vs 36.02, for Group C, 29.43 vs 34.3 for Group D (p<0.01). There was no statistically significant difference in the change of all outcome measures from baseline to 6-month FU visit between different frequency or EFD groups (Table 1). No treatment-related side effects were reported.

Conclusion: The frequency per week of LiST does not have any impact in the efficacy and safety when delivered within 6 weeks without a 3-week break period. Higher EFD (0.096 mJ/mm^2 vs. 0.05 mJ/mm^2) is associated with a trend for improved efficacy without any safety concerns.

UP.584, Table 1. Change of all outcome measures from baseline to 6-month FU visit between different frequency or EFD groups

		Group A	Group B	A vs B p-value	Group C	Group D	C vs D p-value	AB vs CD p-value
IIEF-EF	1mFU	4.2 ± 1.6	3.5 ± 3.0	0.35	4.6 ± 2.7	4.6 ± 2.9	0.99	0.19
	3mFU	4.7 ± 2.2	4.4 ± 1.8	0.53	5.3 ± 2.9	5.6 ± 2.8	0.76	0.09
	6mFU	5.3 ± 2.8	4.5 ± 2.8	0.36	5.6 ± 2.5	5.9 ± 2.3	0.69	0.14
SEP3 (%Yes)	1mFU	26.0 ± 20.2	21.1 ± 22.5	0.44	28.1 ± 24.2	35.9 ± 22.6	0.27	0.09
	3mFU	26.3 ± 26.8	30.3 ± 21.1	0.58	31.4 ± 25.9	39.0 ± 30.2	0.37	0.22
	6mFU	32.4 ± 20.8	31.4 ± 29.1	0.90	34.9 ± 27.3	47.1 ± 29.1	0.16	0.12
PSV (cm/s)	3mFU	4.35 ± 2.23	5.04 ± 2.33	0.32	5.82 ± 2.44	4.79 ± 2.22	0.15	0.20
EDV (cm/s)	3mFU	-0.59 ± 2.36	-0.07 ± 2.70	0.49	-0.25 ± 2.40	-1.11 ± 2.36	0.24	0.53
RI	3mFU	0.04 ± 0.08	0.04 ± 0.09	0.81	0.04 ± 0.08	0.06 ± 0.07	0.38	0.77

Results are described as mean ± standard deviation.
p-values describe the comparison of combined results of Groups A and B versus combined results of Groups C and D, obtained by 2-tailed t-test of independent samples.

UP-585

Persistent Erectile Dysfunction Following Pelvic Fracture Urethral Injury: A Report of 12 Cases

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Introduction and Objective: Erectile dysfunction (ED) following Pelvic Fracture Urethral Injury (PFUI) is well documented and the incidence is 55-72% with 31% suffering from severe IIEF-5 ED. Up to 80% of patients with posterior urethral injury following pelvic fractures develop ED. The objective of this study was to evaluate the epidemiological, clinical and radiological aspects of patients with persistent ED following PFUI.

Materials and Methods: We conducted a retrospective and descriptive study of patients who presented with persistent ED and who were managed for Urethral trauma following Pelvic Fractures from August 2013 to July 2017 at Mbingo Baptist Hospital in the North West Province of Cameroon. We concerted the patients and collected epidemiologic, clinical and management parameters. We excluded patients with comorbid conditions and social habits that could cause ED as well as patients with incomplete medical records.

Results: In the study period, 12 patients were enrolled (n=12). The mean age is 49.3 years, with extreme ages of 28 and 53 years. The mean time from Trauma to definitive treatment of Urethral stricture post-trauma was 7.74 +/- 1.26 months, and the mean duration of erectile dysfunction (from time of trauma to present evaluation) is 55.55 +/- 11.95 months. 7 (58.3%) patients had Taile Type B fractures and 5 (41.7%) patients had Taile type C of whom 6 (50%) were managed conservatively. 7 (58.3%) patients developed bulbar urethral strictures following PFUI and the rest membranous structures. No concomitant bladder or bladder neck trauma was documented. The urethral trauma was not classified. 6 (50%) patients underwent anastomotic urethroplasty and 6 Direct visual internal urethrotomy with an average of 3 DVIU reviews. All of the patients had normal voiding functions, normal penile duplex ultrasonography but none has any pre-surgical evaluation of erectile function.

Conclusion: Erectile dysfunction is common in victims of PFUI and can persist over so many years. It is mostly neurogenic but can also be psychogenic or mixed. A realistic expectation of erectile dysfunction should be discussed with the patient as soon as possible after injury, and early penile rehabilitation considered after healing of the trauma.

UP-586

Impact of Laparoscopic Sacrocolpopexy on Symptoms, Health-Related Quality of Life and Sexuality

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Introduction and Objective: In addition to anatomical results, the preservation of the quality of life and sexuality of patients suffering from urogenitalprolapse (UGP) is a major issue in surgical treatment. Our objective was to evaluate the impact of laparoscopic sacrocolpopexy on symptoms, health-related quality of life (HRQL) and sexuality among women with symptomatic UGP.

Materials and Methods: A prospective analysis was carried out over 3 years including 32 women with symptomatic UGP. Validated tools were used to evaluate symptoms (Pelvic Floor Distress Inventory, PFDI-20) and HRQL (Pelvic Floor Impact Questionnaire, PFIQ-7). Sexual function was evaluated using the Pelvic organ prolapse urinary Incontinence Sexual Questionnaire (PISQ-12). Measurements were recorded at the preoperative examination, then at 6 and 12 months after surgery. We compared the follow-up results with preoperative data.

Results: At 6 months compared with the preoperative data, there was a significant improvement in PFDI-20 total mean score (15 vs 86,1 P < 0.05). At 12 months, the improvement remained significant (10,2 vs 86,1 P < 0.05) for all scores compared with the preoperative scores. But there was no difference between results at 6 months and those at 12 months. The results showed a significant improvement in the PFIQ-7 score at 6 (12.2 vs 111.4, P < 0.05) and 12 months (7.2 vs 111.4, P < 0.05). Again, there was no significant difference between the scores at 6 months and those at 12months. The total PISQ-12 score was linked significantly to pelvic symptoms (P < 0.05) but not with urinary symptoms andano-rectal ones. At 6 months, the total mean PISQ-12 score had improved significantly compared with the preoperative score (35.1 vs 22.3, P < 0.05). The total mean score remained significantly improved at 12 months (34.8 vs 22.3, P < 0.05) and there was no statistical difference compared with the results at 6 months.

Conclusion: Laparoscopic sacrocolpopexy resulted in the early improvement (primarily during the first 6 months) of all symptoms, HRQL and sexual function. This improvement was persistent in the medium term.

UP-587

Penis Unburying in the Bariatric Patient – Can Simultaneous Penile Prosthesis Insertion Improve Outcomes?

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Introduction and Objective: Adult acquired buried penis can cause a significant deterioration in patients' quality of life. Patients commonly describe poor sexual function, bothersome lower urinary tract symptoms (LUTS) such as urinary dribbling and spraying, coupled with skin breakdown, lichen sclerosis and urethral stricture disease. We describe our experience of penile prosthesis insertion (PPI) in addition to traditional surgical techniques for penis unburying in this challenging group of patients. Materials and Methods: We retrospectively analysed data on all patients undergoing penis unburying and simultaneous PPI at a high-volume tertiary Andrology unit over six years.

Results: Seven patients were identified between 2012-2018. Mean age was 63 years (52-79). All patients were morbidly obese with a mean BMI of 43.9 (37.9-54.3) and all were ASA III. Two patients had previously had bariatric surgery. Four patients underwent skin grafting as well as suprapubic fat pad excision, and PPI. There were no peri-operative complications. Six patients reported LUTS pre-operatively and one had an indwelling urinary catheter. Five patients reported an improvement in LUTS, with four patients voiding on standing and one voiding catheter-free. All patients reported erectile dysfunction prior to surgery. Two patients were sexually active at the time of follow-up. Complications included removal of an infected implant and debridement of necrotic skin in one patient during a prolonged length of stay.

Conclusion: Simultaneous PPI during penis unburying surgery, in the carefully selected bariatric patient, results in a significant improvement in LUTS and sexual function.

UP-588

VitarosTM as a Viable Alternative for the Treatment of Post-Prostatectomy Erectile Dysfunction: A Prospective Study From a Single Center

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Introduction and Objective: To evaluate the efficacy and safety of intraurethral use of alprostadil cream (Vitaros™) after radical prostatectomy as alternative post-prostatectomy rehabilitation treatment. Materials and Methods: 46 consecutive patients who were about to undergo RARP by the same surgeon, due to prostate cancer, were enrolled in this study. Inclusion criteria included age <75 years, preoperative IIEF5 score > 21, preoperative Erection Hardness Score (EHS) 3,1 preoperatively number of weekly sexual intercourse with a stable sexual partner, affirmatively answers to Sexual Encounter Profile Questions 2 and 3 (SEP2 & SEP3), preoperative quality of life < 2 (QoL visual scale from delightful equals 0 to terrible equals 6) and absence of diabetes, cardiovascular disease or metabolic syndrome.One month after the operation all patients received Vitaros™twice a week and re-evaluated after 3 and 6 months.

Results: One month after the operation, without any treatment, only 2 patients reported spontaneous erection (mostly tumescence, not rigid erections) and no one having sexual intercourse.After 3 months period of intraurethral administration of Vitaros™, mean IIEF5score was 15 from 23 preoperatively, mean EHS score was 2.5 from 3.2, the numberof weekly sexual intercourses was 1.2 from 2.3, 61% had a positive SEP2 and 54% apositive SEP3 response and the QoL score was increased to 2.8 from 1.6. At the endof the first 3 months, 5 patients discontinued (due to economic reasons or severe pain). After another 3 months, total 6 of Vitaros™usage the mean IIEF5score was 19, mean EHS score was 3.1, the number of weekly sexual intercourseswas 1.6, 73% had a positive SEP2 and 68% a positive SEP3 response with QoLscore decreased to 2.2. At the end of the evaluation, 1 more patientdiscontinued due to economic reasons and 3 switched to tri-mix injection therapydue to poor response to Vitaros™(2 of them did not respond also to penile-injections as well).

Conclusion: The intraurethral use of alprostadil cream (Vitaros™) after RARP for rehabilitation reasons seems to be a promising alternative to the well-established use of PDE5Is or intracavernous injections in well-selected patients.

UP-589

Role of Physical Tenderness in the Elderly's Sexual Activities

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Introduction and Objective: To evaluate the sexual activities including sexual intercourse and physical tenderness (e.g. kissing, caressing) which reflect sexual health in the elderly. Materials and Methods: A total of 209 (men, 100; women, 109) community-dwelling participants of 65 years or older were investigated to assess the sexual activities, sexual intercourse and physical tenderness, in the last 6 months. Erectile dysfunction was evaluated by IIEF questionnaire in men, and sexual dysfunction was evaluated by FSFI scores in women. Results: Mean age was 73.4 ± 4.8 years (men, 74.2 ± 5.0; women, 71.6 ± 5.3). Erectile dysfunction in men was 91.0% (Conclusion: More than half of the elderly had sexual activities. Physical tenderness was an important part of sexual activities in the elderly, especially in women.

UP-590

Mirabegron, Used for Overactive Bladder Treatment, Improves Female Sexual Function and Sexual Distress

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Introduction and Objective: OAB is a symptom syndrome which can substantially impede the quality of life. Women with OAB experience the increased incidence of sexual problems, sometimes with the consequent personal distress and sexual partner compatibility issues. Mirabegron is a b_3 adrenergic agonist that improves the storage capacity of the bladder and recently introduced as an oral treatment for OAB. The trial aimed to evaluate the effect of mirabegron, used for OAB treatment, on female sexual function and distress.

Materials and Methods: Seventy sexually active women suffering from OAB enrolled in the study. Females were divided into two groups. In Group A (control group), 35 women received no treatment, and in Group B, 35 patients received mirabegron 50 mg/daily for three months. All women completed a 3-day-bladder diary at the beginning and the end of the three-month trial. The number of incontinence episodes and the number of pads used were evaluated, as well. All women were assessed with the Female Sexual Function Index (FSFI) and Female Sexual Distress Scale-Revised (FSDS-R) at the beginning and the end of the study.

Results: At the end of the three months, there was a statistically significant improvement in most of the domains of FSFI in Group B compared with Group A. At the end of the three months, within Group B, post-treatment mean value (2.2±1.1) in incontinence episodes was significantly lower than pre-treatment (3.7±2.1). Furthermore, within Group B, post-treatment number of used pads (2.3±1.2) was significantly smaller than pre-treatment (3.4±1.4).

Conclusion: Females with OAB should be assessed for their sexual function to provide a better quality of life. OAB treatment with mirabegron improves both female sexual function and sexual distress.

UP.590, Table 1.

Final evaluation after three months	Group A Control Group Mean value ± SD	Group B Mirabegron Group Mean value ± SD	*P* value
Desire	3.05 (0.62)	3.91 (0.87)	P<0.05
Arousal	3.28 (0.65)	4.33 (0.84)	P<0.05
Lubrication	3.41 (0.71)	4.46 (0.95)	P<0.05
Orgasm	3.38 (0.61)	4.35 (0.76)	P<0.05
Satisfaction	3.03 (0.74)	3.80 (0.83)	P<0.05
Pain	3.24 (0.88)	3.91 (0.82)	P<0.05
Total FSFI score	19.39 (4.21)	24.84 (5.07)	P<0.05
% of females with FSDS-R <11	15%	34%	P<0.05

UP-591

Evaluation of the Surgical Outcome SWL, PCNL and RIRS for the Management of Lower Pole Stones with a Size < 2 cm Stones: A Systematic Review and Meta-Analysis

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Introduction and Objective: We aim to compare the surgical outcomes of SWL, RIRS and PCNL for the treatment of lower pole stones with a size < 2cm.

Materials and Methods: The systematic review was performed according to the PRISMA guidelines. Several databases were searched. Only comparative prospective studies were evaluated. The primary end point was the stone free rate (SFR) at 3 months. Secondary end points included operative time, days of hospitalization, retreatment rate and complications.

Results: 6687 publications were identified, from which 18 randomized controlled trials were included in the systematic review. The SFR at three months was similar between PCNL and RIRS with OD of 1,51 (95% CI: 0,95, 2,39; I^2= 0%, p= 0.08). PCNL had higher SFR in comparison to SWL with OD of 0,14 (95% CI: 0,09, 0,21; I^2= 55%; p < 0.00001). Comparing RIRS and SWL the stone free rate at three months was higher with RIRS with OD of 3,17 (95% CI: 2,34, 4,29; I^2= 52%; p < 0.00001). Favorable results in terms of operative time were observed in the case of SWL with mean differences (MD) of 37,17 (95% CI: 39,3, 35,31; I^2= 99%; p < 0.00001) compared with PCNL and 7,58 (95% CI: 8,13, 7,02; I^2= 100%, p < 0.00001) compared with RIRS. Comparing PCNL and RIRS, RIRS had smaller operative time with MD of 7,46 (95% CI: 5,17, 9,74; I^2= 99%, p < 0.00001). Hospitalization time was favorable in case of SWL with MD of 1,88 (95% CI: 1,96, 1,80; I^2= 100%; p < 0.00001) compared with PCNL. RIRS had more favorable results compared with PCNL with MD of 2,21 (95% CI: 2,00, 2,42; I^2= 96%; p < 0.00001). In case of retreatment rate, PCNL had similar rates with RIRS with OD of 0,42 (95% CI: 0,14, 1,27; I^2= 0%; p= 0,13). Both PCNL and RIRS had lower retreatment rates compared to SWL with ODs 50,67 (95% CI: 22,55, 113,84; I^2= 0%; p < 0.00001) and 0,05 (95% CI: 0,03, 0,08; I^2= 54%; p < 0.00001) respectively. The complication rates between PCNL and RIRS and between RIRS and SWL were similar with OD of 1,41 (95% CI: 0.87, 2.29; I^2= 0%; p= 0.16) and 1.38 (95% CI: 0.95, 2.01; I^2= 41%; p= 0.09). Comparing PCNL and SWL, the complication rate was in favor of SWL with OD of 0.4 (95% CI: 0.24, 0.65; I^2= 5%; p= 0.0002).

Conclusion: PCNL and RIRS had similar SFR and retreatment rates, but RIRS had shorter operative and hospitalization time. Both technics had higher SFR and lower retreatment rate than SWL. SWL had shorter operative time than PCNL or RIRS.

UP-592

Dj Malposition in Vena Cava. Case Report

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Introduction and Objective: A 28 years woman in 30.th week of pregnancy referred to emergency room for abdominal and right flank pain from 3 days ago. Patient doesn't have fever or acute abdominal problem.

Materials and Methods: Urine analysis showed microscopic hematuria without any bacteriuria. Abdominal us showed a 14 mm upper rt ureter stone with severe hydronephrosis. Under general anesthesia rt side 4.8 fr dj inserted to rt kidney.

Results: Patient discharged 2 day later with good general condition. After normal delivery 8 weeks later, patient comes to removal of rt dj and endoscopic stone removal. Kub showed that dj is in upper part of abdomen and lower thorax. Ct scan showed dj in vana cava and rt atrium of heart. Echocardiography showed upper part of dj with multiple theombosis in rt atrium. Patient had been ready for open surgery and then dj extract with 6 fr ureteroscope without any problem.

Conclusion: Dj malposition has occurred in 3% of patients with severe complications. Direct vision and placement without force is essential. Imaging after placement is necessary.

UP-593

Same-Session Versus Staged Ureteroscopy and Percutaneous Nephrolithotomy in Prone Position for Unilateral Ureteral and Renal Stones: A Retrospective Matched-Controlled Study

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Introduction and Objective: With recent advances in endoscopic procedures, refinement of endoscopic tools, and increased experiences in endourology; complex procedures like ureteroscopy (URS) and percutaneous nephrolithotomy (PCNL) can be performed as a simultaneous same-session procedure in appropriately-selected patients. We aimed to study the cut-off value or the stone range in which URS and PCNL can be performed on the same session safely in comparison to the staged procedure as a control arm.

Materials and Methods: A retrospective analysis between January 2007 and December 2017 that included patients operated on for unilateral simultaneous ureteral and renal stones by URS and PCNL. All had routine laboratory workup. Ultrasonography and abdominal X-ray (KUB) were done as a routine for all patients, in addition to either multislice non-contrast CT or IVU that were used to measure the stone size and burden. Ureteroscopy and PCNL were performed using standard surgical procedures. The primary outcomes were the immediate stone-free rate and total hospital costs. The second outcomes were the operative and anesthesia times, the complication rate, and hospital stay. The data was collected using SPSS 21[®].

Results: Out of 193 patients, 180 were found to have complete files eligible for review. The mean age of the study group was 50+14years, 140 (77%) were male, 79 (50%) were right-sided and 14 (7%) had solitary kidneys. Ninety-five patients had same-session URS and PCNL, as compared to a matched control group (85 patients) who had staged sessions. Same-stage procedure was the appropriate choice for those who couldn't tolerate multiple anesthetic settings like elderly patients and patients with ASA III. Also, this group had a shorter operative time and hospital stay. The same-stage approach helped patients to recover quickly and to return work earlier. It had a similar stone-free rate similar to the staged group. However, surgeons preferred to operate on staghorn as big stones required multiple punctures in a staged-approach. Late complications included three cases of ureteral stricture, two in the staged and one in the same-session group, with new significant backpressure by imaging. Two cases, one in each arm required endoureterotomy.

Conclusion: Same session URS and PCNL (in prone position) can be performed as a same-session procedure in appropriately-selected patients. It can be done with equal results to the staged procedure in renal stones with a median of 18mm (range, 10-30mm) in presence of 7mm or less ureteral stones.

UP-594

Efficacy of Pethidine, Ketorolac and Lidocaine Gel as Analgesics for Pain Control in Shockwave Lithotripsy (SWL): A Single Blinded Randomized Controlled Trial (RCT).

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Introduction and Objective: To compare the safety and efficacy of opioid sparing analgesia as xylocaine gel and ketorolac compared to pethidine for SWL pain.

Materials and Methods: A single-blinded randomized controlled trial (RCT) for 132 patients with renal and upper ureteral stones amenable for SWL. The 1st patient group received pethidine 25 mg IV bolus injection before session, placebo gel and pethidine 25 IV infusion during session, the 2nd received ketorolac 30 mg IV bolus injection plus placebo gel then 30 mg IV infusion; the 3rd group received lidocaine 2% gel locally plus 10 mg normal saline IV bolus then IV normal saline infusion. Disintegration were classified to no (no change from basal by KUB or US), partial (fragmented and >4 mm residual) and complete (4 mm residual). Stone disintegration was assessed by kidney, ureter, and bladder (KUB) x-ray and Ultrasound scan (US). The pain was evaluated using Numeric Pain Rating Scale (NPRS).

Results: NPRS scores were highest in xylocaine at 10, 20 and 30 min (p= 0.0001). NPRS scores showed no significant difference between ketorolac and pethedine, except at 10 min (p= 0.03) and near significant at 30 min (p= 0.054) in favor of ketorolac. Stone disintegration as no, partial and complete were: 25 (50%), 23 (46%), 2 (4%) for pethidine; 19 (35.8%), 23 (43.3%), 11 (20.7%) for ketorolac and 26 (89.6%), 3 (10.3%), 0 (0%) for lidocaine, respectively (P= 0.008).

Conclusion: Ketorolac is safe and more effective alternative to morphine derivatives for the SWL analgesia. Lidocaine gel shouldn't be used as mono-analgesia for SWL.

UP.594, Figure 1.

Variable	Pethidine (50)	Ketolac (53)	Xylocaine gel (29)	P value
Age (years ± SD)*	45.2± 12.9	45.9± 12.5	46.9± 11.7	0.8
Sex No. (%)** Male Female	24 26	28 25	13 16	0.4
BMI (mean ± SD)*	29.1± 4.8	29.4± 4.8	30.2± 4.9	0.2
ASA score No. (%)** I II III	43 (86) 7 (14) 0	40 (75.5) 11 (20.8) 2 (3.8)	23 (79.3) 5 (17.2) 1 (3.4)	0.5
DM No. (%) **	2 (4)	3 (5.7)	3 (10.3)	0.5
Serum creatinine mg/dl* (mean ± SD)	0.9± 0.3	0.9± 0.2	0.9± 0.2	0.9
Stone No. (%)** Single Multiple	34 (68) 16 (32)	42 (79.2) 11 (20.8)	24 (82.8) 5 (17.2)	0.3
Stone opacity No. (%)** Opaque Lucent	46 (92) 4 (8)	49 (92.5) 4 (7.5)	27 (93.1) 2 (6.9)	0.9
Stone volume mm^3* median (range)	0.5 (0.08-5.1)	0.45 (0.06-4.3)	0.33 (0.09-1.12)	0.1
Stone surface area mm^2* median (range)	2 (1.13-24.6)	2.5 (0.28-12.6)	1.5 (0.79-9.1)	0.1
Stone to skin distance (cm)* (mean± SD)	10.2± 2.5	10.5± 2.4	10.8± 2.6	0.5
Renal cortical thickness (cm)* (mean± SD)	1.9± 0.6	1.9± 0.5	1.9± 0.4	0.8
Muscle thickness (cm)* (mean ± SD)	5.7± 2	6± 2	5.7± 2.3	0.7
Soft tissue thickness (cm)*(mean+ SD)	7.5± 2.5	7.6± 2.4	8.2± 2.9	0.4
Average HU * (mean ± SD)	739.3± 269.5	769± 280.2	711± 251.2	0.6

	Pethidine (50)	Ketolac (53)	Xylocaine gel (29)	P value
Power KJ * (mean ± SD)	6.1±1.3	6.5±1.1	5.3±1.6	**0.0001**
Total energy w* (mean ± SD)	98.2±26.5	111.8±23.2	86.3±32.5	**0.0001**
No of shocks * (mean ± SD)	2936±226.6	2981.1±139.4	2027.6±908.3	**0.0001**
Session time (min)* (mean ± SD)	30±0	31±3	22.9±7.3	**0.0001**
NPRS -10 * median (range)	2 (0-4)	0 (0-5)	3 (0-10)	**0.0001**
NPRS -20 * median (range)	2 (0-7)	0 (0-8)	5.5 (0-10)	**0.0001**
NPRS -30* median (range)	2 (0-8)	0 (0-10)	7 (0-10)	**0.0001**
Supplementary analgesia (Add-on) No. (%)**	0 (0)	0 (0)	6 (20.7)	**0.0001**
Nausea, vomiting No. (%)**	18 (36)	0 (0)	2 (6.9)	**0.0001**
Post ESWL complications No: ** 1.hematuria 2.stienstrasee 3.peinephric hematoma	2 0 1	3 1 1	1 0 1	0.3
Satisfaction No. (%)** Yes (very satisfied, satisfied)	37 (74)	46 (86.8)	5 (17.2)	**0.0001**

Table (2): Shock wave sessions characteristic's and patient reaction
*One way Anova
**Chi square
No. = Number

UP-595

Comparison of ShockPulse Lithotripsy, Holmium Laser Lithotripsy and Open Cystolithotomy in Managing Large Bladder Stones

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Introduction and Objective: To compare the success rates and complications of ShockPulse-SE lithotripsy (SL), Holmium laser lithotripsy (LL) and open cystolithotomy (OC) in managing large bladder stones.

Materials and Methods: We retrospectively analyzed the records of 21 patients with large bladder stones (> 3 cm) who underwent treatment from January 2015 to September 2018. All patients have CT urography prior to intervention. For stone fragmentation, Shockpulse-SE lithotripter is introduced via a 26Fr rigid nephroscope and 600 micron Holmium laser is introduced via a 22 Fr rigid cystoscope. Stone free status is confirmed via direct visualization at the end of procedure and follow up KUB radiograph done during outpatient visit.

Results: There were 7 patients in the SL group, 10 patients in the LL groups and 4 patients in the OC group. When comparing between SL vs OC group, there was no significant difference in mean stone diameter and mean operating time; 53 mm vs 65 mm (p= 0.128) and 69 minutes vs 63 minutes(p= 0.783) respectively. The length of hospitalization, however, is significantly lower in SL group when compared to OC group; 1.3 days vs 3.5 days (p= 0.005). When comparing between SL vs LL group, mean stone diameter is bigger in the SL group; 53 mm vs 42 mm (p= 0.036). Despite a larger stone size, mean operative time appears faster in SL vs LL group; 69 vs 74 minutes, although it did not reach statistical significance (p= 0.811). Both groups have a similar average length of hospitalization at 1.3 days (p= 0.916). There was no significant difference in Hounsfield unit of bladder stones in all three groups. All patients were stone-free on follow up. There was no incidence of bladder or urethral injury in all three groups. Two patients in the OC group had operative wound infection requiring prolonged antibiotics.

Conclusion: Lithotripsy of large bladder stones with ShockPulse-SE is a minimally invasive, fast and effective procedure for treating large bladder stones. It reduces the morbidity and complications associated with open surgery.

UP-596

Gas Containing Partial Staghorn Renal Stone: A Case Report and Literature Review

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Introduction and Objective: Gas containing renal stones are very rare. There are only 9 cases reported in the literature worldwide. We aim to describe the clinical presentation, microbiological and radiological findings of the case and a review of literature.

Materials and Methods: A 92-year-old Chinese Female presented with fever and urinary tract symptoms. Complete blood count revealed no leucocytosis but procalcitonin was markedly raised at > 100 microgram/L. Urinalysis showed hemopyuria and urine culture grew Escherichia coli. Her renal function, calcium phosphate uric acid levels were within normal limits. Initial abdominal radiograph revealed no radio-opaque calculus. She was empirically treated with intravenous piperacillin-tazobactam. An uncontrasted CT kidney-ureter -bladder showed a gas containing large partial staghorn stone measuring 5.2 x 3.4 x 2.6 cm within the right renal pelvis. There was no significant perinephric fat stranding or hydronephrosis.

Results: She responded well to antibiotics and was afebrile after two days of antibiotics. Her inflammatory markers were downtrending. A CT urogram was performed one day prior to her discharge showed the stone was stable in size. There was no renal abscess, hydronephrosis or evidence of pyelonephritis. She was discharged upon completion of two weeks of intravenous antibiotics.

Conclusion: Gas containing renal stones are very rare. Aggressive antibiotic therapy in carefully selected patients coupled with surgical intervention, when necessary can lead to excellent outcomes.

UP-597

Co-relation of type of renal stone with Histopathological examination and appearance of renal papilla.

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Introduction and Objective: Ever since the seminal study by Alexander Randall wherein he generalized his hypothesis that development in interstitium of calcium phosphate lays the foundation stone for future stone formation. Our study was aimed to find the relationship of lithogenesis with changes in papillary appearances & biopsy in patients undergoing PCNL.

Materials and Methods: Data of 45 patients who underwent PCNL during June & July 2016 were collected which included serum analysis & 24-hour urine analysis after institutional ethical committee clearance. All patients had haemogram, bloodbiochemistry and radiological workup All ipsilateral papilla were inspected for shape, colour at tip & stem, any erosion, pitting, retraction, suburothelial deposits/Randall's plaque & ductal plugging. Papillary biopsy was taken with 10 Fr cup biopsy forceps from visible papillary calcifications-Randall's plaque or any other abnormality. Biopsies taken were examined for changes in ducts, mineral deposits & any inflammatory changes. Haematoxylin and eosin were used for staining and von Kossa stain was used for calcium deposits if any found. Stones were analysed by CARY 630 FTIR.

Results: Age of the patients varied from 15-68 years and 64.45% showed evidence of plaque. Papillary changes other than plaques were seen in 35.55% of patients which included collecting duct plugs & papillary erosions in 17.78% &11.11% respectively. Pitting was seen in 6.66% of patients. Stone composition and the endoscopic appearances had a significant correlation between papillary changes in oxalate vs. phosphate stones (P value 0.0009). On Histopathological examinations non oxalate stone formers had evidence of plaque in 8.89% of patients in comparison to 55.56% of oxalate stone formers. Oxalate stones formers had calcifications in interstitium with no inflammatory changes in 62.22% while as in non-oxalate stone formers evidence of calcifications in collecting ducts with inflammatory changes was seen in 26.67% (p value 0.002). No biopsy related complications were noted. All the patients were followed at 1 & 3 months with urine examination & creatinine levels.

Conclusion: This study gives clue regarding separate mechanisms in non-oxalate types of stone formation which results in characteristic visible papillary changes and proves the safety and feasibility of papillary biopsy without any morbid complications. Studying the histological examination of papillary tissue may provide a clue about the nature and level of deposition of crystalline material and may help in long term understanding the mechanism of stone formation.

UP-598

Redefining Management of Vesical Calculi: An Algorithm Based Approach

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Introduction and Objective: Vesical calculi have traditionally been approached by lithotomy and lithotripsy either transurethral or percutaneously depending on the availability of equipment and expertise. With laser being universally available now, we approached bladder stones with laser lithotripsy (LL) as the primary modality. We aim to present an algorithm to guide management of bladder stones.

Materials and Methods: 111 patients were studied between September 2016 to April 2019. Patient demographics, operative technique, complications and length of stay were analysed. Patients were counselled for transurethral approach using both high and low power laser (HP, LP) irrespective of stone size/number and age. Men with symptomatic enlarged prostate underwent concomitant prostate surgery. Patients unfit for GA or with hostile urethra were counselled for open surgery.

Results: 86% of patients were male and the average age was 61.05 years old. 43% of all stones were > 2 cm, largest stone measuring 8 cm. 8% patients had ECOG4 status and had laser lithotripsy under LA with sedation. 9 patients had concurrent BPH surgery. Complications: One patient had bladder perforation due to forceful ellicks. Wound infection rate in Open surgery - 66.6%. 100% Stone Free rate achieved in different cases with laser.

Conclusion: LL can be done in almost all patients irrespective of age/gender/number of calculi. It has minimal morbidity/fast recovery and can be combined with prostate surgery. Open surgery is an alternative with risk of wound infection and longer hospital stay. We believe LL is the golden wand in the surgeons' hand for vesical stone management. Since there are other options, we propose the algorithm in figure 1.

UP-599

A Randomised Control Trial of Strategies to Maximise Patient Comfort During Extracorporeal Shockwave Lithotripsy

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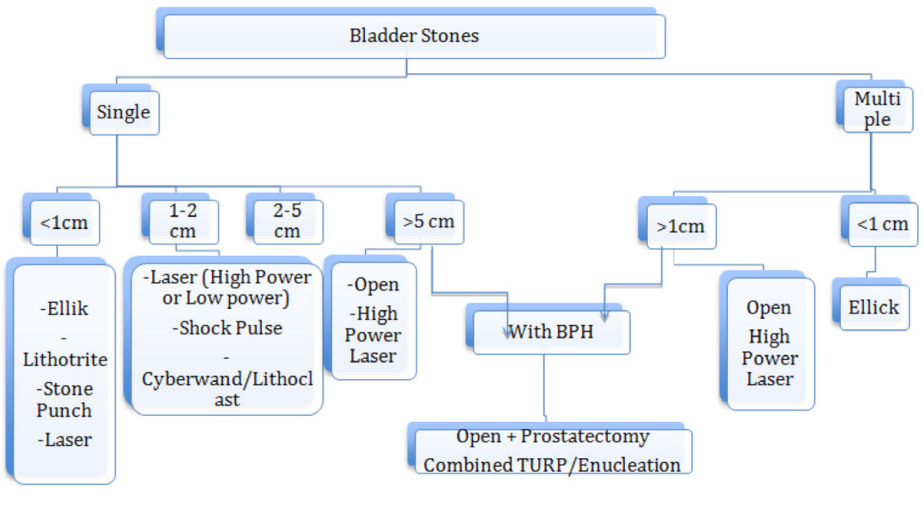
Introduction and Objective: Extracorporeal shockwave lithotripsy (ESWL) is an outpatient treatment for patients with renal calculi. Standard of care involves offering oral analgesia prior to commencing the treatment. It has been suggested that distraction techniques may be equivalent to oral analgesia in improving tolerability of ESWL treatment. Questions have been raised about the efficacy of oral analgesia administered directly before ESWL. We aimed to assess if distraction techniques improve comfort and tolerability of treatment for patients undergoing ESWL.

Materials and Methods: We carried out a prospective randomised control trial of all patients undergoing ESWL for the first time. Patients were randomised into three groups. All patients were offered oral analgesia, as part of the standard of care in our depart-

UP.598, Table 1. Patient Demographic (N=111)

Stone Size	<1cm	25
	1-2 cm	38
	2-5cm	41
	>5 cm	7
Multiple (>3 stones)	Yes	14
Method	Laser	90
	Ellick	5
	Open	3
	Lithoclast/ Stone Punch	13

UP.598, Figure 1. Algorithm



ment. Group 1 received stress balls to squeeze during treatment as an adjunct to standard of care. Group 2 were provided headphones to listen to music during treatment as an adjunct to standard of care. Group 3 received standard of care treatment. All patients completed a validated health anxiety inventory score prior to treatment. All patients completed a validated pain questionnaire and visual analogue score (VAS) after treatment. Primary outcomes were completion of ESWL treatment and pain score results.

Results: Fifty-two patients were randomised as outlined above. There was no significant difference between groups in terms of size or position of stone, presence of a stent and body mass index. One patient in the control group stopped treatment early due to pain. VAS was significantly lower in controls compared to Group 1 (1.93 vs 3.69 p= 0.08). On subgroup analysis of non-anxious patients, pain questionnaire scores were significantly lower in controls compared to Group 1 (2.58 vs 4.77, p= 0.06). On subgroup analysis of patients who received stress ball distraction alone compared to patients who received oral analgesia, VAS was significantly lower in controls (4.07 vs 1.92, p= 0.05). Across all subgroups pain scores tended to be lower in the control group compared to the distraction groups, but did not achieve significance.

Conclusion: Distraction techniques do not provide the same level of analgesia as oral medications. Distraction techniques should not replace standard of care for analgesia during ESWL. Oral medications provide good analgesic effects that are durable across the duration of treatment with ESWL. ESWL is well tolerated overall.

UP-600

Prophylactic Antibiotics in the WHO Checklist

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Introduction and Objective: Prophylactic antibiotics are essential in endourology to reduce the risk of post-operative urosepsis. These regimes are tailored to each patient according to prior urine cultures and sensitivities resulting in a variety of different agents such as gentamicin, co-amoxiclav, meropenem, amikacin, teicoplanin, and combination therapies. The required antibiotics are agreed during the team brief prior to the start of the operating list. As part of the "time out" within the WHO checklist, the administration of antibiotics is confirmed by the anaesthetic team. However, this check point does not require verification of whether the correct antibiotics have been given. This audit aims to assess how often the antibiotic regime given prior to the start of surgery matches those agreed at the team brief.

Materials and Methods: Agreed antibiotics regimes were compared to what was given prior to the start of surgery over a 2-month period for endoluminal endourology lists. The agreed antibiotics were recorded prospectively and subsequently compared to scanned anaesthetic records. This project was registered as a clinical audit and was exempt from ethical approval.

Results: A total of 64 cases were identified, 2 did not have scanned records at the time of data collection and were excluded. 24 cases (38.7%) required complex antibiotic regimes (more than 1 agent). Seven cases were identified where the agreed antibiotic regime had not been given prior to the start of surgery; this comprises 11.3% of all cases and 29.1% of those requiring complex antibiotic regimes.

Conclusion: The variety and complexity of antibiotic regimes used in endoluminal endourology likely increases the susceptibility to errors. This risk is amplified in the context of high turn-over of cases, changes to the order of operating lists and rotating theatre staff who may be unfamiliar with endourology. We propose an adaptation to the WHO "time out" to include verification of the antibiotics in the setting of endoluminal procedures to improve patient care and reduce the risk of post-operative urosepsis.

UP-601

Diet and Lifestyle Influence the Risk of Urolithiasis in the Population of South China

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Introduction and Objective: To evaluate the detailed risk factors of urolithiasis in the population of South China.

Materials and Methods: From March 2017 to April 2018, a questionnaire survey was conducted on patients admitted to the Department of Urology, The First Affiliated Hospital, Yijishan Hospital of Wannan Medical College. The questionnaire mainly consists of questions related to demographic characteristics, diet, and lifestyle including gender, age, occupation, residence, educational level, dietary habits and structure, fluid intake, physical exercise, and labor intensity. Data were collected from 1519 patients. Among them, 829 patients (54.6%) had urinary calculi (urolithiasis group) and 690 patients (45.4%) had no urinary calculi (control group). All data were analyzed with EpiDate3.1 and SPSS 17.0 statistical software.

Results: Chi-square test was used, and 13 variables are statistically significant, including age, labor intensity, high sodium intake, animal protein consumption, fatty or lean meat preference, vegetable intake, pickled food consumption, fluid intake, drinking habits, tea consumption, strong tea preference, frequency and duration of physical exercise. Then we included these variables into a multivariate logistic regression model. To avoid the possible omission of suspicious risk factors, "work stress" (P=0.074) was also included. Our results found that vegetables intake (OR= 0.856, 95% CI: 0.769-0.948), pickled food consumption (OR=1.271, 95% CI: 1.030-1.357), animal protein consumption (OR=1.138, 95% CI: 1.031-1.258), strong tea preference (OR=0.793, 95% CI: 0.702-0.897), fluid intake (OR=0.758, 95% CI: 0.644-0.816) and duration of physical exercise (OR=0.840, 95% CI: 0.808-0.973) were associated with the occurrence of urolithiasis.

Conclusion: High consumptions of pickled foods and animal protein are the main risk factors of urinary calculus in the population of South China. Conversely, high fluid and vegetable intakes, physical exercise, and preference for strong tea appear to be protective factors.

UP-602

Laparoscopic Pyelolithotomy for the Management of Large Renal Stones with Intrarenal Pelvic Anatomy

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Introduction and Objective: To evaluate feasibility and safety of laparoscopic pyelolithotomy for the management of renal stones with intrarenal pelvis anatomy.

Materials and Methods: Patients candidate for laparoscopic renal stone surgery from February 2014 to March 2015 were included in the study. Intrarenal pelvis was defined as more than 50% of renal pelvis area contained inside renal parenchyma. Laparoscopic pyelolithotomy was done by transperitoneal approach. Residual stones were checked by computed tomography and/or intravenous pyelography 6 weeks after the operation.

Results: Twenty-eight patients (19 male and 9 female) were included in the study. The mean age was 45.8±12.5 years. Three patients had staghorn, 3 had multiple stones, and 22 had pelvic stone. The mean operative time was 160±48 minutes. Residual stones were seen in 3 patients with multiple (n= 2) or staghorn (n= 1) stones. Urine leak happened in 3 patients and was managed conservatively in 2 patients. In one patient ureteral stent was inserted by cystoscopy. No conversion to open surgery or re-operation occurred.

Conclusion: Laparoscopic pyelolithotomy is a feasible and safe operation for patients with renal stones and intrarenal pelvis in centers with adequate experience in laparoscopy.

UP-603

Utility of Serum Corrected Calcium and Urate in First Time Stone Formers

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Introduction and Objective: In first time stone formers, it is recommended that serum corrected calcium (+/- parathyroid hormone) and urate is ordered as part of the initial serum investigations to determine if adjunct pharmacologic management or parathyroidectomy is required. Currently as part of this initial screening process, the utility of serum calcium and urate in determining further adjunct management is unknown. The aim of this study was to determine the effectiveness of these routine serum investigations in the management of first time stone formers.

Materials and Methods: A retrospective chart review was conducted of all first time stone formers that underwent definitive stone management at a Melbourne metropolitan centre. Patient demographics, serum calcium and urate levels and stone analysis findings were collected. If high risk features were present (such as multiple stones), a 24 hour urine collection was also performed. The primary outcome was need for adjunct management.

Results: Thirty-six first time stone formers underwent definitive stone management between July and September 2018. The median age was 49 years old. All patients had a serum calcium and urate. Three patients (11%) had hypercalaemia and of these one patient had primary hyperparathyroidism (with a normal 24 hour urine collection) requiring a parathyroidectomy. There were no cases of hyperuricaemia. Twelve patients (33%) who were deemed high risk also had a 24 hour collection. All patients who underwent a 24 hour urine collection had a risk factor identified with the most common being low daily urine volume (less than 2 litres). All of these patients had specific dietary modification and 2 patients started adjunct medical therapy for hypercalciuria. All stones in our series had a calcium component with the majority being Calcium Oxalate Phosphate (64%). Seven patients (19%) had a urate component.

Conclusion: Routine use of serum calcium and urate, as compared to 24 hour urinary collection, had a low rate of finding a metabolic abnormality requiring further adjunct management. Despite this, there are serious implications of missing a primary hyperparathyroidism. Serum calcium and urate should be a standard part of the initial workup of a first time stone former.

UP-604

Mini Percutaneous Nephrolithotomy with Clear Petra® Suction-Evacuation Access Sheath: An Initial Experience

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Introduction and Objective: Percutaneous nephrolithotomy (PCNL) in supine position is being performed for more than 25 years. Modifications of initial position and introduction of miniaturized nephroscope facilitated even more dissemination of this technique. A recent development constitutes the Clear Petra® Suction-Evacuation Access Sheath which permits the evacuation of stone fragments spontaneously under suction. Herein we present our initial experience with the use of this new technique.

Materials and Methods: We retrospectively studied 12 patients with mean age 55 years (range: 34-78 years) that underwent mini PCNL. All procedures were carried out in the modified Valdivia-Galdakao position, using a 16 Fr Clear Petra® Access Sheath and a 12 Fr MIP-M Nephroscope (Karl – Storz). Initial puncture was done under ultrasonic and fluoroscopic guidance. Lithotripsy was achieved through Holmium laser in all cases. Stone-free rates were assessed postoperatively and one month after the procedure with KUB and renal ultrasound. Patients considered stone free (SF) if there were no residual fragments >4 mm. The variables of surgery duration, stone-free rate, hospital stay, complication rates and ancillary procedures were evaluated.

Results: Eight cases had single stone and 4 cases multiple calculi. Mean aggregate stone diameter was 18 mm (range: 14-30mm). All the cases had a single puncture (9 cases in the lower calyx and 3 cases in the middle calyx). Mean operative time was 70 min (range 65-180) and mean hospital stay was 2.7 days (range: 2-4 days). Stone extraction was achieved in 83% (10/12) with suction only. Two cases required complementary use of basket for complete stone removal. At the end of the procedure a reentry Malekot catheter 16 Fr was placed in 11 cases and a Council catheter 16 Fr with a 6 Fr double-J stent in one case. Four cases required postoperatively a flexible nephroscopy to achieve complete stone clearance. Overall SF rate after the first month was 92% (11/12 cases). There were no major complications and none of the patient required blood transfusion. Two patients developed fever and were managed conservatively. Mean drop of haemoglobin was 0.9 g/dL (range: 0.4-2.1 g/dL).

Conclusion: Mini PCNL with Clear Petra® Suction-Evacuation Access Sheath is a safe and effective treatment modality for the management of nephrolithiasis. This technique, also, appears to be suitable for large kidney stones, with known advantages of the supine position.

UP-605

Managing Ureteric Colic in the United Kingdom - Our Experience of a Multi-Centre District General Hospital

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Introduction and Objective: Renal tract calculi have a lifetime incidence of 5 – 12% with about 86,742 hospital episodes in 2014 – 2015. There is a 50% recurrence rate within 7 years. British Association of Urological Surgeons (BAUS) have provided guidelines for management and follow up for ureteric calculi. We present our experience of managing and follow up of patients presenting to a multi-centre district general hospital in the United Kingdom.

Materials and Methods: Data was retrospectively collected from March 2017 to February 2018. Electronic medical records, patient medical notes, and radiology software were used to collect data. Data collected included surgical intervention, medical management and follow up. Results were compared with the BAUS ureteric colic guidelines.

Results: A total of 228 patients presented with ureteric colic in 12 months. 68 patients had an acute intervention with 50 patients undergoing ureteric stent insertion, 6 patients were nephrostomised and 12 patients had primary ureteroscopy (URS). 5 patients who had ureteric stent insertion had further URS within 4 weeks. 160 of the total cohort were initially treated expectantly with only 42 patients seen in the stone clinic within 4 weeks. The readmission rate prior to clinic or intervention was 11%.

Conclusion: Our study shows that only 30% of patients with symptomatic ureteric colic had an acute intervention as per the BAUS guidelines. Primary intervention was restricted mainly due to limited availability of emergency theatres. It is postulated that prompt access to emergency theatres and/or dedicated acute theatre slots will encourage clinicians to offer more primary ureteroscopies. A robust system of following up patients in clinic e.g. a dedicated clinic slot or establishing urgent stone clinics will ensure timely follow up. Limited availability of resources remains a challenge in achieving these goals.

UP-606

Safety of Potassium Citrate in Management of Uric Acid Stones in the Presence of Ureteric Stenting

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Introduction and Objective: Some urologists worry about the complications of ureteral stenting especially with the use of potassium citrate in terms of the occurrence of urinary tract infection (UTI) and encrustations. According to our knowledge, there is paucity of information about the estimated risks while using potassium citrate in presence of ureteral stents. Our aim is to evaluate the relative risks of ureteric stents application while managing Uric acid stones with potassium citrate in terms of stone encrustations and UTI.

Materials and Methods: We prospectively enrolled patients with renal uric acid stones who received K citrate from 2013-2018. Patients demographics were collected. All patients were evaluated using non-contrast CT scan to measure the stone size and density. JJ ureteric stent was inserted prior to the initiation of treatment. At follow up, all patients underwent urine analysis for pH and to detect UTI. CT was repeated at one month and those patients who showed incomplete stone resolution underwent repeated course of treatment for another month. CT was repeated prior to stent removal. The presence of encrustations was inspected and collected using the modified encrustation score.

Results: We collected 59 patients with a median age of 36 years (18-73) and median stone burden of 26 mm3 (15-50). The median stone density was 310 HU (175-498). Twenty-one patients (35.6%) received potassium citrate treatment for one-month while the remaining patients had 2 months of treatment. Sixteen patients (27.1%) had a complete stone dissolution, 41 patients (69.5%) had more than 50% decrease of stone burden while only 2 patients (3.4%) had stones with poor dissolution. Four patients (6.8%) experienced UTI while 2 patients (3.4%) had visible JJ encrustations. Most of these complications occurred when the treatment was offered for a second month.

Conclusion: Short-term use of ureteral stents is safe during management of uric acid stones with potassium citrate.

UP-607

Staghorn Calculi Treated by Flexible Ureteroscopy is a Challenging Performance – Experience of an Academic Single Center

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Introduction and Objective: Following the technological progress, the actual indications of flexible ureteroscopy are continuously improved. The aim of our study was to evaluate the efficacy and safety of this procedure in staghorn calculi (complete and incomplete).

Materials and Methods: We retrospectively analyzed the efficacy and morbidity associated with flexible ureteroscopic approach in 55 cases of staghorn calculi (7 complete and 45 incomplete), struvite (composed of magnesium, ammonium, and phosphate) related to urinary tract infection in 87% of cases (Proteus, Klebsiella and Pseudomonas) and 11% calcium phosphate, 39 cases with Type 1 staghorn <5000 mm3 total stone volume (TSV) and <5% unfavorable calyx stone percentile volume (UFCSPV); 11 cases with Type 2a 5000-20,000 mm3 TSV and <5% UFCSPV and 5 cases with Type 2b <20,000 mm3 TSV and >5% UFCSPV. The success of the procedure was defined as presence of residual stone fragments of less than 3 mm.

Results: Patients required a single procedure in 7 cases, two procedures in 28 cases, three procedures in 18 cases and four procedures in 2 cases. Complications rate was 19.1%, similar to the general one associated with flexible ureteroscopy in our experience. Clavien I and II occurred in 14.7% of cases, while Clavien III occurred in 4.4% of cases. No Clavien IV and V complications were registered.

Conclusion: Flexible ureteroscopy is a possible alternative to percutaneous access in staghorn calculi treatment. Its efficacy seems to be good, but depends of the patient preference (acceptance of multiple procedures), stone composition, high stone centers and experience of the endourologist.

UP.606, Table 1. Post-potassium citrate management outcomes

Parameter		Findings
Stone burden after treatment *median (range)*		6 mm3 (0-32)
Duration of treatment	One-month *n (%)*	21 patients (35.6)
	Two months *n (%)*	38 patients (64.4)
% decrease of stone burden median (range)		77.4% (25.6-100)
Response to treatment	100% *n (%)*	16 (27.1)
	50-99% *n (%)*	41 (69.5)
	<50% *n (%)*	2 (3.4)
Encrustation *n (%)*		2 (3.4)
UTI *n (%)*		4 (6.8)

UP-608

Forgotten DJ Stent : A Challenge in Endourology

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Introduction and Objective: Ureteral stent placement is a common procedure in urologic practice. Though there has been no definition for "forgotten" as any such term does not exist, but many previous studies consider a variable period of greater than 3 to 6 months to constitute a forgotten stent. Forgotten DJ stent can lead to encrustation, infection, migration, hydronephrosis and fragmentation. Forgotten, encrusted ureteral stents represent a difficult problem for urologists, and a consensus on the best therapeutic approach is lacking. We present our experience with endoscopic management of this challenging problem and discuss the chosen treatment combinations.

Materials and Methods: Total 6 patients with forgotten double J stent at urology department of the tertiary teaching hospital from October 2018 to March 2019 were included in this retrospective study. The details reviewed included the indwelling time, presenting complaints, radiological and laboratory investigations, their management techniques and complications of the interventions.

Results: Five were male while 1 was female with mean patient age of 38.83 years. Most common presenting complaints were loin pain and fever. Four patients had completely encrusted stent with significant sized calculus formation at the ends of stent in bladder and kidney with encrustation in ureter, while two had broken stent with the parts of stent surrounded by calculus formation. One patient was diagnosed with pyonephrosis. All cases were completely cleared off the stent and calculi using combined endourological techniques of cystolithotripsy, URS and PCNL. After stent removal one patient developed sepsis. Biochemical analyses of stent encrustations revealed that encrustations consisted mainly of calcium oxalate, calcium phosphate and ammonium magnesium phosphate.

Conclusion: Imaging evaluation and documentation of negative urine culture are imperative prior to any attempt to remove the stent. The use of various combinations of endourological techniques can achieve effective stent and stone treatment after a single anesthesia session with minimal morbidity and short hospital stay. Stent register, computer-based tracking system along with patient education is the key to ensure safety in developing countries.

UP-609

Ball-Tip Versus Flat-Tip Fibers: Is There a Difference in Operative Outcome for Laser Lithotripsy?

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Introduction and Objective: To compare the operative outcomes in patients undergoing laser lithotripsy using a ball-tip versus flat-tip laser fibre.

Materials and Methods: A prospective comparative study was performed comparing the usage of ball-tip (Boston Scientific TracTip ™) to flat-tip (Boston Scientific, LightTrail ™) laser fibres for patients undergoing lithotripsy for renal tract calculi at the Canberra Hospital, using the Boston Scientific Auriga XL. Operative outcomes analysed included operative time, laser fibre damage, and the number of laser pulses used, as well as 30-days complication rates and the need for follow up relook pyeloscopy. In addition, we examined the ability of the fibres to pass down disposable flexed ureteroscope, post-operatively. Data were analysed using SPSS 24.0.

Results: Sixty-seven patients were included in our prospective study with a mean age of 54.3 years, 36% of patients were female. The average number of stones treated per patient was 2.6 with a mean burden of 16.8 mm. Sixty-one percent of the cases contained lower pole renal calculus. There was no significant difference between patient demographics or stone characteristics between the two groups. There was a significant difference in laser fibre damage incidence (p= 0.008) with a larger degree of burn back length in the flat-tip fibre group (p= 0.02). The burn back length in the ball-tip fibre group was 0.4 mm (range 0-6 mm) compared to 1.6 mm (range 0-2.2 mm) in the flat-tip fibre group. There was no statistical significance in operative outcome or complications in both groups. We noted a tendency of difficult flexed ureteroscope insertion of the flat-tip fibres with a statistically significant rate of fibre breakage (p= 0.03).

Conclusion: The ball-tip laser fibre was more robust and results in less fibre damage during laser lithotripsy without compromising operative outcomes for patients.

UP-610

Outcome of PCNL in Old Age Patient - Single Center Experience

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Introduction and Objective: PCNL is procedure of choice in patients having renal stones of size more than 2 cm in adult population. Miniaturization of endoscopic instruments has made it possible to do minimally invasive endoscopic procedures for renal stones. We share our experience of old age PCNL in terms of safety and efficacy in a group of 47 old age patients (above 60 years of age).

Materials and Methods: It is a retrospective observational study of 47 old age patients who underwent PCNL from January 2011 to November 2017 at Shifa International Hospital, Islamabad. PCNL was done by standard technique. The patients were analyzed for age, gender, presenting symptoms, stone size, site, PCNL approach, operative time, stone clearance, hospital stay and Per-operative and Post- operative complications. Data was collected by chart review on specified performance. SPSS ver16 was used for data analysis.

Results: Total of 47 old age patients with mean age of 66.36 ±4.95 years. Mean stone size was 2.56 ±0.56 cm. Mean operative time was 152.26 ±107 minutes and mean hospital stay was 3 ±0.95 days. Post-operative transfusion was required in 1 (2.12%) patient only. There was no episode of sepsis or perinephric collection. Per operative stone clearance was 90.88% ± 13.46%. Conversion to open seen in none. DJ stent was placed in 36/47 (76.6 %) cases.

Conclusion: PCNL is a safe and effective way of treating renal stones in old age population.

UP-611

Role of Ureteral Wall Thickness and Distal Ureteral Density in Predicting the Impaction of Stones in Ureter Undergoing Ureterorescopic Procedures

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Introduction and Objective: To evaluate the significance of ureteral wall thickness (UWT) and Hounsfield units of ureter wall in predicting the presence of impacted stones in patients with ureteral stones undergoing ureteroscopic lithotripsy (URSL). To know the consequences of post op complications and stone free rates.

Materials and Methods: We retrospectively analyzed 128 procedures in patients with ureteral stones who underwent URSL between January 2015 and September 2018. Maximum UWT at the stone site and Hounsfield units of ureter wall above and below stone was measured from computed tomography images. Clinical predictors of impacted stones were assessed using univariate and multivariate logistic regression analyses. Moreover, we evaluated the association between UWT and endoscopic findings, as well as surgical outcomes.

Results: Of the total procedures, 37 (28.9%) patients had impacted stones. The univariate analysis showed significant differences in hydronephrosis, stone location, stone volume, Hounsfield units of ureter below stone, and UWT in patients with and without impacted stones, and the multivariate analysis showed that stones in the middle ureter, and UWT ($P < 0.01$) were independent predictors of impacted stones. The receiver operating characteristic analysis showed that 3.61 mm was the optimal cut-off value for UWT. High UWTs and Hounsfield units of ureter wall below stone were associated with the presence of ureteral edema, mucosal erosions and bleeds, stone fixation, longer operation times, and higher stone retropulsion rates, as compared with non-impacted stone group.

Conclusion: High UWT and Hounsfield units of ureteral wall below stone was associated with a higher risk of impacted stones and poor endoscopic results in ureteral stones undergoing URSL. Further research is needed on multi-centeric basis as well.

UP-612

Urinary Tract Infections After Ureteroscopic Stone Procedures with Laser: PKLI Experience

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Introduction and Objective: Ureteroscopic lithotripsy (URS) has gained popularity for the management of ureteral stones, owing to minimal invasiveness. Although this procedure is deemed safe and to have a low complication rate, febrile urinary tract infection (UTI) after URS still happens. Our aim was to analyze the risk factors of febrile UTI after URS.

Materials and Methods: Between March 2018 and February 2019, 210 patients underwent URS for ureteral stones. The rate of postoperative febrile UTI and the causative pathogens were noted, and the risk factors for postoperative febrile UTI were also analyzed.

Results: Of 210 patients, postoperative febrile UTI occurred in 13 patients (6.1%). Of them, pathogens were cultured in blood or urine in 8 patients (61.3%), and definite pathogens were not identified in 5 patients (38.3%). Multivariate analysis showed that the operation time ($p<0.001$) and prior UTI history and age were independent risk factor for febrile UTI after URS.

Conclusion: Overall, febrile UTI after URS occurred in 6.1% of patients, and the operation time, age of patient and prior UTI were independent predictive factors. These factors should be kept in mid while counselling patients about procedure.

UP-613

Effectiveness of Different Postoperative Analgesics in the Management of Acute Pain After Ureteroscopy

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Introduction and Objective: We evaluated the feasibility of a non-opioid discharge protocol compared to standard opioid medications for postoperative pain following URS and stent placement over an 8 months period.

Materials and Methods: Charts review of patients who underwent URS with stent placement was done over an 8-month period from February 2018 to October 2018 were retrospectively reviewed. Patients were discharged on paracetamol or diclofenac (NSAID) or tramadol (opioid) in groups 1, 2 and 3 respectively. Postoperative pain intensity was measured by nurse in the recovery room and at 0,6, 12, 24, 48, and 72 hours using the Verbal Intensity Pain Scale (VIPS). A mean pain score of less than 2 for each category of surgical procedures or analgesics group was defined as satisfactory pain control. Anova t test was applied to see for statistically significant difference in mean pain scores between these groups.

Results: Total of 120 patients underwent URS with double j stent placement: With 40 patients in each group. Eighty patients (of group 1 and 2) were not given opioids and were then discharged on opioid

free pain killer. The mean pain score was > 2 at 6 h postoperative in all three groups. However, pain was satisfactorily controlled in 90%, 92.5% and 90% in the respective groups 1, 2 and 3 (p= 0.09). Of those discharged without an opioid, 60 received paracetamol and 20 received diclofenac as pain killer. It was noted that the different analgesics prescribed for postoperative pain management provided satisfactory pain control based on mean pain score obtained at different intervals during 3 days after the surgery. There was no difference in the percentage of patients who had postoperative visits to the ER for genitourinary-related concerns (3/40 patients receiving opioids and 7/80 patients without opioids; p= 0.89).

Conclusion: This study demonstrates the feasibility of a non-opioid postoperative protocol even in acute setting in recovery for those undergoing URS in carefully selected patients. There should be such studies on other urologic procedure as well in future to look for Non opioids and even NSAIDS free pain killers.

UP-614

Treatment of Residual Kidney Stones with ESWL After PCNL for Staghorn Stones

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Introduction and Objective: Percutaneous nephrolithotripsy (PCNL) is the surgical therapy of choice for staghorn stones. However, the presence of residual lithiasis after PCNL is not rare. We studied the safety and the efficacy of extracorporeal shock wave lithotripsy (ESWL) as a complementary treatment for residual nephrolithiasis following PCNL.

Materials and Methods: The data of 72 patients undergoing PCNL followed by ESWL for the treatment of residual nephrolithiasis were studied. All patients were divided in three groups according to the location of the residual stones. Forty-six cases involved patients with stones in the upper calyx group, 15 in the middle group and 11 in the lower group. The average size of the residual stones was 8mm (range 7-12 mm), while among 35 of all the patients were detected with 2-3 stones. Lithiasis composition based on post-PCNL stone analysis was mainly calcium oxalate (50%) and struvite (35%).

Results: In 48 cases, automatic stone expulsion was observed after ESWL. Of these, 35 were stones located to the upper calyx group, 11 of the middle and 2 of the lower group. Complications were reported; in one case, perirenal hematoma requiring hospitalization was diagnosed, in 5 cases urinary tract infections which were treated with pos antibiotics and in 11 cases macroscopic hematuria consistent for over 2 days. Fourteen patients required additional treatment with ureterolithotripsy after a month period.

Conclusion: Using the ESWL in the treatment of residual nephrolithiasis after PCNL is considered to be a safe and effective method, mainly for upper and middle calyx group stones. The incidence of macroscopic hematuria and the risk of renal injury appear to decrease as long as both treatment methods are spaced longer than 3 weeks.

UP-615

Safety and Efficacy of Flexible Ureterorenoscopy for Kidney Stones in Oral Anticoagulated Cases

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Introduction and Objective: We compared perioperative outcomes in patients undergoing flexible ureterorenoscopy for kidney stones with or without anticoagulation.

Materials and Methods: We reviewed the records of 167 patients on anticoagulation with Coumadin, clopidogrel or aspirin undergoing flexible ureterorenoscopy for kidney stones from July 2013 to July, 2018. Patients who continued the medications at perioperation comprised the control group (Group A) and who discontinued the medications at least a week before surgery comprised the control group (Group B). The 2 groups were compared with regard to the operative time, the stone-free rate, hematuria and intraoperative and postoperative complications.

Results: The 2 groups were matched for stone size, stone location, stone composition and ASA score. Group A has longer operation time (50.0 vs 44.0 min, P = 0.020). No procedure had to be terminated in the anticoagulation group due to poor visibility from bleeding. There were no patients in both groups who needed blood transfusion. There were no major bleeding complications in the two groups during the perioperative surgery. There was no significant difference in stone clearance within the three subgroups, Group A and Group B (89.5% vs 85.2%, P = 0.826).

Conclusion: Flexible ureterorenoscopy holmium laser lithotripsy may be the best option for kidney stones in patients on anticoagulation therapy without the need for perioperative manipulation.

UP-616

Safety and Effectiveness of Bilateral Tubeless Minipcnl in Treating Bilateral Renal or Upper Ureteric Stones

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Introduction and Objective: Urolithiasis is the well documented common occurrences in the general population. The aetiology of this disorder is multifactorial. It is highly recurrent disease and life time recurrent rate is about 50%. The cases with bilateral renal or ureteric stones are not rare in our tractice. The aim of this study is to evaluate the safety and effectiveness of bilateral tubeless simultaneous mini PCNL in treating the patient with bilateral stone diseases

Materials and Methods: From December 2017 to February 2019, 12 cases of bilateral renal or ureteric stones were treated with bilateral simultaneous mini PCNL under regional anaesthesia. Mean age was 40 years. Both renal and upper ureteric stones were involved, and mean stone size was 1.6 cm in right and 1.5 cm in left. All cases were done under regional anaesthesia. In the prone position, percutaneous access was established by placement of an access needle under fluoroscopic guidance. 15 Fr Ampletz sheath and 12 Fr nephroscope were used in all cases. Holmium laser was used in all cases for lithotripsy. The ureteral stents (double J stent) was placed at the end of the procedure. Nephrostomy tube was not inserted in all cases. The operative time, success rate, hospital stay, and complications were assessed.

Results: Bilateral tubeless simultaneous MiniPCNL operations were performed successfully in all patients. Mean operation time was 56 min. Mean postoperative hospital stay was 3.2 days. All cases were followed up between 2 weeks and 1 month for J stent removal. No major complications like haemorrhage, perforation or organic injury were noted during the operation or postoperatively. No significant Hb drop was found. Average creatinine drop is 0.4 mg/dl. Stone clearance was achieved in all cases. Adjuvant procedures were not needed in all cases.

Conclusion: Bilateral simultaneous tubeless MiniPCNL is a safe and effective in treating bilateral stones disease in single anaesthesia in selected cases. But the larger number of cases are needed to be studied to further confirm the efficacy of bilateral tubeless miniPCNL.

UP-617

Ureteral Wall Thickness is Predictive Factor for Ureteral Impacted Stones

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Introduction and Objective: In case of TUL for ureteral impacted stones, surgical difficulty is higher due to the inability to insert a guide wire easily and poor visualization by ureteral mucosal edema, compared to non-impacted stones. In addition, we have to take care of intraoperative complications especially ureteral injury. In this study, we investigated the predictive factor for ureteral impacted stones.

Materials and Methods: In 117 patients who underwent TUL for ureteral stones in our hospital, we divided them into impacted stone group (Group A: 28 cases) and a non-impacted stone group (Group B: 89 cases). We defined the stones that could not insert a guide wire or whose ureteral mucosal edema was remarkable by endoscopic findings as ureteral impacted stones. We investigated the factors included age, sex, body mass index (BMI), stone location (proximal or middle, distal) hydronephrosis above grade 3, stone volume, Hounsfield units of stone, ureteral wall thickness, operating time, stone free rate, and intraoperative complications. The ureteral wall thickness at the stone site was evaluated on computed tomography. Statistical analysis was performed using t test and logistic regression analysis, and p <0.05 was regarded as significant difference.

Results: Between Group A and Group B, there was significantly difference in stone location (p=0.016), stone volume (132.2mm^3, 66.7mm^3, p<0.001), Hounsfield units of stone (962 HU, 878 HU, p=0.015), ureter wall thickness (2.77 mm, 1.88 mm, p<0.001), hydronephrosis above grade 3 (67.9%, 16.9%, p<0.001). A multivariate analysis of predictive factor for ureteral impacted stones was ureteral wall thickness (p=0.022, OR=2.772, 95% CI: 1.159-6.631) and hydronephrosis above grade 3 (p=0.005, OR=5.14, 95% CI: 1.658-

15.937). The cut off value of ureteral wall thick ness was 2.24mm by receiver operating characteristic curve. In surgical outcome, there was significantly difference in operating time (110min, 70.5min, p<0.001), stone free rate (71.4%, 97.8%, p=0.008), intraoperative complications (25%, 2.2%, p=0.012).

Conclusion: The ureteral wall thickness and hydronephrosis above grade 3 are predictive factor for ureteral impacted stone.

UP-618

Feasibility of Supine Percutaneous Nephrolithotomy for the Treatment of Large Renal Calculi in Horseshoe Kidneys

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Introduction and Objective: Prone is the usual position for performing percutaneous nephrolithotomy (PCNL) in horseshoe kidneys (HSK) due to kidney malrotation and abnormal calyceal orientation. We review the results of supine PCNL in HSK in a single surgeon series.

Materials and Methods: Between October 2014 and September 2018, 11 patients with HSK underwent PCNL by the same surgeon in the Galdakao Modified Supine Valdivia (GMSV) position. Inclusion criteria were HSK with stones larger than 2 cm, lower calyceal stones and other failed endourology treatments. Stone location, operative time, fluoroscopy time, mean hospital stay, stone free rate (SFR) in one month evaluated by C.T. and auxiliary procedures were analyzed.

Results: Mean age was 46,6 ±12,3 years. Mean stone maximal diameter was 2,9 ±1,2 cm. Four patients had staghorn stones, 5 patients had pelvic stones and 2 patients had lower calyceal stones only. Access was obtained with simultaneous use of ultrasound and fluoroscopy through the upper calyx in all cases. Fluoroscopy time and operative time were 105 ±44 seconds and 93 ±29 minutes. Flexible nephroscopy was performed in 5 patients. Mean hospital stay was 4 ±2 days. SFR was 72,7% in a single session, 2 patients received a second PCNL and 1 patient had flexible ureteroscopy. The mean Hgb drop was 34 ±8 gr/dL. Three (27,2%) patients had fever and 2 patients required blood transfusion after the procedure.

Conclusion: Despite altered calyceal orientation, PCNL in the Galdakao Modified Supine Valdivia position in horseshoe kidney seem a feasible and safe procedure considering its high SFR and short operative time.

UP-619

Early Experience with Mini Percutaneous Nephrolithotomy in a Single Centre

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Introduction and Objective: Although recognised for its good stone clearance, conventional percutaneous nephrolithotomy (cPNCL) is associated with a significant degree of morbidity in terms of blood loss, need for transfusion, analgesic requirements as well as a significant length of stay. The aim of this study was to document and evaluate the introduction and early experience of mini-percutaneous nephrolithotomy (mPCNL) using the 12 Fr MIP-M nephroscope & 16.5/17.5 Fr sheath (Storz) in the treatment of renal calculi in a single centre (Stepping Hill Hospital).

Materials and Methods: We enrolled consecutive patients who underwent mPCNL from March 2016 to September 2017. This followed the introduction of the mPCNL Karl Storz kit. Data on patient position (PP), number of punctures (NP), puncture location, stone clearance, post operative drainage (POD) and length of hospital stay (LOS) was recorded and analyzed.

Results: Twenty-four patients underwent 25 mPCNL procedures. Mean age was 56.8 years with mean stone size being 13.7 (7–16.6) mm. PP was the Galdakao-modified Valdivia supine position in all patients and mean NP was 1.1 (1-3). Most punctures were made in the lower pole calyx (81.3%). Four patients had completely tubeless procedures, four were stented while the rest had ureteric catheters which were removed within 24 hours. No transfusion was recorded. Mean LOS was 1.2 days (1-2) and 88% were documented as being stone free at the end of the procedure.

Conclusion: The MIP system performed in the supine position has many advantages over conventional PCNL (cPCNL). There is reduced risk of blood loss and reduced length of stay, while preserving the ability to perform flexible nephroscopy. Several anaesthetic, patient and surgeon benefits are also realised. A greater ease in performing tubeless procedures is also confirmed. It's been shown here to be a safe, useful and effective alternative to cPCNL or an adjunct to ureteroscopy.

UP-620

Would the 4.5 Fr. Semirigid Ureteroscope Overcome the Regular 6.5 Fr. Ureteroscope in Upper, Middle or Lower Ureteric Stones?

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Introduction and Objective: The aim of the study was to compare the safety and efficacy of a 4.5 Fr ureteroscope (43 cm) with a 6.5 F ureteroscope in the treatment of upper, middle and lower ureteric stones.

Materials and Methods: Ninety-eight patients with the first episode and failed medical expulsive therapy of a ureteric stone were randomized into two groups according to the type of ureteroscope used: group 1 (Wolf 4.5 F) and group 2 (n = 56, Wolf 6.5 F). We collected patient's demographic and stone characteristics, intraoperative and postoperative outcomes including stone clearance rate, need for auxiliary procedure and incidence of complications.

Results: Fifty-three patients underwent ureteroscopy in group 1 while fifty-six in group 2 with mean patient age 45 ±23 years. The mean stone-free rate was 92 % for group 1 and 79% in group 2 with an insignificant difference (p= 0.06). However, when compared between patients with BMI <31, groups 1 showed a higher success rate (95%) in comparison to group 2 (68%) with (p= 0.001). Conclusion: The 4.5 Fr ureteroscope showed better outcomes for treatment of ureteral stones especially those with BMI <31. We recommend the use of the 4.5 ureteroscope, especially in those with slimmer bodies and lower BMI.

UP-621

Catching Kidney Stones: A Novel Tool for Patient Use

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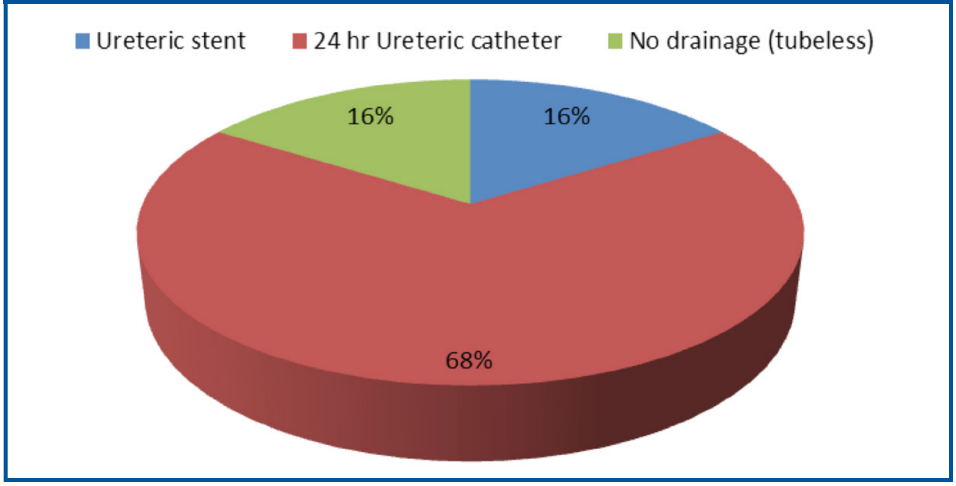
Introduction and Objective: Kidney stone disease is a common diagnosis with high recurrence rates. In many cases, kidney stones that are passed are not collected for analysis due a lack of an appropriate collection device. Analysis of kidney stones can help by reducing the risk of repeat episodes and in guiding treatment. Currently there is no consistent or reliable device to give to patients in order to catch stones for analysis. The 'Kidney Stone Catcher®' has been created as a medical device to capture kidney stones. It provides a simple and discreet methodology to 'strain' urine, as it streams, through a stainless-steel mesh 'catcher'. The primary objective of this study is to determine the convenience, ease of use and practicality of the device as per patient satisfaction questionnaires.

UP.619, Figure 1. Post Operative Drainage



Materials and Methods: Ethics approval was obtained through the Epworth Hospital Ethics Committee. Patients with renal colic treated conservatively were asked to participate. Written consent was obtained and fifty patients in total were selected to participate. A sample of the device was given to the patient to use every time they passed urine. Patients were called at the two week and six-week mark and a survey was completed.

Results: Of the 50 patients who used the Kidney Stone Catcher, 48 completed the survey either via the internet-based survey platform or paper format. The majority of patients found the 'Kidney Stone Catcher ®' easy to use, convenient to handle and carry every day. A large percentage would use the device again or recommend it to others and would use it over a makeshift device such as a strainer or sieve.

Conclusion: The 'Kidney Stone Catcher ®' is a simple method of filtering urine and catching stones. It rated highly among users for ease of use, practicality and safety. The majority of users would recommend the device to others and would use the device again. Our study highlights that the 'Kidney Stone Catcher ®' is a simple solution for a common problem. We recommend the distribution of the device to patients with conservatively managed renal colic.

UP-622

Is Metabolic Profile Mandatory in Pediatric Surgically Active Stone Disease? Yes, it is

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Introduction and Objective: Stone in pediatric population is considered as high risk for future stone development. Ideal treatment of stone disease consists of surgery for surgically active stone disease, and prevention of further episode. We did metabolic profiles of 100 pediatric stone patients to detect common abnormalities in our province.

Material and Methods: After institutional scientific and ethical committee approval, 100 cases of pediatric stone disease, operated at our institute from January 2015 to January 2018 were enrolled in the study. Patients with anatomical abnormality like PUJ obstruction or horse shoe kidney were excluded. After surgery stone analysis was done with FT-IR spectroscopy. Urine sample was collected after 21 day of stent removal if the patient did not have active UTI or heamaturia. Urine samples were collected by either spot urine sample (mostly for non-toilet trained patients), or 24 hour urine collection in container with preservatives. The samples were collected while patients were on a normal diet without any restriction. Serum panel consist of calcium, potassium, bicarbonate, uric acid, phosphorus and creatinine was performed.

Results: Mean age of patients were 7.8 years with male to female ratio 62:38. 82% of cases sample was collected as 24-hour urine and in 18% cases it was spot urine collection. 70% of stones were calcium oxalate (50% monohydrate and 20% dihydrate), 18% were ammonium urate, 8% were uric acid and 2% of struvite and calcium phosphate each. 34% had isolated hypercalciuria, 7% had isolated hypocitraturia, 2% had hyperuricosuria and 15% had combine hypercalciuria and hypocitraturia with low urine volume. Out of total 49% of patients who had hypercalciuria, 10% had hypercalcemia and 4% had Hyperkalemia on serum profile. 5% of patients had Hyperurisemia.

Conclusion: The majority of pediatric stone diseases have some form of abnormality underlying. Surgery alone doesn't prevent recurrence. Identify underlying metabolic abnormality by metabolic profile can help to assist proper preventive measure. So, it is recommended to do metabolic profile study in all pediatric stone disease.

UP-623

Journey of Bladder Stone Management: From Painful Lethal Complications to Painless Daycare Surgery

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Introduction: There are three possible approaches to bladder stone to cut down to base from perineal approach, from suprapubic approach or crush the stone by passing instrument through urethra. All these modalities had painful history of centuries to turn into painless daycare surgery.

History: Bladder stone was found from 4500-5000 years old mummy. First description for bladder stone management was mentioned by Hippocrates. Perineal lithotomy was described by Celsus in 1st century, which was most effective for children compare to adults. Formally, known as apparatus minor, as incision was made in front of anus upto bladder base. Stone was pushed from anus and removed with hook. In 1520 Marinus from Italy, pass sound from urethra and cut over it to remove stone known as apparatus major which leaves patients in sever Hemorrhage and sepsis. If patients survived, then he had total incontinence. Suprapublic lithotomy, 1st done by Calot on prisoners in 1475 and then and popularized by Peire from, France in 1561. In 1719 John Douglass suggested that distended bladder could be open suprapubic extra peritoneal approach and Cheslden performed 3 surgeries with high success but later they left it due to high bowel injury and bladder bursting injury. In July 1824, John Civiale introduced grasping forceps and started the era of lithotripters. In 1858, Sir Henry Thompson by accident popularized the concept of sterility of instruments to decrease mortality from lithotripsy. Biglow in 1894 form sturdy lithotripters. Meanwhile development of optics in 1879 by Nitze and then by Hopking improves cystoscopy vision. Young and Macken developed cystoscopic lithotripsy in 20th century and later Mulvaney in 1953 apply ultra sound for stone fragmentation. In 1986 laser was introduced.

Conclusion: Thus, the management of bladder stone evolved from painful lethal complications. But last few decades due better optics and energy sources it is possible to manage bladder stone as day care procedure.

UP-624

The Trend of Treatment for Urinary Tract Stone in South Korea: National Wide Population-Based Study

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Introduction and Objective: Treatment of urinary tract stone was variable by size or location of stone or physician's preference. In our knowledge, trend of treatment for urinary tract stone (UTS) in South Korea remains unknown. In this study, we investigated trend of treatment for UTS via national health insurance database. Materials and Methods: The incidence of UTS and frequency of treatments were retrieved from national health insurance database. Treatments included extracorporeal shockwave lithotripsy (ESWL), percutaneous nephrolithotomy (PNL), open, laparoscopic and endoscopic ureterolithotomy. We analyzed patients by their age, sex, socioeconomic status and place of residence. Results: The incidence of UTS was from 180,000 to 200,000 patients in each year. Among them, patients with ureter stone was 82%. The incidence of UTS increased in the 50s or older, however, decreased in other age group. High socioeconomic status group was diagnosed with UTS more than lower group. ESWL was the most frequently performed procedure for UTS, accounting 93% of the total procedure. In ESWL, 77% of patients were treated in one session and 98.7% of patients were treated in single endoscopic treatments. Conclusion: UTS have increased in people over 50 years, and ESWL was the most frequently performed procedure for UTS in South Korea.

UP-625

The Efficacy of the Disposable Flexible Ureterorenoscopy (Lithovue®) for Lower Pole Renal Stone

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Introduction and Objective: With advances in technology, flexible ureteroscopy is the most rapidly growing intervention for removal of urolithiasis. Lithovue® is the first disposable digital ureterorenoscopy in the world. The aim of this study was to evaluate the efficacy of Lithovue® for lower pole renal stone.

Materials and Methods: Patients who underwent retrograde intrarenal surgery for lower calyceal stone by Lithovue® were included in the study between January and December 2016. Flexible ureterorenoscopic procedure was followed by the same methods in the previous investigations. Holmium laser was used to perform dusting or fragmentation for stones. Non-contrast computed tomography (CT) scans were acquired preoperatively and follow-up images of plain KUB or CT scans were obtained postoperatively within 3 months to assess the presence of remnant stones. Stone-free was defined as the absence of any residual stone, or a remnant stone of less than 3 mm without any symptoms.

Results: A total of 45 patients were enrolled in the study. The mean age was 54.5±11.4 years and the male to female ratio was 29 (64.4%) to 16 (35.6%). The mean stone burden was 16.9±8.9 mm and mean Hounsfield Unit (HU) was 773.8±379.1. The stone compositions were calcium oxalate monohydrate (29, 64.4%), uric acid (10, 22.2%), and carbonite apatite (2, 4.4%). The overall stone-free rate of Lithovue® was 80.0% (36/45). The mean remnant stone size was 6.33 mm. The mean infundibular pelvic angle (IPA) was

46.4±9.1 degrees. The mean IPA was 44.2±7.8 degrees in patients with remnant stones.

Conclusion: Lithovue® is a feasible alternative to reusable flexible ureterorenoscopy in patients with lower calyceal stones. Lithovue® can overcome the limitations for reusable flexible ureteroscopy such as scope fragility, maintenance fee for sterilization, and costs. Additional studies for efficacy and cost are needed to confirm these results.

UP-626

Intrauterine Device Migration – A Rare Cause of Bladder Stone

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Introduction and Objective: The intrauterine device (IUD) is a safe contraceptive method, which has been used for many years. We report a case on a 55-years-old woman with cervical cancer treated with radio-chemotherapy in whom the IUD migrated into the bladder with stone formation.

Materials and Methods: We review a case of IUD perforation with migration into the bladder and subsequent stone formation, treated with laparoscopic approach. Results: A 55-year-old woman with history of cervical carcinoma treated with radio-chemotherapy, presents 9 years later, with recurrent urinary tract infection and urinary incontinence. CT scan showed a large bladder calculus (maximum diameter 4.5 cm) with severe bilateral hydronephrosis. Furthermore, vesicovaginal fistula was identified. The patient underwent surgery, under general anaesthesia, with a bilateral ureteral stent's placement and cystolithotomy by laparoscopic approach. After incision of a markedly thickened bladder wall, calculus fragmentation with IUD extraction was arduously achieved. The fragments of the calculus were removed with use of Endobag®. Due to difficult access, uncertain identification of fistula tract and high risk of infection, vesicovaginal fistula correction was postponed.

Conclusion: The IUD is usually a safe contraceptive method. Although, an IUD perforation is uncommon, serious complication may present with bladder migration and secondary stone formation. Laparoscopic surgery was safely used for stone fragmentation and removal of IUD.

UP-627

Moses Technology in ClearPetra MiniPerc: In Pursuit of Total Stone Clearance

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Introduction and Objective: Reaching a total stone free state in kidney in one treatment episode remains a challenge for conventional miniperc procedures, especially for 1-2 cm sized stones. Even with all newer advancements in PCNL, migration of small fragments during laser lithotripsy remains a concern, which may result in incomplete stone clearance. In pursuit of finding a better method for total stone clearance, we describe a new technology: Miniperc with 18 Fr ClearPetra(Well Lead INC, China) sheath and Moses (Lumenis INC, Israel) laser fiber technology which promises to disintegrate the stone into dust and fragments, thus helping in total stone clearance.

Materials and Methods: This is a prospective study involving 30 consecutive patients who underwent miniperc with ClearPetra 18 Fr sheath and Moses laser fiber technology from July 2018-December 2018. Surgery was performed using 12 Fr nephroscope and the 18 Fr ClearPetra sheath integrated with suction and Moses 365 DFL laser fiber technology. All patients underwent pre-op CT urography and Plain CT-KUB within 48 hours of procedure to assess stone free status. At 30 day follow up, Plain CT-KUB was done only for those patients with residual stones in immediate post-operative period.

Results: The mean age of the group (n= 30;21 males and 9 females) was 44.6±18.15 years. Mean stone size and volume were 1.35±0.68 cm and 1458.42±322.64 mm3 respectively. Mean stone density was 1244.54±194.24 HU. 19 patients had middle calyceal puncture and 11 had lower calyceal punctures. Laser setting varied from 0.3-0.6 J and 30-60 Hz (Mean Total energy: 39.54±23.56 KJ). The mean lasing time was 15.47±10.76 min. Exit strategy was tubeless with ureteric catheter in 16 patients (54%), DJ stent in 9 patients (30%) and nephrostomy with ureteric catheter in 5 patients (16%). The mean operative time was 38.55±15.64 min. The mean haemoglobin drop was 0.95±0.20 g/dL with no blood transfusion. Postoperatively, two patients had fever, managed conservatively. Mean post-operative hospital stay was 26.35±2.43 hours. The immediate and thirty day total stone clearance rate were 80% and 100% respectively.

Conclusion: Miniperc with Moses laser fiber technology is an improvised technique of minimally-invasive PCNL with potential advantage of early recovery, minimal morbidity and total stone clearance.

UP-628

Silodosin as a Medical Expulsive Therapy for Distal Ureteral Stones. What are the Failure Causes?

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Introduction and Objective: Medical expulsive therapy with alpha-blockers is recommended for treating small and distal ureteral stones. We aim to investigate the efficacy of silodosin 8 mg/day for medical expulsive therapy (MET) of distal ureteral stones and to determine failure causes.

Materials and Methods: We conducted a prospective study in department of emergency and urology in Mâamouri teaching hospital – Nabeul since March 2017. We included adult patients with unique small (< 8 mm) distal ureteral stone. They were treated with silodosin 8 mg/day for one month only and asked them to increase their fluid intake to achieve a daily urine output of 2 liters. Age, gender, main symptom, stone size, the distance between the stone and ureterovesical junction, stone passage rate, duration of stone passage after starting MET, and adverse effects were noted. They were 54 males and 19 females with a mean age of 47,5 +/- 5,2 years. Stone size ranges from 4 to 7 mm. The main symptom was renal colic (n= 67).

Results: After 1 month spontaneous stone passage was seen in 54 (73,9%) patients. Three patients pass their stones spontaneously after one month of treatment. No major side effect was reported. Ureterolithotripsy was performed in the remaining patients. Preoperatively, we discovered major mucosa edema (n= 4), impacted stone (n= 6) and distal ureteral stenosis (n= 5). All patients were stone free at the end of the treatment. Conclusion: Silodosin 8 mg/day is efficient and safe for MET in distal ureteral stones. Impacted stone and distal ureteral stenosis are main causes of MET failure.

UP-629

Bacteriological Correlation of Urinary Stones and Preoperative Urine Exam: Is There a Significatif Impact on Postoperative Infectious Risk?

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Introduction and objectives: The aim of this study is to determine the bacteriological correlation between preoperative urine exam and urinary stones and their impact on postoperative infectious risk.

Materials and Methods: A prospective monocentric study included 61 patients whom underwent urolithiasis surgery between January and June 2018. Extracted stones were sent for culture analysis. Clinical variables, stone configuration, microbiology reports of cultures were recorded. We analyzed the impact of bacteriological study of urine and stone cultures on postoperative urinary risk. The bladder location of the stone was observed in 52.5%, pyelic in 27.9%, ureteral in 19.7%. The extraction of the stone was carried out in monoblock in 72.1% and in fragments in 27.9%.

Results: The average age of our series was 55.3 years with a male predominance of 77%. Postoperative urinary sepsis was observed in 7 patients (11.5%). The urinary colonization rate was 29.5% (18 out of 61) whereas the rate of colonized stones was 31.1% (19 out of 61). The occurrence of urinary sepsis was found in 33.4% (6 out of 18) of patients with urinary colonization compared to 36.8% of patients with colonized stones (7 out of 19). On stones culture, we identified Escherichia coli as the most predominant colonizing pathogen (42.1% of cases) followed by Enterococcus feacalis and coagulase-negative Staphylococcus (15.8% for each). The chemical nature of colonized stones was predominantly calcium oxalate (monohydrate, dihydrate) and struvite ($p = 0.02$, $p = 0.02$) respectively. There is a statistically significant correlation between preoperative urine exam, bacteriological culture of stones, and postoperative urinary sepsis ($p = 0.002$, $p = <0.0001$), respectively.

Conclusion: The positivity of preoperative urine exam and the bacteriological culture of stones could have an impact on the risk of postoperative urinary sepsis. Thus, it is important to monitor these patients to well define the postoperative infectious risk.

UP-630

A Single Centre Experience of 12.5 Years in Simultaneous Tubeless Bilateral Percutaneous Nephrolithotomy: A Report of 134 Cases

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Introduction and Objective: To study the clinical outcomes of simultaneous tubeless bilateral percutaneous nephrolithotomy.

Materials and Methods: We retrospectively studied 134 patients who underwent simultaneous tubeless bilateral percutaneous nephrolithotomy in the Department of Urology, Kasturba Medical College, Manipal, Karnataka, India, from July 2006 to December 2018.

Results: A total of 134 patients, 104 male and 30 female patients with a mean age of 47.125 ± 11.48 years underwent simultaneous tubeless bilateral percutaneous nephrolithotomy. The mean stone burden was 316.04 mm^2, with 18 staghorn calculi. Mean operative time was 75.6 min. The success rate of simultaneous tubeless bilateral percutaneous nephrolithotomy (stone clearance) was 91.8%. Mean hemoglobin drop was 1.1g/dL per patient, with 8.9% of patients requiring blood transfusion. Mean hospital stay was 67.37 hrs. Complications also included urosepsis, acute kidney injury requiring hemodialysis, pneumonia and hydrothorax/pneumothorax requiring intercostal drainage tube insertion. On follow up, 4.1% of the renal units required ancillary procedures in form of percutaneous nephrolithotomy or ureteroscopy.

Conclusion: Our findings confirm that simultaneous tubeless bilateral percutaneous nephrolithotomy is a safe and effective modality of treatment with no higher morbidity than unilateral method. It reduces the need of a second anesthetic exposure, hospitalization time and costs. This has a significant socioeconomic impact on the outlook of patients presenting with bilateral renal stone disease.

UP-631

Analysis of Factors Affecting Treatment Outcome in Rigid Ureteroscopic Lithotripsy for the Proximal Ureteral Calculi: A Single-Surgeon Experience of 1704 Cases

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Introduction and Objective: We analyzed the factors affecting treatment outcome in rigid ureteroscopic holmium laser lithotripsy for the proximal ureteral calculi.

Materials and Methods: Seventeen thousand and four patients with proximal ureteral calculi underwent rigid ureteroscopic holmium laser lithotripsy. No stone with a length of 0.4 cm or more in KUB taken 2 weeks after surgery was considered to be successful. Gender, age, stone laterality, stone retention time, preoperative collecting system width, stone parameters (CT value, length, number), anesthesia method, presence or absence of difficult access, NTrap used or not, laser parameters (energy, frequency, power) were compared between the groups of success and failure for the surgery. Hierarchical comparison was used for some factors. Independent t test, Mann-Whitney U test and chi square test were performed by SPSS20.0. Logistic regression analysis was used to find the main influencing factors of treatment outcome.

Results: The overall success rate of lithotripsy was 91.55%. The success rate of right and single calculi was higher than that of left and multiple calculus. The success rate of those who have difficult access was significantly reduced. Cases with longer stone retention time, wider collecting system and higher CT value of the stone got lower success rate. Whether there was difficult access and the separation width of collecting system were the main factors affecting the treatment outcome in the surgery. The regression coefficients were -1.265 and -0.043, respectively. The total prediction accuracy was 91.50%. The success rate of cases with difficult access was 0.282 times of those without difficult access, and the success rate of cases with

UP.631, Table 1. Comparison of the parameters between the groups of success and failure in rigid ureteroscopic lithotripsy for the treatment of proximal ureteral calculi

Parameters		Success	Failure	Success rate	Statistics	P-value
Gender	male	1224	114	91.48%	χ^2=0.039	0.844
	female	336	30	91.80%		
Age (ys)		44.50±13.27	47.96±12.09		F=15.913,t=-3.259	0.220
					Z=-3.121	0.203
Stone laterality	left	840	90	90.32%	χ^2=3.982	0.046
	right	720	54	93.02%		
Stone retention time (day)		7.93±16.63	9.38±20.51		F=3.403,t=- 0.978	0.691
					Z=- 1.019	0.678
	<14	1308	132	90.83%	χ^2=6.158	0.013
	≥14	252 (	12	95.45%		
	<36	1494	132	91.88%	χ^2=5.080	0.024
	≥36	66	12	84.62%		
Collecting system width (mm)		17.72±6.64	22.50±16.31		F=182.937,t=-3.493	0.174
					Z=-1.289	0.599
	<20	1062	84	92.67%	χ^2=5.683	0.017
	≥20	498	60	89.25%		
	<30	1524	84	94.78%	χ^2=59.683	0.000
	≥30	72	24	75.00%		
CT value of stone (HU)		663.13±293.78	740.13±337.27		F=8.296,t=-2.648	0.228
					Z=-2.198	0.370
	<1000	1326	90	93.64%	χ^2=21.035	0.000
	≥1000	162	30	84.38%		
Stone length (mm)		9.67±2.78	10.04±3.48		F=19.394,t=-1.247	0.541
					Z=-0.312	0.899
	<10	888	66	93.08%	χ^2=1.007	0.316
	≥10	600	54	91.74%		
Stone number	single	1464	120	92.42%	χ^2=22.257	0.000
	multiple	96	24	80.00%		
Anesthesia method	intra-spinal	1248	108	92.04%	χ^2=2.028	0.154
	general	312	36	89.66%		
Difficult access	no	1236	72	94.50%	χ^2=63.144	0.000
	yes	324	72	81.82%		
NTrap used	no	1258	123	91.09%	χ^2=0.310	0.578
	yes	302	21	93.50%		
Laser energy (J)		0.79±0.12	0.79±0.04		F=10.860,t=-1.133	0.837
					Z=-2.126	0.386
Laser frequency (Hz)		30.29±2.20	30.00±1.45		F=9.949,t=2.171	0.530
					Z=-2.131	0.385
Laser power (W)		23.65±2.21	23.71±0.98		F=9.276,t=-0.628	0.892
					Z=-0.687	0.780

wider collecting system was 0.958 times of those with normal collecting system.

Conclusion: Presence of difficult access and the separation width of collecting system were two main factors affecting treatment outcome in rigid ureteroscopic lithotripsy for the proximal ureteral calculi.

UP-632

Renal Colic. From Diagnosis to Treatment Only in 10 Minutes. Is it Possible?

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Introduction and Objective: Renal colic is one of the most common causes for which patients visit the emergency department. Low Dose CT Scan without IV contrast is the gold standard examination. The combination of ultrasound with the KUB X-ray is an alternative solution. The differential diagnosis becomes faster resulting to a faster treatment of the patient's symptoms. The purpose of this study is to examine the possibility for a urologist to do the kidney ultrasound on his own immediately in the urology emergency department in order to reduce the time of differential diagnosis.

Materials and Methods: 60 patients who visit the emergency department with the clinical suspicion of renal colic underwent ultrasound assessment from 4 different educated urology residents. After that, the patients underwent kidney ultrasound from 4 different radiologists. The ultrasound results included the presence of dilatation or not but its grade also. We studied the correctness of the presence of dilatation and of its grade both in total patients' population and in subgroups based on BMI.

Results: In total of 60 patient's agreement between urology resident's and radiologist's kidney ultrasound was appeared in 68% patients. As for the patients with kidney dilatation the kidney ultrasound agreement was appeared in 60% patients and as for patients without kidney dilatation agreement was appeared in 96% patients. Studying the subgroups based on BMI, in patients with increased BMI agreement was appeared in 64% patients. Studying the kidney ultrasound by urology residents we have to mention that it had 100% specialty and 1 positive predictive value. In all cases where the urology resident diagnosed kidney dilatation, the patients suffered from renal colic. After all, we calculated that the average time for an ultrasound by a urology resident was 2 minutes and the mean time for the IM administration of a NSAID was 5 minutes.

Conclusion: Following an appropriate educational program, a urologist is able to evaluate and diagnose, renal colic with satisfactory degree of reliability in only 10 minutes, using kidney ultrasound. It consists a very useful tool for both the economics of urology emergency department and the radiology department.

UP-633

Percutaneous Nephrolithotomy in Patients with Haemophilia: Challenging the Traditional Norms

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Introduction and Objective: Percutaneous nephrolithotomy is traditionally contraindicated in patients with bleeding diathesis due to the risk of uncontrolled hemorrhage. There is a paucity of published information regarding its safety in patients with haemophilia, limited to case reports only. In this study, we evaluated the safety and efficacy of PCNL for large renal calculi in patients with haemophilia.

Materials and Methods: Between January 2014 to December 2017, we performed PCNL in 6 patients with Haemophilia A. After institutional ethics clearance, we studied the demographics, mean stone burden, intraoperative characteristics, postoperative outcome and complications in these patients. A comprehensive plan for perioperative management of these patients was done in conjunction with the hematologist and the anaesthetist.

Results: The mean age of 6 patients with haemophilia A was 33.33 ±9.03 SD. The mean stone size calculated by Lee's formula was 6.49 ±2.96 cm^2. The average sheath diameter ranged from 16.5-24 Fr (Mean – 21.75 Fr). Nephroscopy time ranged from 36 to 90 min (Mean – 62 min). The mean blood loss was 396 ±141 mL. Each patient had a nephrostomy and a double-J stent placed. The average time for nephrostomy and DJ removal was 3.5 and 13 days respectively. The length of postoperative stay ranged from 5-28 days. Complete clearance was achieved in 5. Stone free rate at 3 months was 100%. Complications were bleeding greater than 500 mL in 4 patients and postoperative fever in 2 patients. The mean duration of for which clotting factor was given was 4.83 (±1.94) days. Five out of six stones were composed of calcium oxalate, one stone was composed of uric acid.

Conclusion: This is the largest case series on PCNL in patients with haemophilia. Ensuring of replacement factors, multidisciplinary team approach, minimizing nephroscopy time, limiting the size of the access sheath and complete clearance to prevent recurrent haematuria are some of the key points to be considered in these patients.

UP-634

Combined Sonographic X-Ray Control with Lateral-PCNL

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Introduction and Objective: Traditionally, access to the kidney cavity is carried out in the patient's position on the back and directly and under X-ray control for percutaneous nephrolithotripsy (PCNL). In order to reduce the X-ray impact on the staff, decrease the number of kidney punctures same as possibility of pelvicalyceal system puncture for the first time, ultrasound control was applied for the puncture of pelvicalyceal system, and for the further formation of the operation channel – X-ray control. To reduce the risk of intestinal trauma, lateral PCNL was performed.

Material and Methods: Two hundred and sixty lateral-PCNLs in 243 patients, ages 23-78 years, perfomed from 2013 to 2018 were analyzed. In 226 (87%) cases puncture of the middle and lower calyces of the kidney was performed. Endoscopic optical system Karl Storz F24-26 and ultrasound lithotripter were used for surgical procedures. Surgical treatment of kidney stones 2.5-7 cm was performed. The multiple (2-3) accesses were used in 28 (10.7%) in case of coral stones of complex stereometric configuration. The average duration of the operation was 86 minutes. Total blood loss was less than 100 mL. In 251(96.5%) cases operation was completed by a nephrostomy, which remained for 12-36 hours during post-operative period.

Results: Experience of pelvicalyceal system puncture under control of the puncture adapter resulted in quick and unequivocally successful puncture of the hollow system of the kidney, in no case leading to perforation. The use of X-ray control only for dilatation of the working channel and post-operative "stone free" control reduced the overall radiological impact on the patient and the staff. Post-operative complications (such as exacerbation of chronic pyelonephritis, macrohematuria) were observed in 39 (15%) cases. Bleeding which required substitution hemostransfusion, in the post-operative period, was not detected. The "stone free" effect was achieved in 239 (92%) cases.

Conclusion: Our experience of ultrasound monitoring application for pelvicalyceal puncture and subsequent X-ray monitoring for reduction of the radiation impact on staff and patient, usage of nephrostomy allows the lateral-PNL stones to be carried out in a sufficiently efficient and safe manner. Moreover, results of the surgical treatment are comparable to the world-wide practice of other approaches to access and patient position during PCNL.

UP-635

Efficacy of Ureteroscopy with Pneumatic Lithotripsy for Ureteral Stone

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Introduction and Objective: To study the outcome and safety of ureteroscopy (URS) using pneumatic lithotripsy for treatment of ureteral stones.

Materials and Methods: A 2-years retrospective study (between April 2016 - March 2018) identified 112 patients undergoing URS lithotripsy with pneumatic lithotripter in Urology Clinic "VITA Hospital" in Prishtina.

Results: There were 56.25% man and 43.75% women. The mean age was 42.5 age (range 14 - 73 ages). In 53.6% of patient's stones were located in the right ureter, in 39.3% of patients in left ureter and in 7.1% of patient's stones were located in both ureters. Stones in 27 cases (24.1%) were located in the proximal ureter, in 29 cases (25.9%) were located in the middle ureter and in 56 (50.0%) were located in the distal ureter. 81.6% of patients were with stones smaller than 10 mm (range 4-33mm) and 28.9% of patients were with multiple ureteral stones. 16.9% of stones were treated

by extraction only 29.5% of patients were stendet before URS and 52.7% of patients were stendet during URS. The success rate depended on the location of the ureteral stone: proximal ureter 70.4%, middle 89.7% and distal 96.4%. The rate of stone moving to lower pole calyces were 6.25%. URS showed an overall success rate of 87.5%. Finally, only 7 patients (6.25%) required an open stone surgery. We did not confront major complication.

Conclusion: Ureteroscopy using pneumatic lithotripsy for treatment of ureteral stones has been shown to be an efficient and safe procedure.

UP-636

Influence of Pre-Instructing the Assistant Prior to Laparoscopic Urological Surgeries on Operative Time of Different Laparoscopic Procedures

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Introduction and Objective: Laparoscopy has become an integral part of residency training programs in different specialties worldwide. Most of laparoscopic surgeries require harmonic cooperation between the main surgeon and the 1st Assistant. Laparoscopic instruments have become enormous and more complex. Inability to handle the instruments in an optimal way can offer the main surgeon a hard challenge to safely complete the laparoscopic procedure. We aimed to evaluate the impact of pre-instructing medical students during their practical year (PYMS) before getting to assist in laparoscopic procedures on the operative time.

Materials and Methods: We underwent a retrospective cohort review of prospectively collected data from three different laparoscopic procedures done by three laparoscopic surgeons with comparable experience over a period of 2 years (02.2017 and 01.2019). Assistants were PYMS with no previous experience in laparoscopic operations. 70 PYMS were divided into 2 groups: Group A (N=35): received 180 minutes training about basic laparoscopic armamentarium including practice on a pelvitrainer and laparoscopic anatomy of abdomen and pelvis; meanwhile Group B (N=35): didn't receive such training.Demographic and clinical data were retrospectively collected and statistically analyzed.

Results: Patients' age and BMI distribution were comparable in both groups. Age in Group A: 60 (44-76) in Group B: 63 (39-78) (p=0.64). BMI in Group A: 22.4 (18.6 – 28.2) and in Group B: 22.6 (19.4 -27) (p=0.83). Patients in Group A vs Group B were 29 (82.8%) vs 25 (71.4%) males, whereas females were 6 (17.2%) vs 10 (28.6%) respectively. In each group, 15 laparoscopic radical prostatectomies, 15 laparoscopic nephrectomies and 5 laparoscopic adrenalectomies were evaluated. Mean overall operative time was 110 minutes (69-142) in group A vs. 129 minutes (93-160) in group B (p=<0.001*). Perioperative complications were 1 (2.8%) vs (11,4%) in group A and group B respectively.

Conclusion: Offering a briefing course for medical students with no previous laparoscopic experience prior to assisting in laparoscopic procedures can significantly reduce the operative time. We recommend offering PYMS and young residents such course before getting to assist in laparoscopic procedures.

UP-637

Cost Minimisation Analysis (CMA) of Intravenous Cyclizine Use in Post-Operative Patients

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Introduction and Objective: Intravenous (IV) cyclizine is 13 to 30 times more expensive than the alternative therapeutic equivalent ondansetron. Prolonged cyclizine administration is associated with user dependence and can result in drug seeking behaviour. Variable single item costs threaten trusts technical efficiency and operation profitability against tariff, a

UP.636, Table 1. Descriptive analysis of the study and patients' demographics

Parameter		Group A	Group B	P value
Number of procedures n (%)		35 (50%)	35 (50%)	--
Procedures	Lap RP n (%)	15 (21,4%)	15 (21,4%)	1*
	Lap Adrenalectomy n (%)	5 (7,2%)	5 (7,2%)	
	Lap Nephrectomy n (%)	15 (21,4%)	15 (21,4%)	
Surgeon	A n (%)	13 (18,6%)	9 (12,9%)	0.23*
	B n (%)	10 (14,3%)	17 (24,2%)	
	C n (%)	12 (17,1%)	9 (12,9%)	
Age of patients mean (range)		60 years (44-76)	63 years (39-78)	0.64**
BMI mean (range)		22.4 (18.6 – 28.2)	22.6 (19.4 -27)	0.83**
Patients' Gender	Male n (%)	29	25	0.79*
	Female n (%)	6	10	
OR time median (range)		110 min (69-142)	129 min (93-160)	<0.001 **
Perioperative Complication n (%)		1	4	0.16*

* Chi-squared test was used for analysis
** Mann-Whitney U test was used for analysis

UP.636, Table 2. Perioperative data according to participation in pre-assistance course and the performed procedures

Procedure	Parameter	Group A	Group B	P value
Lap Radical Prostatectomy	Patients age	62 years (56 -69)	63 years (53-67)	0.39**
	Patients' BMI	22.7 (20 -24.7)	22 (19.4 -24.8)	0.27**
	OR time	121 min (109 -142)	142 min (123-160)	<0.001**
	Complications	0	1	0.3*
Lap Nephrectomy	Patients age	54 years (44-76)	66 years (45-78)	0.14**
	Patients' BMI	21.9 (18.6 – 23.7)	22.3 (20.1 -24.1)	0.37**
	OR time	98 min (69-124)	121 min (103-136)	<0.001**
	Complications	0	3	0.07*
Lap Adrenalectomy	Patients age	60 years (44-73)	50 years (39-65)	0.4**
	Patients' BMI	24 (21.7 – 28.2)	25.9 (23.4-27)	0.55**
	OR time	79 minutes (71-90)	101 min (93-112)	0.008**
	Complications	1	0	0.3*

* Chi-squared test was used for analysis
** Mann-Whitney U test was used for analysis

recognised challenge in urological surgery (S. Harrison, GIRFT 2018; 1: 48). This study sort to perform CMA on two therapeutically equivalent post-operative anti-emetics, inform and positively change local practice. Materials and Methods: Prospective review of 100 consecutive elective urology and general surgery patients admitted to a single surgical ward over two discrete periods: (A) Dec 2017, (B) Feb 2018; (A) pre- and (B) post-intervention. Prescription and administration of anti-emetics recorded. Education of doctors and nurses; reminders at electronic prescribing. Cost minimisation analysis ($p < 0.05$). Results: 100 patient drug charts were analysed (n): 44 (A), 56 (B). IV cyclizine courses administered reduced from 44 (A) to 4 (B) ($p < 0.003$). IV cyclizine prescribed was 33 (A) and 56 (B). No significant difference in IV ondansetron administration or prescription ($p > 0.54$). A single course costs: €11.45 IV cyclizine and €0.88 IV ondansetron respectively. Direct cost of IV cyclizine administration reduced from €503.63 (A) to €45.78 (B), saving €457.84. Estimated annual direct cost saving of €5,494.13 equivalent to tariff payment for 7 optical urethrotomy or 3 TURBT.

Conclusion: Intravenous ondansetron minimises costs compared to cyclizine for post-operative patients by a factor of 13. Awareness of single use items ensures urological procedures remain profitable against tariff.

UP-638

Quality Evaluation of Education Content on YouTube Videos Regarding Lithotripsy Procedures

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Introduction and Objective: To determine the educational quality of YouTube lithotripsy videos as a teaching resource for urology trainees and/ or patients.

Materials and Methods: YouTube was searched using search terms; "lithotripsy", "kidney stone laser", "How to do ureteroscopy", "shockwave lithotripsy for doctors". The first 10 pages of videos for each search were screened by 2 assessors. We excluded videos that were animations, wrong topics, non-English, and duplicates. Included videos were assessed for usefulness by devising a scoring system with a maximum score of 19. To assess content, we created an objective scoring criteria derived from AUA and EAU guidelines for the treatment of kidney stones. This included five major criteria relating to the accuracy of the procedure description and five minor criteria related to the aesthetic of the video were also devised. Videos were deemed useful if they met all five major criteria as well as 3/5 of the minor criteria.

Results: A total of 580 videos were screened, with subsequent scoring of those that met inclusion criteria. The useful videos had more views per day, more likes per 100 views and were longer. Statistical analysis was pending.

Conclusion: YouTube is a vast resource for free online medical education, but only a small number of videos on lithotripsy demonstrated an educational quality that would benefit a urology trainee or even a patient. YouTube should be used as an adjunct educational aid, not a standalone resource.

UP-639

Omnecell- An Innovative Digital Prostate Cancer Journey of the Landmark Papers

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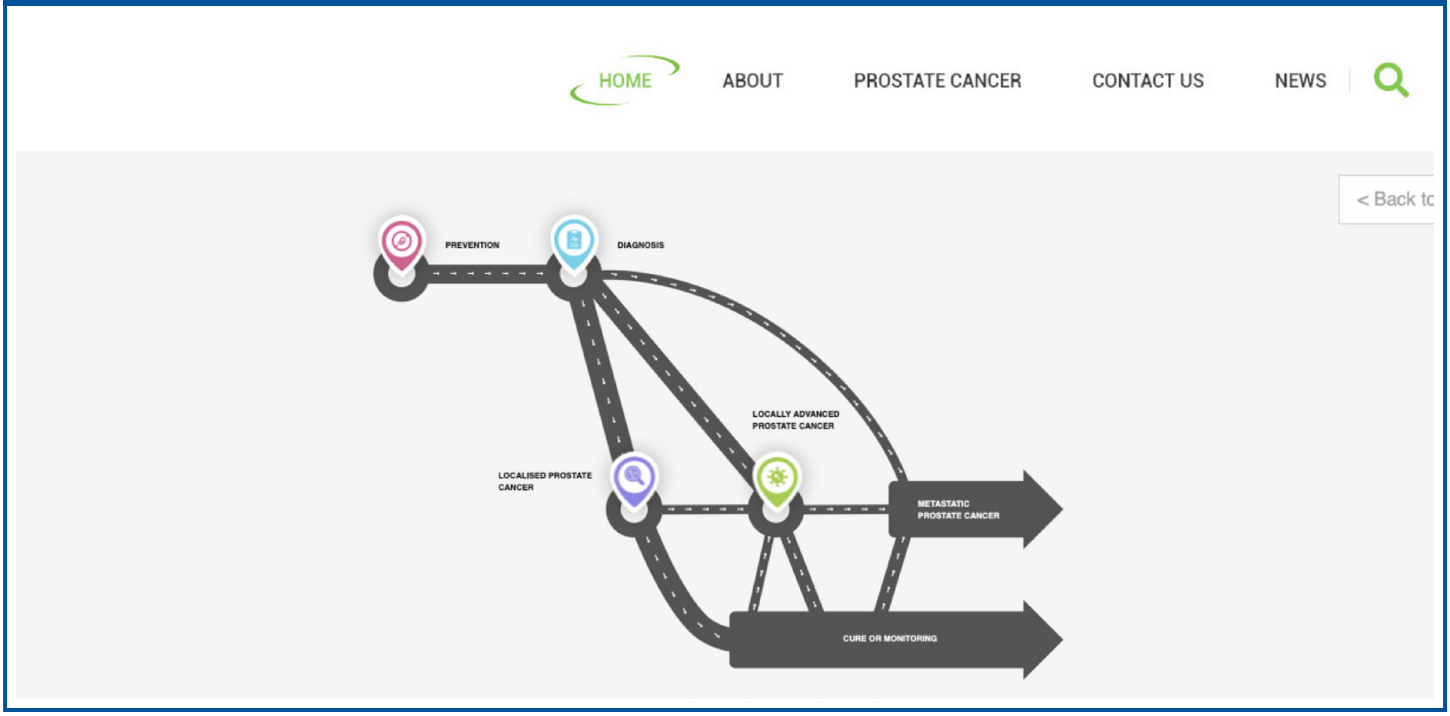
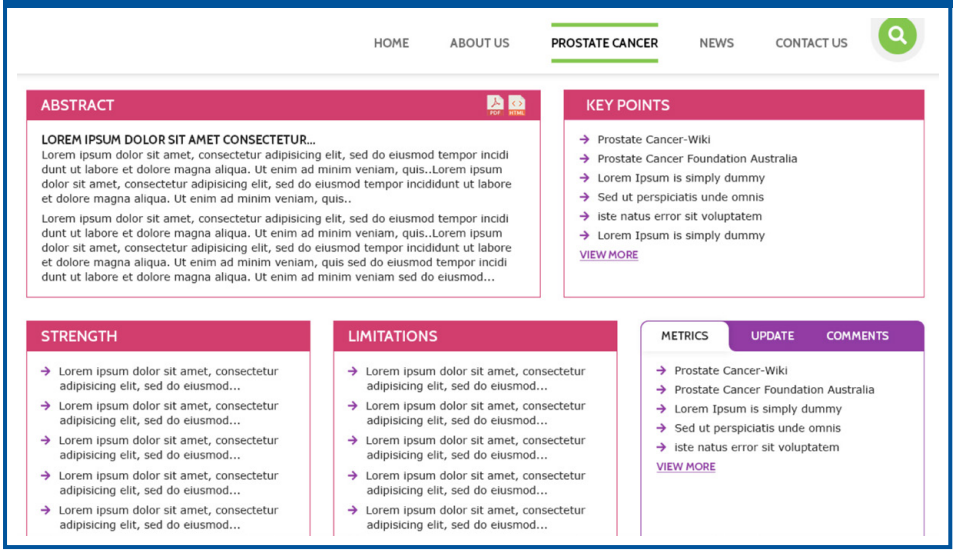
Introduction and Objective: There are currently several problems with the current literature: First of all, It is hard to find the most pertinent research papers for a specific disease treatment decision point. The literature is dead; there is no ongoing discussion of the strengths, weaknesses, and key messages of landmark papers and resources. Most doctors have only a superficial understanding of relevant medical literature. There is currently no central repository of analytical reviews and insights of the current literature. Our objective is to create an online crowd-sourced collaborative platform bringing together the best analytical reviews, insights, tweets, journal clubs and conference discussions about the important landmark papers and resources vital to the prostate cancer journey. We aim to bring literature to life and vastly improve doctors' understanding of literature to ensure we apply the right evidence to the right patient.

Materials and Methods: Omnecell is an online information and educational resource like the "Wikipedia" of prostate cancer that doctors and patients can use to navigate their way through the literature of the entire prostate cancer journey from prevention to palliation. Use the six primary page types to create content for the platform, which are: Home page (Figure 1), disease stage, treatment/investigation page, journal article (example in Figure 2), knowledge page, MDT page. The first phase prototype is in final stages of development with "23Digital" web page. Founding curators/moderators to be briefed about content creation and disease state curation. So far, activating the 50 Key Opinion Leaders from around the world have expressed enthusiasm for the platform.

UP.639, Figure 1. Example home page which is zoomable and interactive.



UP.639, Figure 2. Example journal article page type with ability to comment on papers and discuss strengths, limitations, and key messages.



UP-640

Transfer of Skills From Simulation Lab to Surgical Services: Impact of a Decade Long Laparoscopic Urology Surgical Course

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Introduction and Objective: To investigate the impact of decade-long dedicated laparoscopic urology surgical skills course on the successful implementation of surgical services by the participants.

Materials and Methods: We maintained a database maintained for all the participants in urological laparoscopic courses run by a single dedicated unit between January 2006 and December 2016. Data on various variables were collected using a follow-up validated questionnaire exploring speciality of clinical practice, challenges and need for additional training to establish clinical services, improvement in quality and frequency of laparoscopic courses. A subset of participants reported their data in BAUS Audit.

Results: One hundred sixty-one delegates from 18 countries attended laparoscopic skills courses during the study period of 10 years. Data were available for 154(95.65%) participants. There were only 20 (20/154;12.9%) responses to online website questionnaires despite 3 reminders. Further, follow-up through websites/telephonic contact/organisational contacts improved the response rate to 93% (143/154). Of the participants,95% (135/143) felt that these courses should be continued, and they agreed to recommend them to their trainees in the future. More than 50% (81/143; 56.6%) of the participants performed laparoscopic/robotic surgery at various centres. Sixty-two (62/143; 43.3%) did not pursue laparoscopic surgery as a career choice. Fifty-six (56/81; 69%) participants were established laparoscopic surgeons were from the UK, and of them, 30 (30/56;53.57%:30/81;37.04%) that contributed to BAUS Surgical outcome AUDIT. Results of all of these surgeons are within the normal range of their peers.

Conclusion: A dedicated course had a significant impact on the skills of participants, helping to establish clinical practice catering to a large proportion of the UK population and internationally.

UP-641

Visual Illusions Perception Correlates with Skills on a Virtual Reality TUR-P Simulator

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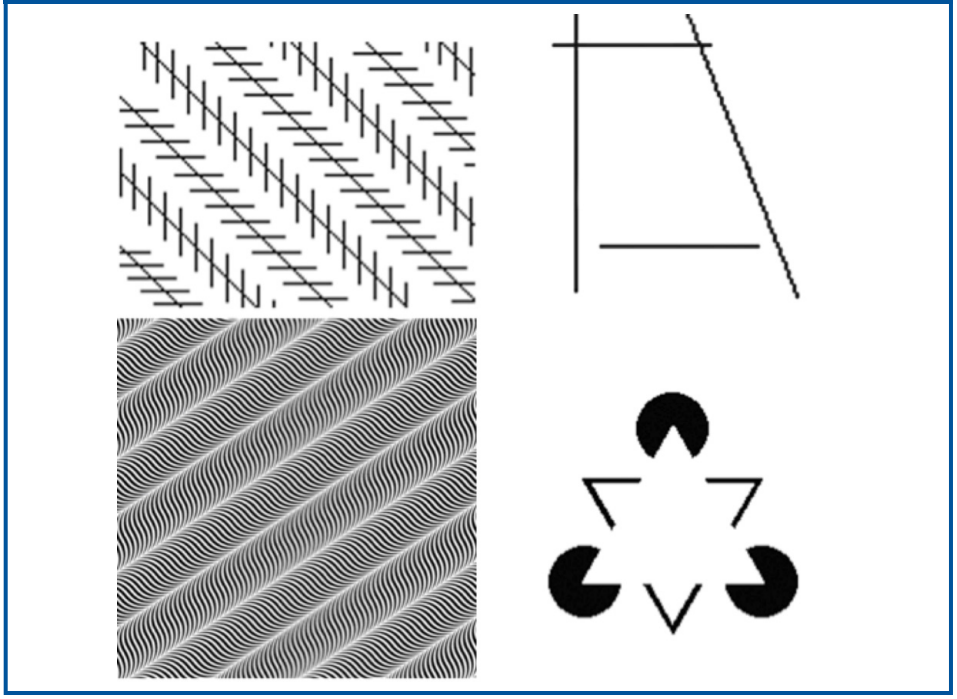
Introduction and Objective: Endoscopic surgeons need to form visual impressions of a three-dimensional structure from a two-dimensional monitor on which depth information is limited. Visual-spatial perception and perceptual-motor correlation are essential for the safe and successful completion of certain endoscopic procedures such as transurethral resection of the prostate (TURP). Visual illusions perception has been correlated to spatial cognitive abilities. The purpose of this study was to investigate the relationship of illusions perception with assessments of performance in the TURPSim™ by the supervisor assigned to the educational task.

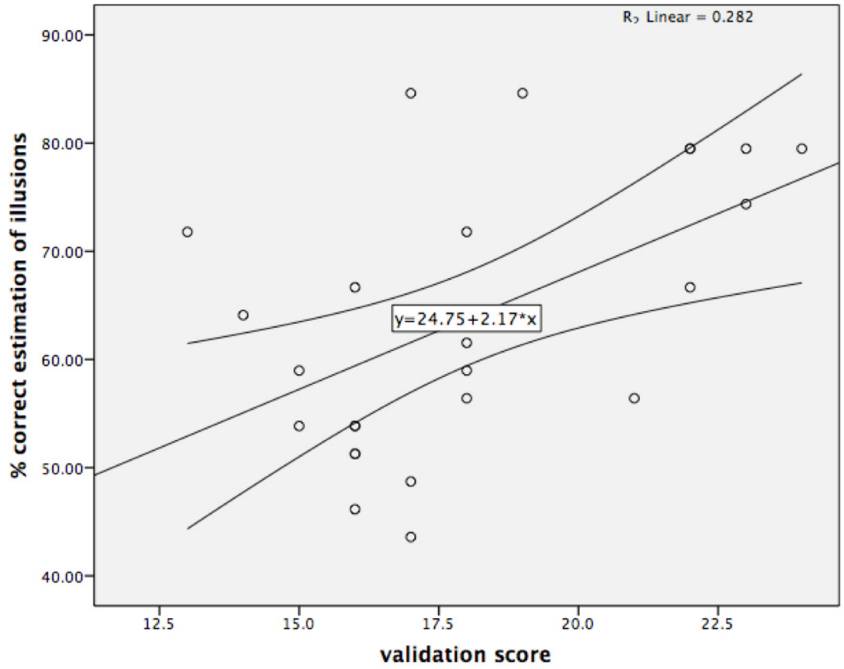
Materials and Methods: The TURPSim™ (Simbionix Ltd, Israel) is a simulator of TURP operating in Virtual Reality (VR) environment while providing tactile feedback. In a sample of 26 urology trainee's performance was evaluated by the supervising instructor based on a customized global rating scale. In addition, participants were presented a series of 39 visual illusions accompanied with certain statements that should be rated as "correct" or "wrong". The percentage of "correct" answers was correlated to the GRS score.

Results: The rate of correctly assessed illusions ranged from 44 to 85% (64 ± 12) and the GRS scores from 13 to 24 (18.3 ± 3.1). The correlation between them was statistically significant ($r^2 = 0.282$, $p = 0.005$).

UP.641, Figure 1. Example of optical illusions



UP.641, Figure 2. Correlation of % correct estimation of illusions to GRS



Conclusion: Visual illusions can be used to identify trainees of possible low performance in the TURP-Sim™ simulator. Future studies will show whether this also applies to objectively assessed performance in the operating theater. Early identification of poor performers with possible limited vision-spatial perception may help in adapting training to individual needs and search out alternative methods to increase spatial cognitive ability, playing with optical illusions being one of them.

UP-642

Percutaneous Nephrolithotomy Training Program for Urology Residents at Hasan Sadikin Hospital

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Introduction and Objective: Percutaneous nephrolithotomy (PCNL) is accepted to be the first line of treatment for large renal stones. However, potential complication such as bleeding occur. Improved skill and modification of the procedure may reduce the probability of adverse outcomes. Percutaneous endourological procedures require an advanced level of skill. Novice surgeon experiences longer median operative time and lower stone free rate compared to the experienced surgeon. In Indonesia, there are not many medical centers that provide PCNL education. Fortunately, at Hasan Sadikin Hospital, we provide urology resident with adequate PCNL education. In this study, we found no significant difference based on complications, median operative duration, and stone free rate between PCNL done by urology consultants and trained urology residents.

Materials and Methods: This is a retrosprospective study. We evaluate the difference between PCNL that was done by resident which compared to urology consultant in our hospital. Complications, stone free rate, and PCNL duration were documented. We analyze the differences using t test methods. Data analysis was done using SPSS version 21.0.

Results: Among 52 patients, based on the number of bleeding complications from the surgery performed by urology consultant there was no significant difference with the amount of bleeding from the surgery performed by the residents (P>0.05). Based on the stone-free level, it was found that postoperative stone-free conditions carried out by urology consultants there was no significant difference with post-operative stone-free conditions carried out by the residents (P>0.05). While based on the duration of the operation, the duration of surgery performed by urology consultant, does not have a significant difference with the surgery carried out by the residents (P>0.05). Based on the unpaired t-test, no significant differences were found in complications, stone-free rates and average duration of operation in PCNL surgery by urology consultants and urology residents. Conclusion: PCNL is one of the main endoscopic procedure for stone treatment, but it still remains difficult procedure with long life learning. More structure training program, restriction of working hour on training, and training under supervised clinical practice would improve learning capability for PCNL.

UP-643

Surgeons' Self-Assessed Learning Curve for Thulium (Tm-YAG) Laser Prostatectomy: Evaluation of a Nationwide Survey

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Introduction and Objective: To assess the learning curve of Thulium:Yttrium aluminium garnet (Tm:YAG) assisted prostatectomy techniques in the management of benign prostatic obstruction (BPO) based on the opinion of the surgeons.

Materials and Methods: A survey questioning previous surgical background information and Tm:YAG experience was distributed to Urology Departments in Germany employing the Revolix™ 120W surgical laser (LISA laser products, Katlenburg, Germany) for laser prostatectomy.

Results: A total of 65 questionnaires were distributed to respective urological surgeons. 38% of them responded. All participants were familiar with Transurethral Resection of the Prostate (TURP) while 48% of them had previous knowledge of other kinds of laser prostatectomy before initiating the Tm:YAG experience. Yet only 5% of them considered previous experience with other types of laser prostatectomies necessary to safely embark on Thulium surgery. Ninety-six percent of surgeons had technical training by the company and 80% received training in congresses and workshops. Only 36% of them had mentor assistance in the first procedures. According to the self-assessment of competence by the surgeons, a mean number of 24 cases were necessary to reach a plateau in performance. Still, according to 12% of responding surgeons more than 50 procedures might be considered necessary to reach surgical expertise. Furthermore, 92% of survey responders considered their experience with Tm-YAG laser prostatectomy as positive and recommendable.

Conclusion: Thulium (Tm:YAG) prostatectomy has an acceptable learning curve with a mean of 24 procedures required to achieve surgical confidence. Laser-naive urologists can learn how to perform a Tm:YAG-assisted prostatectomy even without proctoring. Technical training by the Tm:YAG laser manufacturing company seemed to be of great value for learning the operative techniques. Self-assessment by surgeons provides valuable insight into the learning curve of the procedure. Further evaluation investigating the clinical outcomes is deemed necessary to determine more accurately the learning curve of this laser technique.

UP-644

Don't Mesh Up Our Training! A Review of the Potential Impact of the 'Mesh Pause' on Urological Training

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Introduction and Objective: Urology trainees should provide evidence of >20 urinary incontinence (male/female, stress/urge) procedures for CCT: displaying breadth of learning and competence (Level 2). However, the trend towards specialism and the 'mesh pause' (July 2018) raises concerns of achieving indicative numbers.

Materials and Methods: The analysis of: BAUS Female SUI Surgical Outcomes Audit (SOA) (2015-17);

Hospital Episode Statistics (HES) database (2000-12); Qualitative data: urology trainees (2018).

Results: A total of 2,451 non-private procedures were recorded in BAUS SOA; 65% (n=1,718) included mesh. Non-mesh SUI procedures reflect lower volume surgery, despite an increasing trend; BAUS SOA: Autologous fascial sling: 340(13%); Colposuspension: 130(5%); Bulkamid 351(13%). BAUS estimated 310 trainees (2016); suggesting 7.9 procedures per trainee over 3years. Trainee numbers and volume varied per region (6-35, 0-332). Male SUI is not included in BAUS SOA; published HESS data: 250 cases (2012) with an increasing trend. Male SUI is mainly performed in specialist, tertiary referral centres; interest trainees need to arrange their placement within these centres. Botulinum toxin injections into the bladder has increased significantly; from 51 (2000) to 7,970 in 2012 (HES data). 78% (n=18) of UK trainees surveyed wanted UI procedures included in CCT requirements; 48% (n=11) felt confident they would achieve this; 65% (n=15) were concerned the 'mesh pause' would affect their training.

Conclusion: Trainees are concerned about their ability to achieve UI indicative numbers; importantly there is a loss of 68-69%% of SUI surgery in our regions due to 'mesh pause'. UK urology training may need to take into account other methods of teaching continence procedures.

UP-645

Forgotten Double J Stent: Whose Responsibility? About 14 Cases

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Introduction and Objective: Forgotten double J stent has a potential to cause significant morbidity as well as medico-legal issues and amplified cost. We highlight the ethical and legal implications of the treating urologist who accidentally left a stent in a patient.

Materials and Methods: We reviewed all patients who underwent double J stenting between January 2009 and December 2018 in three teaching hospitals in the north of Tunisia. We analyzed the stenting indication, the quality of information given to the patient (according to the medical folder) and any secondary complications due to the stent. We asked also both patients (n=14) and urologists (n=7) about ethical and legal aspects of this accident.

Results: The series accounts 12 male patients and two females with a median age of 52+/- 6,2 years. The primary pathology was urolithiasis (n=9), ureteral injury (n=2), sepsis (n=1) and renal trauma (n=2). Most of patients (n=9) seems to be not explicitly and adequately informed about the procedure and the stent. In only 10 cases, the urologist and the stuff seem to make a serious effort to contact the "absent" patient. Various complications were reported: non-functioning kidney (n=1), encrusted double J stent (n=6), lumbar pain (n=7), urinary infection (n=3), haematuria (n=5) and LUTS (n=10). Seven patients pointed on the urologist responsibility, 3 the hospital responsibility and 3 their own responsibility. All urologists but one engages their legal and ethical responsibilities in such situation.

Conclusion: Leaving a double J stent in a patient may result in disastrous situation. The indication should be well discussed and the patient well informed about the stent and possible complications. Basic appointment card system is not that efficient, and patient must be contacted in case of delay.

UP-646

Psychological Morbidity and Learning Styles in Medical Students Rotating Through Urology

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Introduction and Objective: Medical students have distinctive learning styles. These have been characterised into four domains (active/reflective, sensing/intuitive, visual/verbal and sequential/global). Incongruity between these learning styles and the methodologies employed in medical school may come at a psychological cost. We hypothesize that specific learning styles may also have an impact on the psychological well-being of the students. This study aims to define the distribution of learning styles amongst local students and identify any patterns in relation to reported psychological morbidity.

Materials and Methods: The study evaluated the prevalence of depression, anxiety and stress symptoms among medical students who were enrolled in the National University of Singapore and rotating through Urology in September to December 2019. The students completed the validated Index of Learning Styles Questionnaire and the Depression Anxiety Stress Scale (DASS 42). The data was analysed using bivariate Spearman's Correlation test using SPSS Statistics.

Results: 56.2% of the 96 medical students were of female gender and mean age was 22.6 years. Our results report that a majority of the students preferred global (62.5%) style over sensing. The percentage of active and reflective learners were fairly evenly distributed (46.9% vs 53.1%). 16.3% of medical students had moderate or severe scores for depression, 31.3% for anxiety and 18.8% for stress. Depressive levels are correlated with being a reflective learner (Spearman's rho= 0.371, p= 0.036) and being a global learner (Spearman's rho= 0.411, p= 0.02). Gender or age did not have any significant impact on the active/reflective or sequential/global domains. Anxiety and stress levels did not show any correlation to the learning styles.

Conclusion: Urology teaching tends to be more active as opposed to reflective. Depressive levels are correlated with reflective and global learning styles, hence there should be greater efforts to reach out to learners whose styles may be marginalised during urology postings. In addition, medical education should include tutelage of student to adopt a more active learning style through problem-based learning and direct interactions.

UP-647

Three-Dimensional Printing Models in Bladder Radical Cystectomy: A Valuable Tool for Surgical Training and Education

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Introduction and Objective: To evaluate the impact of 3D bladder models on how clinical medical students understand and learn about bladder anatomy and radical cystectomy processes following clinical education.

Materials and Methods: 45 first-year graduate clinical medical students enrolled into this study, then were randomized to either a 3D+CT group educated with 3D models+CT images or a 3D group educated with 3D models only or a CT group educated with CT images only. Pre-/post-training testing and a third part assessment were carried out for assessment of knowledge acquisition. Student feedback was measured by filling out questionnaires. The results of the test, the third part evaluation and the student feedback were collected and compared.

Results: The pre- and post-training test results indicated that all three groups have the same effect on knowledge acquisition, the P value compared with each group were >0.05. Meanwhile, the third part of the assessment showed that the students of the 3D+CT group and 3D group benefited over the CT group, in area of understanding the bladder spatial structure and RC processes (P<0.05), while there is no difference between 3D+CT group and 3D group on it. The average self-evaluation score in the 3D+CT group and 3D group were 20.4 (±0.57) and 20.13 (±0.53), respectively, while it was 16.8 (±0.66) in the CT group. 3D physical models could improve the students' satisfaction on surgical training.

Conclusion: 3D physical models could help medical students in improving their understanding of the bladder spatial structure and help in the education of bladder radical cystectomy.

UP-648

Minimally Invasive Treatment of Traumatic or Iatrogenic Complicated Intraperitoneal Bladder Rupture

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Introduction and Objective: Bladder rupture is practically classified as extraperitoneal or intraperitoneal and is usually caused by trauma (blunt, penetrating, iatrogenic). Non iatrogenic intraperitoneal ruptures are caused by a sudden rise in intravesical pressure secondary to a blow to the pelvis or lower abdomen. As far as it concerns treatment, intraperitoneal bladder ruptures by blunt trauma are usually managed by surgical exploration. Small uncomplicated iatrogenic intraperitoneal perforations can be managed conservatively. The objective of this study is to present our ex-

perience in the minimally invasive management of iatrogenic or traumatic intraperitoneal bladder ruptures.

Materials and Methods: During the years 2012-2016 a total of 7 patients with complicated intraperitoneal bladder rupture were managed in a minimal invasive way. The cause of the rupture was endoscopic procedures in the bladder in 3 patients, blunt trauma in 2 patients and obstetric surgery in 2 patients. In all patients a two-way foley catheter was placed. In addition, an intraperitoneal drainage tube was inserted by ultrasound or CT guidance. The decision of this minimally approach was due to concomitant diseases which prevented us from open surgery or due to the patients' denial to undergo surgery.

Results: Mean duration of catheterization was 18 days. The intraperitoneal drainage tube was removed in an average of 5 days after its initial insertion. All patients underwent cystography prior to the removal of the two-way foley catheter which confirmed the successful management of the rupture. No patient underwent open surgery and no severe complications were noted (fever, renal failure, intraperitoneal abscess).

Conclusion: Complicated intraperitoneal bladder ruptures caused by iatrogenic maneuvers or blunt trauma can be managed in a minimal invasive way by a combination of a two-way foley catheter in the bladder plus an intraperitoneal drainage tube inserted via ultrasound or CT guidance. All patients initially managed in this way in our department presented no need of open surgical exploration. As a result, minimally invasive treatment is a viable and safe choice especially in patients with concomitant diseases unfit for open surgical exploration.

UP-650

Spontaneous Bladder Rupture After Radical Treatment for Pelvic Malignancy

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Introduction and Objective: Spontaneous bladder rupture is a rare disease occurring as acute abdomen. In cases after the treatment of pelvic malignancy, the diagnosis is often challenging because of treatment-associated bladder neurogenic dysfunction.

Materials and Methods: We experienced 6 bladder ruptures in the past 15 years. All 6 female patients received surgery and radiotherapy for uterine cancer. Median age was 70 years old (range 47-77), and median duration after primary disease treatment were 20 years (range 6-36).

Results: The chief complaint was acute abdomen in 5 and abdominal distention in 1. The diagnosis was made by cystoscope findings (1), ascitic fluid (6), and transient serum Cr increase (5). Median time to diagnosis from symptom onset was 7 months (range 0-24). All 6 patients were conservatively managed by urethral catheter placement (UC) and fasting followed by intermittent catheterization (IC). Three patients experienced several episodes of acute abdomen. At last follow-up, IC required in 5 patients and UC in 1.

Conclusion: Correct diagnosis was often difficult because urinary tract symptoms are not clear and hidden in gastrointestinal symptoms. The low-pressure management of the bladder for lifetime is most important when accurate diagnosis is made.

UP-651

Comparison of Primary Endoscopic Urethral Realignment and Radiologic Interventional Urethral Realignment of Treatment in Patients After Traumatic Urethral Injury

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Introduction and Objective: Recently, it has been known effectively to perform primary endoscopic urethral realignment for traumatic urethral injury as early as possible. However, there are limitations of failure of endoscopic operation due to poor visual field if severe bleeding is present or patients of general condition who can't perform surgery. We evaluated the outcomes of primary endoscopic urethral realignment (PEUR) vs radiologic interventional urethral realignment (RIUR) in these patients as an alternative treatment.

Materials and Methods: This retrospective study included 35 patients with traumatic urethral injuries between 2012 and 2018. These patients were divided two groups (PEUR group vs RIUR group). The primary outcome was the success rate of primary realignment, procedure time, length of hospital day, duration of urethral catheterization. Secondary outcomes were the incidence and time to develop symptomatic urethral stricture.

Results: Procedure of PEUR and RIUR were technically successful in 15 of 20 patients (75.0%), 11 of 15 patients (73.3%) respectively. The rest of the patients (9/35,25.7%) underwent suprapubic cystostomy. There was no statistically significant difference between two groups. Mean procedure time of PEUR group was significantly longer than that of RIUR group (35 ±10.5 vs 22 ±18.8 min, p <0.001). And the former required general or spinal anesthesia, but the latter was only sufficient for local anesthesia. While there were no significant differences in the period of hospital day, duration of urethral catheterization between both groups, respectively(7.6 ±1.4 vs 6.4 ±2.2 days, p >0.05), (15.5 ±3.8 vs 13.4 ±4.9 days, p >0.05) although terms of the former were slightly longer than these of the latter. There were no immediately important complications related to both procedures, although the 7 patients (7/15, 46.7%) treated with PEUR and 6 (6/11, 54.5%) with RIUR developed symptomatic urethral stricture after procedure. Mean time to develop symptomatic urethral stricture after procedure was 3.3 ±1.8, 2.4 ±1.2 months in each group. There were slightly higher incidence and shorter time to develop urethral stricture in the RIUR group, but they were not statistically significant difference (p >0.05, respectively).

Conclusion: RIUR is excellent short-term outcomes such as simplicity of anesthesia and short procedure time, while PEUR has a merit that the incidence of urethral stricture, which is a complication, is low and takes longer time.

UP-652

Outcome of Surgical Management of Fracture Penis - A Study in a Tertiary Level Hospital of Bangladesh

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Introduction and Objective: Immediate surgical repair is the standard of care for penile fracture. The study was done to assess the outcome of surgical repair of fracture penis.

Materials and Methods: This study was a quasi experimental study which was conducted during the period of January 2017 to December 2018 in urology department of DMCH. Thirty-five patients with fracture of penis were included in the study by maintaining the selection criteria. After proper evaluation and taking informed written consent, surgery was performed under spinal anesthesia. The tear of corpora cavernosa and concomitant urethral injury repaired with polyglactin suture material. Intraoperative artificial erection was performedin all cases. Patients were advised to abstain from sexual activity for 6 weeks following surgery. Follow up was given at 6 weeks, 3 months and at 6 months. Postoperative erectile function assessed by validated questionnaires of IIEF-5 for married and single question self report (SQSR) for unmarried patients. Voiding status through IPSS. All patients were interviewed to complete the same questionnaires retroactively for assessment of erectile function and voiding status before fracture of penis.

Results: The patients were in the age range of 24 to 60 years, and mean age was 36.4 years. The most common precipitating cause for fracture was vigorous sexual intercourse (68.57%). Mean time of occurrence to surgery was 10.26 ±2.3 hours (4hrs to 48 hrs). Rupture of tunica albugenia occurred in all cases with rupture of corpora cavernosa in right, left and bilateral was 65.71%, 25.71% , 8.51% subsequently. Urethral injury found in 4 cases. Four patients developed mild form and three had mild to moderate form of erectile dysfunction. Two patients had mild urinary symptoms according to IPSS score. Wound infection was present in 3 cases, four patients had developed mild penile curvature. Nodule presented at fracture site in every case with gradual reduction in size. All patients complained of pain during intercourse, but pain gradually subside with time with adequate erection.

Conclusion: Early surgical correction of fracture penis is associated with good outcome with preservation of erectile and voiding functions.

UP-653

Reconstruction of Extended Ureteral Defects: The Role of Boari Bladder Flap

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Introduction and Objective: We conducted a retrospective evaluation of the extended ureteral recon-

structions with the help of open Boari bladder flap performed within one specialized center.

Materials and Methods: The study included 70 patients who were operated on from 2008 to 2018. Based on the length of the bladder flap, all patients were divided into three groups: Group 1 - reconstruction of the lower third of the ureter to the level of the iliac vessels (n= 31); Group 2 - reconstruction of the lower and middle third of the ureter to the level of 3 cm above the iliac vessels (n= 33); Group 3 - reconstruction of the lower and middle third of the ureter to the level of its upper third (n= 6). The average follow-up period was 24.6±3.4 months.

Results: The length of the bladder flap varied from 3 to 21 cm and averaged 9.8±1.4 cm. The total level of intraoperative complications did not exceed 12.9%. This parameter was significantly higher in the third group (p <0.017), whereas no statistical differences between Group 1 and 2 (p <0.678) were registered. In most cases, those complications presented as severe scar tissue formation and inflammatory changes in the retroperitoneal space. Early postoperative complications were recorded in 36% of the patients. They included pyelonephritis (32.9%), urine leakage from the postoperative wound (11.4%) and chronic urinary retention (2.9%), which were observed with equal frequency in all three groups. Severe dysuria occurred in 10% of the patients and was significantly more frequent in Group 3 (p <0.016 for Groups 1 and 3, p <0.046 for Groups 2 and 3). The total level of positive long-term results was 91.5% (n= 64). Nephrectomy due to negative results of the surgery was performed in 2 (2.3%) cases. Persistent decrease in bladder capacity was registered in 2 of 70 (2.3%) patients.

Conclusion: Boari bladder flap reconstruction helps to restore patency of the lower and middle third of the ureter in most patients with good functional results.

UP-654

Ureteral Avulsion Following Ureteroscopy: A Single Center Experience

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Introduction and Objective: We present our experience with ureteral avulsions following semi-rigid ureteroscopy for ureteral stones.

Materials and Methods: It is a retrospective study done between January 2000 to December 2018.

Results: There were 7 cases of ureteral avulsions. Four of them happened in-house and three were referred from other centers. All were males with a mean age of 35.7 years. Avulsion involved left side in 4 patients and right in 3. All patients had impacted relatively large (mean 11.3 mm) ureteric stones with proximal ureteric location in 6 and distal ureteric location in 1. The semi-rigid ureteroscopes used ranged from 4.5/6 F to 8/9.5 F. Five cases had two-point avulsions with loss of the whole length of ureter. Two cases had one-point avulsion- one distal ureteric and the other mid-ureteric. Three avulsions were caused by senior-consultants, 3 by junior consultants, and 1 by a trainee. One distal ureteric avulsion was repaired by immediate uretero-neo-cystostomy. In a case of one-point mid-ureteric avulsion with ureteroscope and stone basket stuck at the injured site, immediate laparotomy was done, instruments were disentangled followed by uretero-ureterostomy. Two patients with two-point avulsions were managed with immediate laparotomy and classical ileal replacement of ureter. Three cases with two-point avulsion referred from elsewhere were initially managed with percutaneous nephrostomy (PCN). Subsequent definitive repair involved classical ileal replacement of ureter in 2 patients and complete ureteral replacement by yang-Monti technique in one. All patients had satisfactory outcome.

Conclusion: This is one of the largest series of ureteral avulsions. Two-point avulsion was commoner than one-point avulsion. Risk factors for ureteral avulsions were male gender and relatively large impacted proximal ureteral stones. Small size of the scope and long experience of the surgeon are not necessarily safeguard against ureteral avulsion. Prevention involves avoiding forceful endoscopic maneuver and staging the procedure in case of difficulty. The classical ileal replacement of ureter is a reliable salvage option in the acute situation. Yang-Monti technique of ileal replacement of ureter is also a viable option in a stable patient who has been managed initially with PCN for few weeks.

UP-655

"An Erotic Retention": A Case Report of a Self-Inflicted Urethral Foreign Body

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Introduction and Objective: A foreign body inside the male urethra is an uncommon complaint that urologists encounter. This case report describes the management and patients' profile in dealing with urethral foreign body.

Materials and Methods: We report a case of a 50-year old male, who was initially managed as a case of acute urinary retention. Further workup included a KUB ultrasound which showed a suspicious linear echogenic shadowing structure. Pelvic X-ray was done to confirm the suspicious findings, which revealed a tubular like opacity which looked very similar to a pen. The patient underwent cystoscopy with foreign body extraction, and later on developed penile and scrotal abscess.

Results: The patient was scheduled for emergency cystoscopy with extraction of foreign body. A metallic pen was retrieved from the urethra. The patient tolerated the procedure well. On the 3rd post-operative day, there was noted increase in swelling in the patient's penis and scrotal area. Due to the persistent swelling and appearance of necrotic areas with purulent discharge, the patient was scheduled to undergo wound debridement and incision/ drainage of abscess. He was also advised psychiatric evaluation for further evaluation as an outpatient.

Conclusion: There are only a few published articles on insertion of foreign bodies on male urethras. The diagnosis of a foreign object may be difficult due to inconsistent claims during history taking. Consequently, patients may come in for consult due to the secondary complications. Management of these cases is primarily surgical which include cystourethroscopy to diagnose urothelial injuries and to directly visualize if there are no fragments left. These objects can be successfully extracted by endoscopic methods with the aid of forceps, snares, and baskets. Psychiatric intervention is later warranted to these patients.

UP-656

Percutaneous Tibial Nerve Stimulation in the Treatment of Primary MonoSymptomatic Nocturnal Enuresis

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Introduction and Objective: Nocturnal Enuresis (NE) is a common problem in the pediatric population, affecting up to 8en at 10 years of age. NE can have a profound psychologic impact on a child'self-esteem and social interactions as well as contribute to parental frustrations and anxiety. in this study we aim to investigate the effect of percutaneous tibial nerve stimulation (PTNS) in children with primary monosymptomatic nocturnal enuresis

Materials and Methods: A total of 60 patients were included in this prospective study. They were divided into two groups: Group 1: Included 30 patients, each patient was submitted to one PTNS session per week for 12 week each session last for 30 minutes. Group 2: Included 30 patients, each patient was submitted to medical treatment.

Results: By using 12 weekly sessions of PTNS, remarkable clinical results were obtained. About 81% of patients post treatment reported a statistically significant subjective improvement in reduction of frequency of NE, 73.3% showed partial response and 6.7% showed full response

Conclusion: This study demonstrates that posterior tibial nerve stimulation is a well-tolerated, safe, non-invasive, reduce the frequency of nocturnal enuresis episodes in children and improve the quality of life.

UP-657

Is Detrusor Overactivity a Predictor Factor of Posterior Tibial Nerve Stimulation Outcome in the Treatment of Overactive Bladder?

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Introduction and Objective: Posterior Tibial Nerve Stimulation (PTNS) is a well-known treatment for overactive bladder (OAB) not responding to conventional treatment. Herein, our aim is to assess the significance of Urodynamic proven Detrusor Overactivity (DO) on the outcome of PTNS in patients with OAB syndrome.

Materials and Methods: Single center, retrospective study, reviewed the medical charts of all adult patients with OAB with or without detrusor Overactivity (DO) who underwent Posterior Tibial Nerve Stimulation (PTNS) in our center between January 2012

until December 2018. Hospital Institutional review board was obtained before starting the study. Patients' demographic data, diagnosis, voiding diary pre and post Posterior Tibial Nerve Stimulation (PTNS) treatment, and outcome collected. All patients had baseline investigations (urine analysis, serum Creatinine, Urodynamic study, Renal Ultrasound). Each Patient had to fill a voiding diary and quality of life questionnaire at the beginning of therapy (Week 0) and after completion of the initial weekly therapy (week 12). The success of treatment was defined as 50% or more improvement of voiding dysfunction symptoms in voiding diary. PTNS was continued for 24 sessions in patients who showed 50% improvement or more of symptoms after 12 sessions. Patients who were considered as success completed another twice/month session for three months then once/month sessions for another 6 months (total of 12 Months therapy).

Results: Forty-nine patients (35 female and 14 male) with a mean age of 43 years (range 18-77) were included. Two patients were excluded from the study because no urodynamic study was done. Twenty-nine patients (59.2%) had no DO and 20 patients (40.8%) had DO. PTNS treatment showed an overall success rate of 61.5%. In OAB patients with no DO, 15 patients (51.7%) had improvement, while 16 OAB patients with DO (80%) had Improvement. There is a statistically significant difference between the outcomes in both groups ($p < 0.05$). All patients have completed all sessions with no complications or significant side effects. Results showed that patients with proven detrusor Over activity by Urodynamic study have a statistically significant outcome over those who has urgency frequency syndrome without Urodynamic proven Over activity.

Conclusion: In patients with OAB, a urodynamic proven Detrusor Over activity (DO) predicts posterior Tibial Nerve Stimulation outcome. Success rate is more frequently encountered after PTNS treatment in patients in whom urodynamic evaluation showed DO compared to those with negative DO on urodynamic (Urgency frequency syndrome).

UP-659

Differences in Quality of Life and Health Seeking Behaviors between Neurological and Non-Neurological Patients with Urinary Incontinence

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Introduction and Objective: Despite the high prevalence of Urinary incontinence (UI) among neurological patients, only a small fraction of them seek medical advice for UI. We conducted a questionnaire-based study aiming to record the differences in quality of life (QoL), UI severity and health seeking behaviors between neurological and non-neurological patients. We also developed and studied the psychometric properties of the Health Behavior Questionnaire (HBQ), a three-domain gender-specific tool to assess embarrassment, fear and decision making when seeking medical advice for UI.

Materials and Methods: Neurological and non-neurological patients with UI who attended a public teaching hospital's Urology outpatient clinics were interviewed. The study tool comprised five modules: 1) demographics and medical history, 2) King's Health Questionnaire (KHQ), 3) International Consultation on Incontinence Questionnaire-Urinary Incontinence (ICIQ-UI) 4) HBQ, 5) a previously validated treatment adherence questionnaire.

Results: We recruited 100 neurological and 100 non-neurological patients (36 men, 164 women). Most neurological patients (52%) suffered from MS. Almost half (55.1%) had sought medical advice. Of them, 68.7% were under UI medication for more than a year. Neurological patients scored higher in the KHQ domains of incontinence impact (p=0.018), physical (p=0.028) and social (p=0.000) limitations, personal relationships (p=0.008), emotions (p=0.002) and embarrassment related to UI (p=0.048). The two groups demonstrated similar severity of UI in ICIQ-SF scores. HBQ Validation. The HBQ modules showed either excellent (Cronbach's α =0.852 and 0.757 for embarrassment and fear modules, respectively) or moderate reliability (α =0.601 for decision making about treatment seeking). HBQ results. Neurological patients scored higher in fear to reveal bad habits to physicians (p=0.046), were more commonly referred to a Urologist by their treating Neurologist (p=0.01), more concerned about outpatient clinics' accessibility and facilities (p=0.021), but less concerned about possible financial burden associated with medical visits (p=0.01), more compliant with the timing of administration of medication (p=0.024) and a daily medical regimen (p=0.047), and understanding the need for medical treatment (p=0.047).

Conclusion: Neurological patients were more severely affected in their QoL by UI than non-neurological patients, and showed differences in factors affecting decision-making when seeking medical advice and in adherence to treatment. The HBQ might become a reliable tool to explore health behaviors towards treatment-seeking for UI.

UP-660

Urologic Trauma from Vaginal Dilation for Congenital Vaginal Stenosis: A Newly-Described and Challenging Complication

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Introduction and Objective: Vaginal dilation is first line therapy for vaginal agenesis. No urologic complications have even been described. The only reported non-gynecologic trauma during vaginal self-dilation has been rectal injuries in patients with radiation induced vaginal stenosis.

Materials and Methods: Description of management of urethral trauma in two patients with a history of congenital anomalies managed with vaginal dilation.

Results: Case 1: 19-year-old female with history of urogenital sinus anomaly status post vaginal reconstruction with total urogenital mobilization 10 years prior. The patient had been doing self vaginal dilation for vaginal stenosis when she developed discomfort and acute onset urinary incontinence. Exam revealed a 24Fr urethrovaginal fistula immediately distal to the most stenotic portion of the vagina and 2cm proximal from meatus. Cystoscopy revealed no additional urologic trauma. With the patient in prone jackknife position, the vagina was repaired at the same time to allow exposure. The fistula tract was excised and the urethra repaired in 3 layers. The stenotic segment of the vagina was incised and augmented posteriorly using a 2x2 cm vaginal mucosal graft harvested from redundant distal vaginal tissue. A 16Fr catheter was left for 2 weeks. At most recent follow-up, she has no urinary symptoms, urethral stricture or fistula. Case 2: 27-year-old female with history of Mayer-Rokitansky-Küster-Hauser syndrome and vaginal agenesis managed with vaginal dilation. During vaginal self-dilation, the patient developed vaginal bleeding. Intra-operative exam revealed an anterior vaginal wall tear and ventral urethral disruption to the level of the bladder neck. Cystoscopy revealed no additional urologic trauma. The urethra was repaired in two layers in dorsal lithotomy position. A 16fr catheter was left for 7 days. At follow-up, she has mild stress urinary incontinence but has no urethral stricture or fistula.

Conclusion: These are the first two reported cases of urologic trauma while using vaginal dilators. We describe management and successful outcomes of immediate repair for urethral trauma following vaginal dilation. Proper exposure is difficult, but urologic repair can be achieved with or without concomitant vaginal repair.

UP-661

Autologous and Transobturator Sling Surgery as Primary Treatment for Post-Prostatectomy Urinary Incontinence: A Systematic Review and Meta-Analysis

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Introduction and Objective: Transobturator slings are an established treatment option of post-radical prostatectomy stress urinary incontinence (pRP-SUI), but little is known about the outcomes of autologous sling surgery. This review aims to evaluate the efficacy and safety of transobturator and autologous sling surgery in pRP-SUI.

Materials and Methods: MEDLINE, EMBASE and CENTRAL were systematically searched for prospective studies investigating the outcomes of transobturator and autologous sling surgeries for pRP-SUI. The primary outcomes were cure and improvement rates of pRP-SUI. The secondary outcome was the rate of surgical complications.

Results: Fourteen studies (eleven involving transobturator and three autologous slings) with a total of 877 patients were included in the meta-analysis. Cure rates were 50% (95% CI 39% - 60%) in transobturator and 82% (95% CI 58% - 93%) in autologous slings, whereas improvement rates were 30% (95% CI 26% - 34%) and 20% (95% CI 14% - 28%), respectively. Complication rates were 12% (95% CI 6% - 20%) and 10% (95% CI 3% - 27%) in transobturator and autologous slings, respectively.

Conclusion: Our findings indicate that both transobturator and autologous slings are effective in curing and improving pRP-SUI, with similar complication rates. Evidence is insufficient to support superiority of either surgical treatment. Further randomised controlled trials are necessary to directly compare the two procedures.

UP-662

Impact of Surgeon's Experience in Long-Term Outcome of Sacral Neuromodulation

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Introduction and Objective: Management of overactive bladder symptoms, urinary retention (non-mechanical), and chronic pelvic/bladder pain can be refractory pelvic floor physiotherapy, oral medications and intravesical injections/instillations. Sacral Neuromodulation (SNM) has shown to be a very effective treatment option for these refractory symptoms. Although this treatment modality has been available for decades, to our knowledge there is no data on the impact of surgeon's experience on long-term outcomes.

Materials and Methods: Failure of SNM was reviewed in patients who had received the implant during the first year in practice of a single surgeon and compared to failure rates in those who received the implant after 18 months of the surgeons' experience. The outcomes were categorized into (1) initial results (at the first two post-implant visits), (2) early results (during the first 18 months) and (3) long-term results (18-36 months). The study period was confined between December 2013 and December 2015 to allow for three years follow-up. Failure was defined as (1) < 50% improvement despite conservative management or (2) revision of the implant due to inefficacy or bothersome symptoms resulting from the implant.

Results: A total of 25 patients had received SNM implants during the first year of the surgeon's experience while 31 implantations were done between 18 and 24 months of experience. The demographic data, including age, sex, BMI and the distribution of patients with storage symptoms, urinary retention and pelvic pain were similar in the two groups (p >0.05). Mean implantation time during the first and second years of experience were 55 minutes (25-142) and 36 minutes (24-60) respectively; with 34% of surgeries in the first year lasting > 60 minutes. Initial failure rates were higher during the first year (12% vs 6.25%); however, this was not statistically significant (p= 0.44). Although Log-rank (Mantel-Cox) test did not show significant outcome difference during 36 months of follow-up (p= 0.6), the long term outcomes (after 540 days of follow-up) were significantly better in patients who had received the implants during the second year of surgeon's experience (p= 0.04).

Conclusion: Surgeons' experience can play a significant role in long-term outcome of SNM implantation.

UP-663

Urethral Sphincter Evaluation on Magnetic Resonance Imaging Predicting Urinary Incontinence 1 Year After Radical Prostatectomy

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Introduction and Objective: Radical prostatectomy is one of the most commonly used treatments for localized prostate cancer. Urinary incontinence and erectile disfunction are frequent consequences of the procedure. They are the main predictors of patients´ quality of life. Age and body mass index appears to be the main predictors for urinary incontinence after surgery. Some studies suggest that membranous urethra characteristics are associated with urinary incontinence after surgery. We reviewed the rates of continence and compared with membranous urethra characteristics evaluated by magnetic resonance.

Materials and Methods: Between 2012 and 2016, a total of 68 patients underwent open radical prostatectomy in our institution for localized prostate cancer. Mean patients´ age was 64.7 years old.

Results: Mean urethral length was 15.0 mm [7.5 – 24.3 mm]. Mean sphincter width was 12.2 mm [7.4 – 23.5 mm]. The amount of incontinence was evaluated by the "International Consultation on Incontinence Questionnaire-Short Form" (ICIQ-SF) Question 2: "How much urine usually leaks?". Fifty of 68 patients were completely dry after 1 year of follow-up (73.5%). Two patients referred "a small amount", 6 patients "a moderate amount" and 10 patients "a large amount". Mean urethral length in continent patients was 14.0 mm. Mean sphincter width was 12.75 mm. Among patients with moderate and large amount of urinary leak mean urethral length was 17.0 mm and mean sphincter width was 11.0 mm. No significant difference was found between both groups.

Conclusion: Urinary incontinence is a major concern in patients´ quality of life after radical prostatectomy. Our study didn´t show any difference between continence status and membranous urethra characteristics in magnetic resonance.

UP-664

Cystitis Cystica: Knowing the Nature of Unknown Voiding Dysfunction

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Introduction and Objective: To study the presentation and natural course of cystitis cystica- a controversial premalignant lesion of the bladder.

Materials and Methods: A retrospective analysis of patients with histopathologically proven cystitis cystica for bladder lesion between 2016 till 2018 was done. Perioperative details along with the last available follow-up were included in the analysis.

Results: In total, 10 patients were included. The mean age (±SD) was 33.4 (±11.9) years and 9 (90%) were males. The most common presentation was irritative and obstructive lower urinary tract symptoms (90%) along with haematuria (30%), suprapubic pain (40.0%) and acute urinary retention (10%). All of the patients underwent transurethral resection of the bladder tumor as diagnosed on preoperative imaging. All of the patients had a trigonal lesion with bullous appearance partially obstructing the bladder neck. Five patients (50%) had backpressure changes in the kidneys and underwent either bilateral JJ-stenting or percutaneous nephrostomy. The mean follow-up duration was 15.4 months. Patients were kept on surveillance cystoscopy along with upper tract evaluation. The mean number of recurrences was 1.7 (±0.8) with a mean number of recurrent resections was 1.4 (±0.4). One of the patients had to undergo bilateral ureteric reimplantation with resection of the lesion along with augmentation cystoplasty while another patient underwent cystectomy with urinary diversion owing to recurrence and refractory lower urinary tract symptoms. In addition, there was no evidence of malignancy subsequent to this entity in any of the patients.

Conclusion: Cystitis cystica is a rare entity and usually occurs in the younger population. Exact etiology and natural course of the disease is still unknown.

UP-665

Predicting Incontinence Post Radical Robotic Prostatectomy Using Preoperative MRI Mapping of Pelvic Floor Structures

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Introduction and Objective: Urinary continence post radical robotic prostatectomy (RRP) arises from a complex interplay between pre-morbid state, operative technique and rehabilitation. Pelvic floor structures vary between patients and contribute to continence post RRP. This study aims to assess if preoperative MRI mapping of pelvic floor structures can predict continence post RRP.

Materials and Methods: A retrospective review of pre-operative MRI imaging for RRP performed by two urologists with similar techniques over a 12-month period were considered. Measurements of the length of puboprostatic ligament (PPL), membranous urethra (MU), prostatic urethra (PU), pubourethralis (PUr), rectourethralis (RU), pelvic floor thickness and descent were performed. Continence was assessed at 3 and 12 months post RRP and was defined as 0-1 pads per day for occasional dribble. Statistical analysis was performed using Welch's t test with p value <0.1 considered to be statistically significant

Results: Preoperative, surgical and post-operative care was standardized for all 33 patients included in this study. 45% of patients achieved full continence by 3 months. The mean PPL, MU and PU measurements were 1.16cm +/- 0.24cm, 0.88cm +/- 0.23cm and 4.97cm +/- 1.23cm respectively. Comparing those with full continence versus those ongoing rehabilitation; a short PPL length and long MU (>1cm, p=0.001) and PU (>4cm, p=0.09) lengths were most predictive of functional outcome. The mean PPL length for continence at 3 months was (1.14cm +/-0.21cm), continence at 12 months (1.17cm +/- 0.24cm) and incon-

tinence at 12 months (1.27cm +/-0.18cm). This trend was statistically significant (p=0.0849) when PPL length was taken as a ratio of individualized pelvic floor length.

Conclusion: This study assessed various physical dimensions of the pelvic floor in patients undergoing RRP. Measurements such as PPL and MU were predictive of functional outcome and may be used in the future to help counsel patients or tailor pelvic floor exercise post RRP.

UP-666

Is There a Role for B3 Agonists or Anticholinergics in the Treatment of the Lower Urinary Tract Symptoms (LUTS) in Patients with Multiple Sclerosis (MS)?

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Introduction and Objective: Multiple Sclerosis (MS) is the most frequent autoimmune demyelinating disease of the Central Nervous System. Patients suffering from MS usually present with overactive bladder syndrome. Most common symptoms are increased frequency, urgency, incontinence and nocturia which intervene negatively in the quality of life and also affect the ability of patients to work. LUTS occur on average 6 years after the onset of the disease while all patients experience LUTS within a period of 10 years since the initial diagnosis. Our objective is to study the efficacy and safety of treating patients with MS and LUTS using either b3 agonist (mirabegron) or anticholinergics.

Material and Methods: This is a randomized controlled trial including 40 patients with MS and LUTS from a single center. At baseline all patients underwent thorough clinical examination including neurological examination and DRE. Medical history was recorded. All patients underwent urine test, urine cultivation and abdominal ultrasound. All patients completed a urination diary (for at least 3 consecutive days) and specific questionnaires such as MusiQoL and NBSS. At second visit and after all the above were completed, all patients were administered either a b3 agonist (mirabegron) or anticholinergics. The choice of which anticholinergic drug to be used was random as no such drug shows any superiority compared to the others. More specifically, twenty patients (the 1st group) received mirabegron 25mg and twenty patients (the 2nd group) received solifenacin 5mg, tolterodine 2mg or fesoterodine 4mg. The treatment was always carried out alongside with the MS treatment. Reevaluation was performed 3 months after the first visit. All patients underwent the same clinical and imaging tests that were carried out at first visit.

Results: We compared several clinical and imaging parameters (scores of the 2 questionnaires, potential pelvic or calyceal dilatations, increased urine residual volume, infection, Qmax flow rate) between the two groups at first visit and month 3 after treatment. In both groups, improvement in LUTS was recorded. A statistical analysis was performed in both groups using the t-test. No statistical difference was noted between the mirabegron group and the antimuscarinic group in terms of LUTS improvement. Adverse events were reported in both groups.

Conclusion: All MS patients receiving either mirabegron or antimuscarinic therapy for LUTS showed an improvement. Nevertheless, no statistical difference was noted between the two groups.

UP-667

Experience with SARS (Sacral Anterior Root Stimulator) in Suprasacral Spinal Cord Injury Patients: Lessons Learned

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Introduction and Objective: SARS (Sacral Anterior Root Stimulator) is an implantable electronic device to provide voluntary control of micturition, defecation and erectile function in spinal cord injury patients (SCI). It includes a bilateral dorsal rhizotomy and implantation of electrodes at S2-S4 roots. We review our results focusing on device function.

Materials and Methods: Between January 2013 and March 2019, 15 SARS were implanted, 13 men and 2 women. There were 8 quadriplegics and 7 paraplegics, average age 44 years (range 31-59). Average follow-up was 49 months (range 8-74).

Results: The system is evaluated in 3 dimensions: bladder, intestinal and erectile function. Bladder function: 87% (13/15) use SARS successfully 4-5 times/day, with a 250-700cc voiding volume and 50cc post void residual. One patient with de novo sphincter incompetence received a synthetic male sling. Three pt. (20%) require occasional bladder catheterization (all caregiver-dependent quadriplegics). Two pt. (13%) failed urinary management: 1 pt. did not increase bladder capacity, remaining incontinent and the other did not tolerate SARS due to painful stimulations; both required a continent urinary diversion. Six pt. (40%, all quadriplegics) presented symptomatic urinary tract infections (UTIs), related to poor caregiver technique. Defecatory function: 93% (14/15) successful daily use. Erectile function: 85% (11 of 13 males) obtain good erections with SARS stimulation. However, of the 6 patients sexually active preSARS, only two (33%) use SARS for intercourse because of displacement of the external antenna. Eventually, 4 patients (31%) require a penile prosthesis implantation. Complications included: two patients (13%) showed postoperative neurapraxia, which resolved spontaneously after 12 months, and two other patients (13%) suffered extrusion of the internal antenna. We observed malfunction/damage of the external hardware in 10pt (67%), mostly related to operator misuse.

Conclusion: SARS success was 87% for micturition, 93% for defecation and 33% for intercourse. Our main difficulties were in caregiver-dependent quadriplegics due to operator misuse, causing damage of the external hardware or symptomatic urinary tract infections. Loss of reflex erections was also an undesired side effect in sexually active patients. According to this, we believe the best candidate for SARS is an adult able paraplegic, without use of his reflex erections for intercourse.

UP-668

Long-Term Efficacy and Safety of Adjustable Device for Treatment of Male Stress Urinary Incontinence

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Introduction and Objective: We report our experience with an adjustable device (ATOMS®) in the treatment of male SUI with a long follow-up.

Materials and Methods: Retrospective, nonrandomised, multicentre study. Eighty-two ATOMS® devices have been implanted in two tertiary hospitals in Spain, from September 2012 to March 2019. 78 were analyzed (6 months follow-up) Clinical data, etiology and SUI severity were initially collected. Preoperative evaluation was performed by cough stress test, cystoscopy, 24-hours pad-test and urodynamics. Outcomes, complications and evolution were registered during follow-up. Statistical analysis was done through Stata 2.0.

Results: Mean age was 67 years (±4.8). Radical prostatectomy was the most common cause of SUI (86%). 22% had received external radiotherapy (ERT) previously.33 patients had mild-to-moderate SUI and 58% were severe SUI. Median follow-up was 37.8 months (±21). Continence-rate (dry or less 10g/24h): 74% at 6 months, 78% at 12 months, 79% at 24 months, 83% at 36 months, 80% at 48 months and 88% at 60 months. No differences in continence rate were found between mild, moderate or severe SUI. Continence rate in ERT patients was lower (p<0.0001): 39%, 37%, 38%, 55%, 57% and 60%, respectively. Device refill was performed in 87% patients (3.3±2.24 times each). 5 abdominal valves, 17 scrotal valves and 56 scrotal pre-assembled valves (72%) have been implanted. There were no complications during surgery.Minor complications: 11 spontaneous voided devices and 3 acute urinary retentions. These complications were less frequent in pre-assembled devices (p<0.04). Major complications: 4 valves were removed (3 infections and 1 extrusion). 2 patients needed burying valve. 5 devices were totally removal due to infection (3) and urethral perforation (2).Reoperation rate was 14%.Patient satisfaction was assessed with visual analogical scale: 8.7.

Conclusion: ATOMS® device is safe, easy to implant and can treat male SUI successfully with a low rate of complications and device explanations. Previous ERT might influence the achievement of complete continence after implantation. Counselling with radiated patient before implantation is necessary to warn about lower rates of total continence.

UP-669

Long-Term Efficacy and Safety of a New Adjustable Single-Incision Sling for the Treatment of Female Stress Urinary Incontinence

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Introduction and Objective: The aim of this study is to report our results on the efficacy and safety of a novel adjustable single-incision sling (Altis® Coloplast, France) for the treatment of female stress urinary incontinence (SUI).

Materials and Methods: Retrospective, nonrandomised, multicentre study. Two-hundred seventy-three women (273) underwent sling placement in two tertiary hospitals from February 2012 to March 2019.Preoperative assessment was performed by cough stress test, urinalyses, and urodynamics. Outcomes were measured by a cough stress test, questionnaire ICIQ-SF and recording of complications following IUGA recommendations.

Results: We analyzed 197 patients with a minimum follow-up of 12 months. 8 patients were missing. Mean age was 57.5 years (±12.7). One-hundred eighteen patients (59.9%) presented mixed incontinence (MI). Thirty patients (15.2%) underwent simultaneous surgical intervention for pelvic organ prolapse (POP). Median follow-up was 35.4 months (12-70). Success was achieved in 134 patients (92%) two years postoperatively. During follow-up, five patients were reoperated with adjustable TVT procedure. After five years of follow-up, 89% of patients were dry.Thirty patients had recurrent SUI (15.2%) and all had resolution.About MI, 91% were cured of SUI and 66% were cured of urgency. Urgency decreased at one month, from 59.9% to 20.6% (p< 0.001). Early complications: 1% vaginal extrusion (3AT1S3 and 3AT2S1), 2% vaginal hematoma (no IUGA), 2% voiding dysfunction (4BT1S5 y 2x4BT2S5), 5.2% groin pain (1Bd-eT1-2S3). Lower age and absence of previous urgency were risk factors associated with early complications (OR:0.96, CI 95%:0.92-0.99, p=0.017; OR:0.39, CI 95%:0.15-0.93, p=0.033).Late complications:2.6% urgency de novo,2.2% voiding dysfunction (4BT2S5), 2% UTI (no IUGA), 4.2% chronic groin pain (1Bd-eT2S3). Two patients required total sling removal for pain relief.Previous SUI surgery was the only factor associated with late complications (OR:2.88, CI 95%:1.01-7.61, p=0.047).Decreasing ICIQ-SF index showed high statistical significance during follow-up (p<0.001). Satisfaction and benefit were high.

Conclusion: The Altis® Single incision sling is an efficacious and safe device for the treatment of female SUI and can cure urgency in 66% of case of MI. Previous surgery or urgency and younger age are risk factors for developing complications.

UP-670

Multicentre Experience with the Refillable Artificial Urinary Sphincter ZSI 375 PF: One Year Follow-Up

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Introduction and Objective: The aim of the study is to report the experience in 4 tertiary hospitals with the ZSI 375 PF (Zephyr Surgical Implants, Geneva, Switzerland).

Materials and Methods: Retrospective, nonrandomised, multicentre study.From December 2015 to March 2018, 29 male patients underwent refillable artificial urinary sphincter ZSI 375 PF implantation in 4 tertiary hospitals in Spain, with minimum follow-up of one year. Data collection of clinical chart and clinical interview and exploration of the patients was performed and introduced in an Excel calculation worksheet. Statistical analysis was done through G-stat 2.0.

Results: Median age was 69 years old (range 56-83). Radical prostatectomy was the most common cause of SUI (89.6%). External radiation therapy (ERT) was performed in 16 patients (and HIFU in one of them). Previous treatments: Three AMS-800™, 2 Virtue™ male sling, 1 Remeex™ male sling and Flow-Secure™ after, 2 botulinum toxin and 1 Urolastic™.Cervicectomy was performed in 10 patients, and 4 patients had prior history of recurrent urinary tract infections (RUTI).Median pad test was 1070g (range 260-1533). Urodynamic study was performed showing urinary incontinence in all patients, plus overactive bladder in five.No intraoperative complications were recorded, and patients were discharged 1-3 days after surgery. The device was inactivated 50 days after surgery on average (range 45-60).Refill was performed in 16 patients (1-5 times each) with a median volume of 1.2 ml. Ten of these patients have received ERT (including the patient after HIFU, 62.5%).Complications:Erosion was developed in 4 patients and the device was explanted; three patients had prior ERT. Mechanical failure was demonstrated in two patients and devices were changed (Clavien-Dindo III). No risk factors were found (p>0.5). After 1 year of follow-up, persistent urinary incontinence has been diagnosed in 8 patients, 5 with prior ERT (p>0.5). Continence immediately after activation was related with continence during follow-up (OR: 19.6, IC 95%: 2.61- 4.18, p=0.002).

Conclusion: The refillable artificial urinary sphincter ZSI 375 PF is a reliable alternative with good continence results and a low complications rate.

UP-671

Patient Reported Outcomes Measures for Intradetrusor Injections: Local or General Anaesthesia- Which Gives Better Outcomes?

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Introduction and Objective: Symptoms of overactive bladder, refractory to medical therapy, can often be managed successfully with onabotulinum toxin. These can be done under local or general anaesthetic. The aim of this study is to review patient reported outcome measures on response to intradetrusor injections.

Materials and Methods: A retrospective case-control study was conducted including 62 patients were treated from 2008-2016, 8 cases of neurogenic detrusor overactivity, 54 with idiopathic detrusor overactivity. Urodynamic and clinical parameters were compared between groups. The primary endpoint was the rates of success defined as the combination of urgency, urinary incontinence, and detrusor over activity resolution.

Results: All cases in both GA and LA groups had Urodynamics beforehand and ISC taught. ISC was used in 5 cases in each group. The patient reported response was 18/18 in the GA group and 19/22 in the LA group. The average time to response was 15.3 months in the GA group and 10.5 months in the LA group. There were 4 UTIS in each cohort, but two with voiding dysfunction and one with retention of urine in the LA group.

Conclusion: Intradetrusor botox injection is efficacious and safe, with a good patient response. Patient reported outcome measures are successful for assessing outcomes from onabotulinum therapy.

UP-672

Clinical Predictors for Postoperative Outcomes of Equal Severity for Stress and Urge Mixed Urinary Incontinence

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Introduction and Objective: Mixed urinary incontinence (MUI) is common disease among women with urinary incontinence. However, there is no clinical factors that can predict the postoperative outcomes of MUI are unclear. We tried to determine predictive clinical factors for postoperative success rate and satisfaction in female patients with equal severity for stress and urge MUI.

Materials and Methods: The postoperative success rates (PSR) were classified into 2 groups according to the degree of postoperative incontinence status (1) cure group (CG, no incontinence and up to 50% improved), and (2) fail group (FG, fail). The degree of postoperative satisfaction (PS) is classified into 2 groups as (1) satisfaction group (SG, very satisfied and satisfied) and (2) dissatisfaction group (DG, equivocal and dissatisfied). All patents were performed a full examination and urodynamic study.

Results: Total patients were ninety women with equal severity for stress and urge MUI. Postoperative SG were 66 patients (73.3%) and DG were 24 patients (26.7%). PSR included CG were 84 (93.3%) and FG were 6 (6.7%). In PS, significant difference included body mass index (BMI) (P= 0.028), Valsalva leak point pressure (VLPP) (P= 0.041) and overactive bladder symptom score (OABSS) (P <0.001) between SG and DG. In PSR, significant difference revealed VLPP (P= 0.011), OABSS (P <0.001) and Stamey symptom grade (P= 0.028) between CG and FG. In multivariate analysis, VLPP (P= 0.008) and OABSS (P <0.001) were independent predictor of PS and VLPP (P <0.001) was only independent factor of PSR. Especially, in post Hoc comparison analysis, significant difference of PS revealed between intrinsic sphincter deficiency (ISD) and anatomical incontinence (AI) in VLPP (P= 0.008) and between mild and severe symptom in OABSS (P= 0.002). Significant difference of PSR revealed between ISD and AI in VLPP (P= 0.001).

Conclusion: The higher VLPP, the higher both PS and PSR. The OABSS is also independent predictor for the PS. It is possible to help for evaluation and the appropriate management for MUI. However, more studies are needed to find diverse factors that can predict the postoperative results of stress or urge predominant MUI.

UP-673

Long-Term Use of Intra-Detrusor BotulinumToxin A in Adults with Spina Bifida

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Introduction and Objective: Intra-detrusor Botulinum Toxin A (BTX-A) is an effective and established treatment for neurogenic detrusor overactivity (DO) in children, and adults with multiple sclerosis or spinal cord injury. Little evidence exists for BTX-A in adults with Spina Bifida (SB). This study aims to report long-term clinical outcomes of intra-detrusor BTX-A in adults with SB; evaluating patient satisfaction, quality of life (QoL) and treatment durability.

Materials and Methods: We retrospectively analysed the clinical records of all SB patients at a large neurosciences centre treated with BTX-A. Demographic, clinical, QoL and urodynamic data were acquired. Urodynamic assessment was performed pre-BTX and follow up when feasible.

Results: We identified 152 adult patients with SB, mean age 26 years (18-47), 82 males, 70 females. 17 (11%) patients received BTX-A, with first treatment at mean age 11 years (4-19). Mean number of rounds was 6 per patient (1-13), totalling 89 individual treatments. 53/89 (59%) had Dysport (mean dose 1000 U) and remainder had onabotulinumtoxinA (250 U). Mean follow up was 11 years. All patients were taking an antimuscarinic concurrently. 13 (76%) performed Clean Intermittent Self Catheterisation pre-treatment and all continued afterwards. 10 (58%) patients had previous reconstructive urinary tract and bowel surgery. Pre-treatment urodynamics demonstrated mean bladder capacity of 350 mL (200 to 480), 13 (76%) DO, 11 (64%) compliance loss, 4 (24%) stress urinary incontinence, 7 (41%) recurrent urinary tract infections (UTIs), and 5 (29%) vesicoureteric reflux also requiring treatment. 5 (29%) patients discontinued BTX-A due to inefficacy or worsened UTIs; 2 (12%) had augmentation cystoplasty, 1 (6%) ileal conduit, 1 (6%) renal transplantation and 1 is awaiting urinary diversion. Patient self-reported satisfaction showed mild-moderate benefit on a Likert scale. Mean ICIQ-OAB scores pre and 3 months post latest BTX was 6.8 and 4.1 respectively, with bother score improving from 17.8 to 8.6.

Conclusion: This study attempts to examine long-term durability of BTX-A treatment in a very complex patient group. We identified competing factors that may lead to treatment discontinuation; including compliance loss, recurrent UTIs, vesicoureteric reflux and stress urinary incontinence. 14/17 (82%) patients elected for repeat BTX-A, with positive self-reported satisfaction and improved QOL scores.

UP-674

A New Device for Intermittent Bladder Emptying: A Longterm Study

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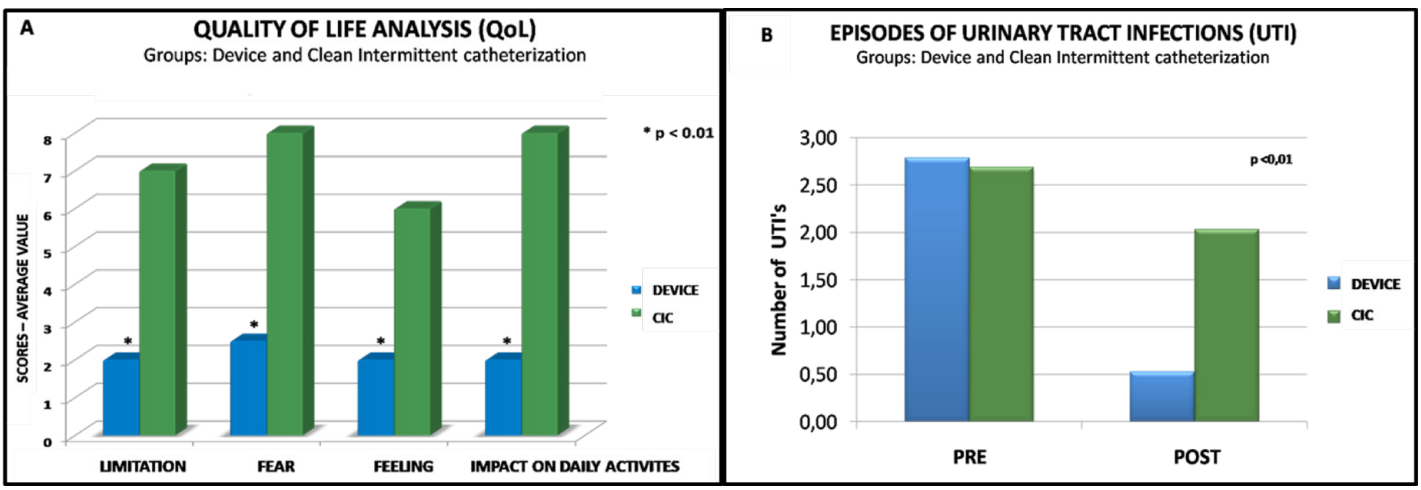
Introduction and Objective: The present study aims to test the functionality of a new device for intermittent bladder emptying in female patients with failure of bladder filling and emptying mechanisms in a long-term analysis.

Materials and Methods: A randomized clinical trial was conducted from March 2015 to December 2018 involving 177 female patients suffering mostly from neurogenic bladder. Patients were allocated in Group I – Device Group (DG) and Group II- Clean Intermittent catheterization (CIC). The primary outcome was defined as the impact on Quality of life (QoL) in both groups. Data from episodes of urinary tract infection (UTI), adverse effects, number of pads per day as well as costs related to other forms of treatment were also evaluated. The new device was applied in an outpatient basis. No important inconveniences were observed during the procedure. Devices were replaced every 2 months following the same protocol. A complete urologic evaluation was done every 6 months to check urinary tract status.

Results: There was a significant improvement in Qol when comparing pre and post implantation of the device (p <0.001). A significant decrease in UTI episodes was detected (p <0.001) (Figure1). No significant adverse effects were observed. There was also a significant reduction in the number of pads per day.

Conclusion: The longterm study of this group of patients showed very promising results specially with improvement of QoL and decreasing on the occurrence of UTI. This may represent a significant step forward concerning the way of dealing with females with deficiency of mechanisms of filling and emptying of the bladder.

UP.674, Figure 1. A: Ost-intervention Analysis of QOL accordong to SF-Qualiveen (DEVICE and CIC). B: Analysis of number of UTI.



UP-675

The Incidence of Acute Urinary Retention after Botulinum Toxin Intradetrusor Injection

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Introduction and Objective: Botulinum toxin is nowadays widely used for the treatment of detrusor overactivity. Unlike antimuscarinics, botulinum toxin might induce acute urinary retention, imposing clean intermittent catheterization (CIC) for voiding. Our prospective trial focused on the real-life incidence of acute retention or high volume PVR imposing CIC in our center.

Materials and Methods: A total of 52 consecutive patients were included in this study and followed for 12 months. They were treated with at least two different antimuscarinics before being switched to second line therapy because of lack of efficacy. Abobotulinum toxin type A 500U was injected as per our standard of care. CIC was started if the PVR reached or exceeded 250 mL or if the patient complained about severe voiding dysfunction and had a PVR of at least 50 mL. Monthly visits were performed. If CIC was started, its total duration was also monitored. The demographics, number of urgency episodes per day, leakage, PVR and King's Health Questionnaire Social Limitations (KHQ-SL) score were analyzed using contemporary statistics.

Results: The overall incidence of CIC in our series was 5.7% with a median duration of 44±24 days ($p<0.0001$). In the group who did not use CIC, the PVR increased with a mean value of 55±25 mL ($p<0.0005$). The KHQ-SL score at 6 months showed consistent improvement across the series, with median values lowered by 20.7±2.2 ($p<0.00001$). No significant AEs were reported in this series.

Conclusion: Although acute urinary retention or high volume PVR are possible complications of this technique and the patient should be informed and consented before treatment, our study demonstrates that their incidence is low. The series was too small to allow age or gender corrections, but since the overall result is very good, we state that age, gender or the condition behind detrusor overactivity are not important predictor factors for the need of CIC.

UP-676

Evaluation of Urodynamic Study Parameters Associated with Continence After Robot-Assisted Radical Prostatectomy in Aged Patients

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Introduction and Objective: While robot-assisted radical prostatectomy (RARP) is also a safe operation for aged patients with localized prostate cancer, urinary functional outcomes after RARP critically influence their quality of life. Regarding data about predictors of early or intermediate-term continence following RARP, some factors, including age, obesity, membranous urethral length, surgical procedures and prostate volume, were reported. However, estimations of urodynamic study (UDS) parameters in prediction of continence after RARP were limited. In this study, we investigated the characteristics of UDS data in recovery of urinary incontinence of elder patients underwent RARP.

Materials and Methods: Between April 2014 and December 2017, seventy patients with prostate cancer received UDS before and at 3 months after RARP at our institution. We divided them into two groups; young group (less than 70 years old, n=43) and senior group (70 years old and over, n=27), and then classified each group as urinary continence (UC) or incontinence (UI) in the assessment of urinary function at 3 months post-RARP. Continence was defined by 0-pad or 1-safety pad usage at 3month follow-up. Patient and operative characteristics included body mass index (BMI), initial prostate-specific antigen (iPSA), staging, prostate volume, operation time, blood loss volume and performance of nerve sparing.

Results: There is no significant difference in continence rate at 3months after RARP between the young and senior group (67.4% vs 66.7%, p= 0.596). In the senior group, the maximum urethral closure pressure (MUCP) of UI was significantly lower than that of UC (71.1± 40 vs 112.8± 50.7, p= 0.038). The presence rate of detrusor overactivity (DO) at 3 months post-RARP in UI of senior group was significantly higher than that in UC of them (75% vs 35.3%, p= 0.01). Other variables (BMI, iPSA, staging, prostate volume, operation time, blood loss volume and nerve sparing) did not differentiate significantly between UC and UI in senior group. Moreover, multivariate regression analysis in total patients revealed that the post-operative DO was an independent predictor of continence 3 month following RARP (odds ratio [OR] 0.19, confidence interval [CI] 95%: 0.06, 0.6).

Conclusion: In elder patients, low MUCP before RARP may be a potential risk of the delayed recovery of UI. The presence of DO after RARP may greatly contribute to the persistent UI regardless age.

UP-677

The Virtue European Trial for Urinary Incontinence after Prostatectomy: 3-Year Outcomes

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Introduction and Objective: The aim of this prospective, single-cohort study was to confirm 36-month effectiveness of the Virtue quadratic male sling in postprostatectomy incontinence and gather post-marketing safety data from 14 urological departments.

Materials and Methods: Between August 2012 and February 2015, a total of 117 patients without predominant overactive bladder, previous incontinence surgery, urethral stricture, or radiation history were implanted. Primary objective endpoint was defined as >50% decrease in 24 h Pad Weight Test. Patient-reported improvement using the PGI-I and satisfaction index defined the subjective success. The ICIQ-SF was completed. Qmax, PVR and complications were reported. Subgroups were analyzed by baseline severity incontinence on 24hPWT, pads usage and BMI.

Results: At baseline mean and median urinary loss were 227 g ± 292 (5-1471 g) and 113 g (54-296 g) respectively. At 36 months, objective and subjective successes were achieved in 72% and 69% (29% very much; 40% much; 21% a little better) respectively. Satisfaction was achieved in 69% of patients. Mean and median urinary leakage in 24h PWT were 72 g ± 158

UP.677, Table 1. Statistical comparisons of 36-Month responders' rate.

VAR	Comparison	p-value 2-sided Fisher exact test
BMI	[16.5, 25[vs [25, 30[kg/m²	1.000
	[16.5, 25[vs >=30 kg/m²	1.000
	[25, 30[vs >=30 kg/m²	1.000
Severity - Pad weight	Mild < 100 g vs Moderate [100-400 g]	1.000
	Mild < 100 g vs Severe > 400 g	1.000
	Moderate [100-400 g] vs Severe > 400 g	0.638
Severity number of pads	1 or 2 vs 3 or 4	0.505
	1 or 2 vs 5 or more	0.637
	3 or 4 vs 5 or more	0.298

and 7 g respectively. No difference per baseline incontinence severity, BMI and pads usage were found at 36 months. Median ICIQ-UI SF score decreased from 16 (mean 15; range 6-21) to 9 (mean 9; range 0-21). No significant degradations of assessed parameters were registered from 3 to 36 months follow up. No significant change on Qmax and PVR were reported. The main postoperative complications were discomfort or pain: perineal of whom 9 patients (7.7%) required a specific antalgic treatment and 1 (0,8%) a sling revision, genital paresthesia (11; 9.4%), hematoma (4; 3.4%), transient urinary retention (9; 7.7%) and urge symptoms (12; 10.2%).

Conclusion: The Virtue quadratic male sling is a safe and efficacious treatment for postprostatectomy incontinence. Further long-term investigations should confirm these findings, especially in moderate to severe and over weighted incontinent patients.

UP-678

Reasons and Limitations of Choosing Urethral Sling Technique for Anti-Incontinent Surgery

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Introduction and Objective: Urethral slings are currently popular procedure for management of female stress urinary incontinence. While pubovaginal sling (PVS) still be the gold standard one, synthetic mesh sling procedures has been developed with high efficacy and showed shorter operative time. In order to choose suitable surgical technique for individual patient, decision making have to balance on multiple factors. Patient's comorbidity, incontinence severity, socioeconomic status as well as national reimbursement system that synthetic mesh can't reimbursed would be impact on patient's desire and expectation. Procedure familiar or limitation to offer alternative procedures of surgeons could also be the bias as well with the world situation of awareness of vaginal mesh used and synthetic mesh sling procedures were suspended in England on July 2018. This study aims to identify reasons and limitations of choosing urethral sling technique of the patient and evaluate treatment outcomes in term of effectiveness and complications.

Materials and Methods: A retrospective, descriptive study was conducted at Vajira Hospital, Thailand from October 2013 -October 2018. Seventy patients underwent urethral sling procedures. One patient died and four patients couldn't be contacted. Consequently, 65 patients participate in this study.

Results: Thirty patients choose synthetic mesh sling procedures due to afraid of PVS's complications include pain, retention, increase operative time that's related to impact on patient's comorbidity. Thirty-five patients choose PVS due to financial problem or surgeon recommendation on incontinence severity. Effectiveness of each technique is not different. But PVS seem to have more complication in some aspects (i.e.urinary retention, suprapubic wound complications). No urethral mesh erosion or infection were observed in this study.

Conclusion: Principle concern that's affected on patient's decision making is post-operative complications and financial problem as well with national reimbursement system. Second concern is surgeon recommendation. In order to satisfy the patient and improve treatment outcome, we have to break those limitations with the surgeon providing suitable treatment options for individual patient. Moreover, this study's results can urge institutes and government to realize in patient's limitations and find the way to solve these problems leading to improve treatment strategies, develop our country and make it standardization.

UP-679

Pelvic Floor Muscle Training Improves the Effect of Mirabegron on Women Suffering from OAB

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Introduction and Objective: Overactive bladder (OAB), a symptom syndrome presenting with frequency, urgency, and urge incontinence, substantially affects the lives of millions of people. The symptoms associated with OAB can significantly affect the social, psychological, occupational, domestic, physical, and sexual aspects of those who suffer from it. The main therapeutic modalities are conservative therapies, such as pharmacological treatment and behavioral therapy. Mirabegron, a b3-adrenergic agonist, is established as an alternative monotherapy to antimuscarinics for the treatment of OAB symptoms. Pelvic floor muscle training (PFMT) is a behavioral intervention aiming at reducing detrusor activity. The study aimed to evaluate if PFMT improves the therapeutic effect of mirabegron in women suffering from OAB.

Materials and Methods: One hundred and twenty women suffering from OAB were randomly divided into four groups and followed a three-month program. In Group A 30 women received instructions about lifestyle changes and educational programs. In Group B 30 women received treatment for OAB, mirabegron 50 mg/day. In Group C 30 women used a PFMT program to ameliorate symptoms of OAB supervised by a therapist. In Group D 30 women received mirabegron 50 mg/day and followed a supervised program of PFMT. All women were evaluated at the beginning and the end of the three-month program with a three-day bladder diary.

Results: At the end of the three-month program there were the following results. At the final evaluation of women, between Group B, and Group D, there were statistically significant differences ($p < 0.05$) in frequency, incontinence episodes and pads/day domains.

Conclusion: PFMT improves the effect of mirabegron on women suffering from OAB especially in domains of frequency, incontinent episodes, and daily pads used.

UP.679, Table 1.

	Group A control	Group B mirabegron	Group C PFMT	Group D Mira+PFMT
Frequency	9.4±1.8	7.3±1.6	8.8±1.6	6.7±1.4
Nocturia	1.8±1.1	1.4±0.8	1.6±1.0	1.2±0.9
Incontinence episodes	2.7±1.2	1.8±0.9	2.1±1.0	1.5±0.9
Pads/day	4.4±1.7	3.2±1.4	3.7±1.5	2.8±1.3

UP-680

Posterior Tibial Never Stimulation (PTNS) in the Treatment of Voiding Dysfunction: Single Center Experience

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Introduction and Objective: The objective is to assess the efficacy of PTNS in treatment of patients with voiding dysfunction (OAB, Non-Obstructive urinary retention (NOIUR) and / or chronic Pelvic pain syndrome (CPPS)) who are unresponsive to medical therapy.

Materials and Methods: Single center retrospective study, reviewed charts of adult patients with voiding dysfunction who underwent PTNS in our center between January 2012 until December 2018. Patients' demographic data, diagnosis, voiding diary pre and post PTNS treatment, and outcome collected. All patients had baseline investigations (U/A, Creatinine, UDS, US). Each Patient had to fill a VD and QOL questionnaire at the beginning of therapy (Week 0) and after completion of the initial weekly therapy (week 12). The success was defined as 50% or more improvement of symptoms. PTNS was continued for 24 sessions in patients who showed 50% improvement or more of symptoms after 12 sessions. Patients who were considered as success completed another twice/month session for three months then once/month sessions for another 6 months (total of 12 Months therapy).

Results: 108 charts were reviewed. 70 patients (41 female, 29 male) were included the study.38 patients were excluded due to missing data. Age ranged between 18-77 years (mean 42). OAB in 51 (73%), NOIUR in 14 (20%), and CPPS in five patients (7%). 61.2 % of overall patients had 50% or more improvement of symptoms. Success rate was 62.2 %, 76.9% and 40% in patients with OAB, NOIUR, and with CPPS, respectively. Although PTNS is a well-known alternative second line treatment therapy for patients with OAB symptoms, our results showed that this therapy is even more effective in patients with NOIUR. In addition, it showed less efficacy in patients with CPPS. In addition, all patients have completed the first 12

session with no complications or significant side effects. Missing data was a major concern due to lack of some information in the file because this is a retrospective study.

Conclusion: PTNS is a safe and effective treatment modality in treating patients with voiding dysfunction who failed conservative treatment. PTNS showed a higher success rate in patients with NOIUR compared with other disorders.

UP-681

Reduction of Radiation Dose Received by Surgeons and Patients During Percutaneous Nephrolithotomy Surgery: A New Shielding Method

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Introduction and Objective: Due to high prevalence of urolithiasis, endourologic interventions have also been increased for the treatment of patients with urinary stones. During fluoroscopy-gued Percutaneous Nephrolithotomy (PCNL), the surgeon and the patient are exposed to X-ray and its harmful effects. The aim of this study was to assess reduction of the radiation dose received by surgeon and patient after using the new shielding method.

Materials and Methods: In this study, the dose of radiation exposure by surgeon and patient during PCNL under fluoroscopic procedure with conventional shielding methods was compared to a new shielding method designed by the researcher. For this purpose, shields and lead cone with a thickness of 0.5 mm were used and to evaluate the dose of radiation received by surgeons and patients in different parts of the body, Thermoluminescent dosimeters (TLD) were used.

Results: By using new shielding method, it was found a 37 ± 2% reduction in dose exposure as compared to the conventional shielding method. The maximum reduction in radiation dose was specified to the surgeon's hands, while the lowest reduction in radiation dose was related to surgeon's thyroid gland. The maximum and minimum reductions in radiation exposure for patients were specified to patients' feet and chest respectively.

Conclusion: There is a significant difference between the total dose receiving by the surgeons and the patients following the use of the new shielding method and the standard shielding method. The new shielding method can reduce 37 ± 2% of the x-ray received by the patient and the surgeon during fluoroscopy-guided PCNL.

UP-682

Study of Cytotoxic Properties of Saffron Extract in Human Prostate Carcinoma Cell Line

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Introduction and Objective: To study the effect of Saffron stigma aqueous extract on prostate cell line and non-neoplastic fibroblast cells of mouse as a normal cell line.

Materials and Methods: Saffron extract in concentrations of 100, 200, 400, 600, 800 and 1600 µg/mL were prepared. Human prostate carcinoma cells and non-neoplastic fibroblast cells of mouse incubated with various concentrations of Saffron extract for 24, 48, 72 and 96 hours. The cells were observed under the light inverted microscope for morphological alterations.

Results: In fibroblast cell line after 24 hours, Saffron extract did not affect significantly the normal cells and they were intact in morphologic view. After 96 hours in the group with the highest concentration (1600 µg/mL) cell death and cellular form changes and severe granulation was observed. In prostate cell line after 24 hours, the only changes were observed in the group with the concentration of 1600 µg/mL. The cells were granulated and the form of the cells was spherule. After 72 hours, in group with the concentration of 1600 µg/mL, severe granulation was observed and the cell count was decreased and some cells were dead.

Conclusion: Saffron aqueous extract has an *in vitro* inhibitory effect on the proliferation of human prostate cell and mouse L929 cells which is dose-dependent.

UP-683

Comparison of Vitamin D Deficiency in Patients with Bladder Cancer and Healthy Individuals

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Introduction and Objective: Bladder cancer is one of the most common cancers in the world. In some studies, the vitamin D deficiency in these patients has been reported. Vitamin D deficiency may increase the risk of bladder cancer by interrupting bladder cell reactions against abnormal cells.

Materials and Methods: In this case-control survey, in 2017-2018 ,226 patients with gross hematuria sign suspected to bladder cancer were referred to Urology Clinic of Shahid Beheshti Hospital of Hamadan.76 patients with bladder cancer (case) and 150 non-bladder cancer (Control) were selected. Serum vitamin D levels were measured and compared in both groups. Data were analyzed by SPSS software version 16 and 95% confidence level.

Results: In case and control groups mean serum vitamin D levels were 23.78 and 27.20 ng / ml respectively ($P = 0.69$), 50% of cases and 34% controls had moderate and severe vitamin D deficiency ($P = 0.020$). In normal to mild vitamin D deficiency cases the average size of the tumor was 22.66 and in the cases of moderate to severe vitamin D deficiency was 4.0 Cm ($P = 0.007$).

Conclusion: Vitamin D deficiency, in addition to increasing the odds of developing bladder cancer, is also in patients with bladder cancer increasing tumor size.

UP-684

Influence of Chronic Morphine Exposure on Serum Level of Sexual Hormones and Spermatogenesis in Rats

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Introduction and Objective: The increase rate of addiction and its abroad society complications is well known. One of the most important organs which may have dysfunctions in drug abusers is reproductive system. Evaluating this potential risk may lead to increasing family awareness.

Materials and Methods: Thirty 60-day-old male rats were divided into target and control groups. The target group undergoes 5 mg/kg intraperitoneal injection of morphine twice a day while the control group underwent normal saline injection instead (using the same dosage). After 60 days rats became unconscious and after blood sampling, underwent bilateral orchiepididymectomy. Histological and hormonal evaluation were performed on samples.

Results: The level of spermogramatic features and spermatogenesis has a meaningful reduction in target group comparing to the control group. LH level shows meaningful decrease in target group but not FSH and testosterone levels. Evaluating histological sections, mature sperms have meaningful decrease in target group.

Conclusion: Chronic usage of opioids may lead to inducing spermogramatic features as well as sexual hormones. Therefore opioids have potency to cause infertility. These changes may result from the effect of drugs on hypophysis or hypothalamus, the direct effect of drugs on seminiferous tubules or compound of both mentioned etiologies. This study suggested that public awareness against addiction may decrease the infertility rate in the society.

UP-685

Terazosin or Baclofen in Young Men with Chronic Orchialgia: A Single-Institution Cohort Study of 499 Patients

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Introduction and Objective: To investigate the comparative efficacy of terazosin or baclofen in young men with chronic orchialgia using National Institutes of Health-Chronic Prostatitis Symptom Index (NIH-CPSI) measurement.

Materials and Methods: Of 499 young men with chronic orchialgia, 255 received a daily 2 mg terazosin at bedtime and 244 received 10 mg baclofen during a period of 3 mounts. A daily 10-min hot-tub hip-bath rest was administered for all patients. Moreover, all patients with grade 3 and 18 patients with grade 2 varicocele underwent inguinal microscopic varicocelectomy. The NIH-CPSI score was assessed at baseline and 3 mounts later.

Results: Both terazosin and baclofen groups experienced a significant reduction in mean NIH-CP-

SI score (24.78 and 24.81 at baseline to 19.68 and 19.60 after the treatment for terazosin and baclofen groups, respectively). However, there was no significant difference between the groups in regard to post-treatment NIH-CPSI score after adjustment for the pre-treatment score (P= 0.987). A total of 85 patients (33.4%) in terazosin group and 74 (30.3%) in baclofen group underwent varicocelectomy. Also, addition of the varicocelectomy to the treatment as a multimodal approach had no further improvement in the NIH-CPSI score.

Conclusion: Terazosin or baclofen could result in a significant reduction in mean NIH-CPSI score after the treatment in patients with chronic orchialgia. However, there was no significant difference between the groups. Moreover, varicocelectomy should not be considered in these patients as a general treatment. Further randomized studies are warranted.

UP-686

Comparison of Success Rate and Side Effects of Tip Method and Mathieu Method in Treatment of Distal Hypospadias in Patients Referring to the Ghaem Hospital Between 2007 and 2017

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Introduction and Objective: The purpose of this retrospective study was to investigate the success of two surgical methods for distal hypospadias in patients referred to Ghaem hospital in Mashhad.

Materials and Methods: In this study 214 patients with distal hypospadias which underwent a surgical repair by TIP or Mathieu methods were studied. Distal hypospadias were described as glandular coronal or sub coronal hypospadias.In group 1140 patient were underwent surgical repair by TIP method and in group (2) 74 patient were underwent Mathieu surgical repair. History of previous surgery and cordee and primary meatal location and presence of other abnormality and age and the effect of these items on surgery outcome and complication rate were collected and analysed by independent T test and pearson s chi square.(with p value of $p<0.05$)

Results: Among these risk factor just history of previous surgery has reduced the surgical outcome and caused more complication rate. Two surgical methods had no significant difference in outcome in our analysis. But in TIP method patient had more satisfactory appearance.

Conclusion: Both methods can safely be effective in treatment of distal hypospadias.

UP-687

Evaluation of the Effect of Meatal Stenosis on the Urinary Tract by Using Ultrasonography

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Introduction and Objective: Circumcision is one of the oldest surgical procedures that originated for religious purposes. Circumcision in infancy is a common procedure in our country and secondary meatal stenosis due to circumcision is a common complication. The aim of our study is to determine the effect of meatal stenosis on the lower and upper urinary tract of circumcised boys by using ultrasonography.

Materials and Methods: In this cross-sectional study, we enrolled 87 circumcised boys between 4 to 8 years old with severe meatal stenosis. Clinical findings of our subjects were gathered by a checklist that included: thin stream of urine, upward urine stream deviation, infrequent voiding, urinary tract infections, voiding dysfunction, and urge incontinency. In lab data analysis, complete blood cell count (CBC), urine analysis, urine culture, blood urea nitrogen (BUN), and plasma creatinine level were evaluated. Ultrasonography detected hydronephrosis, hydroureter, bladder wall thickening in a full and empty bladder, bladder volume, and residual urine volume.

Results: Narrowing of urine stream is commonly seen (about 54%) among patients with severe meatal stenosis, and similarly in sonographic evaluations the most common symptoms among patients was thickening of the bladder wall that increased in an empty and a full bladder (about 82%).

Conclusion: The author of this study recommends performing long-term follow up after circumcision and ultrasonography to detect meatal stenosis before permanent renal damage occurs.

UP-688

Assessment of Adverse Effect of Methylphenidate on the Function and Histopathology of the Male Rat Kidney

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Introduction and Objective: The objective is to assess the adverse effect of the two common dosages of methylphenidate on the function and histopathology of the male rat kidney

Materials and Methods: Twenty seven adult male rats were randomize into one control group (normal saline) and two intervention groups (2 and 10 mg/kg methylphenidate for 40 days). The rats were anesthetized after the treatment period and blood sampling was conducted from their heart. The biochemistry markers including urea, creatinine, Na, and K were analyzed and the kidney of the rats underwent pathologic assessment after surgical removal.

Results: The mean weights of the rats did not differ significantly between the groups (p value=0.15) but the weight of kidneys the rats showed notable difference between the study groups (p value=0.03). Na (p value= 0.31), K (p value= 0.07), and also urea (p value=0.32) and creatinine (p value= 0.70) showed no considerable difference between the three groups. The pathologic assessments showed 8 cases of congestion, 8 cases of hydropic degeneration, 8 cases of hyaline cast, 3 interstitial nephritis, and 2 lymphocyte infiltration cases in the two intervention groups. However, there was no necrosis or glomerular changes. Furthermore, the above mentioned pathologies showed no difference between the groups

Conclusion: The biochemistry measurements in our study showed no significant renal dysfunction except to some degree for potassium changes; however, the histology showed signs of kidney injury. Further studies are needed to complete the results of this study.

UP-689

The Effect of Chronic Administration of Methylphenidate on Spermatogenesis and Hormonal Parameters in Male Rate

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Introduction and Objective: According to common use of methylphenidate (MPH) for the treatment of Attention Deficit Hyperactivity Disorder (ADHD) and the role of the reproductive system in the production of gametes, studying the effects of this medication on the serum testosterone concentration, morphometry of testes, and fertility rate was the aim of this study.

Materials and Methods: Fifty-four 2-weeks-old male rats were divided into control and tow target groups. The target groups gavaged with 2 and 10 mg/kg methylphenidate daily while the control group gavaged with normal saline (at the same dosage). After 60 days, the rats were anesthetized, and after blood sampling, they underwent bilateral orchiepididymectomy. Then spermatogram histological and hormonal evaluations were performed on the samples.

Results: The results of this study revealed that prescription of methylphenidate cause Reduce in sperms number and motility that seen in all target groups compared with control group. Also, changes were seen histologically in all groups that were gavaged with methylphenidate And Testis weight and rat weight were reduce compare with control group.

Conclusion: Using methylphenidate in long term, may lead to alterations in sexual features and sexual hormones, therefore, methylphenidate have the potential to cause infertility. These changes may result from the effect of the drugs on central nervous system including hypophysis or hypothalamus, the direct effect of the drugs on the testis, or both of them. These findings suggest that methylphenidate must be used just in indicated patients and overuse of this drug can lead to raise of infertility rate in society. So, awareness about its adverse effect may cause decreased infertility rates.

UP-690

The Effect of Antibiotic Levofloxacin on Spermatogenesis and Male Sex Hormones

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Introduction and Objective: The increasing incidence of infertility in society is considered as one of the problems of the health system of the community. The imposition of heavy fertility costs on the part of families and the community health system on the one hand, and the psychological and social harm caused by this issue on the other, is proof of the importance of this great problem. The purpose of this study was to identify the effect of levofloxacin antibiotic on male infertility, if possible, as an instruction to reduce infertility in the community.

Materials and Methods: Sixty male rats are selected and divided into four groups. The first group is a

control group and receives normal saline as a placebo. Three other groups of rats receive 6, 8 and 10 mg/kg of body weight per day, using levofloxacin via gavage. After 60 days, the four groups were anesthetized by the ether, the testicles were surgically removed, samples were epidydime and blood samples were sent to the lab and the tests included spermatogenesis, testicular tissue pathology and sex hormones levels in the blood, will be done.

Results: After reviewing the data, levofloxacin significantly reduced sperm motility in all three groups receiving levofloxacin. Also, in studies of testicular tissue, there were significant pathological changes in all three groups receiving the drug, which increased with increasing dosage of the drug. FSH level increased in 2 groups that receive levofloxacin, but there were no significant changes in the number of sperms, LH and testosterone.

Conclusion: The use of levofloxacin as a commonly used drug in the treatment of infections, especially in cases of prolonged use, can have an adverse effect on the male reproductive system. Therefore, the administration of this drug to men of reproductive age should be based entirely on indications and only if necessary.

UP-691

Salvage Lymph Node Dissection in Castration Resistant Prostate Cancer: Impact on Oncological Outcomes and Downstaging to Castration Sensitive Disease

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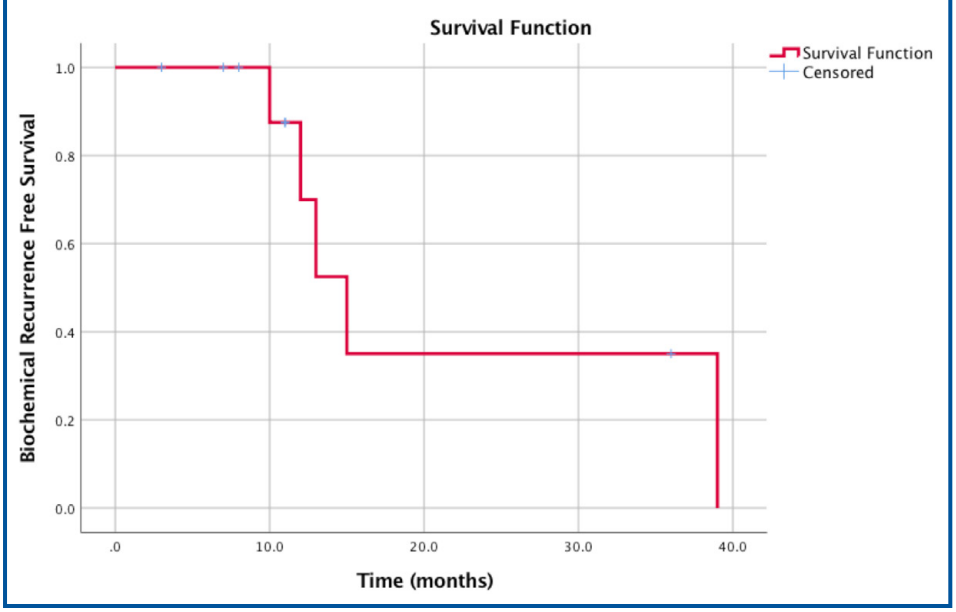
Introduction and objective: Metastasis directed therapy in patients with node-only recurrent disease has the potential to defer the need for systemic treatments and improve cancer specific survival. Several retrospective studies evaluated the efficacy and safety of salvage lymph node dissection (SLND); however, most of them included heterogenous populations of patients in terms of disease aggressiveness, adjuvant treatments and castration resistant status. In the present study we evaluated the safety and efficacy of SLND in a relatively homogenous population of patients with castration resistant nodal recurrence after radical prostatectomy.

Materials and Methods: Among all patients who underwent SLND between 2013 and 2017 at our institution, those with CRPC were considered for enrollment. All patients underwent Ga-PSMA PET CT scan before SLND and surgery was performed when recurrence was limited to the pelvic and/or retroperitoneal lymph nodes. In this retrospective study all data were collected prospectively and Institutional Review Board approved the study.

Results: A total of 11 men with a mean age of 61.8±5.7 (ranging from 55 to 71) were enrolled for analysis. Median serum PSA level at baseline and at the time of PSMA PET CT scanning was 9.2 ng/mL (Interquartile range: 6.4-13.2) and 1.5 ng/mL (Interquartile range: 1.1-3.2) respectively. Following SLND, PSA decreased to undetectable levels in 72.7% of patients and 54.5% of patients remained free from biochemical recurrence during a median follow-up period of 11 months (ranging from 3 to 39 months). Figure 1 shows the Kaplan-Meier Curve for biochemical recurrence free survival. The median time to biochemical recurrence following SLND was 15 months (95%CI: 11.7-18.3). Moreover, No grade 3 or 4 complications were recorded based on Clavien–Dindo classification system.

Conclusion: Our findings showed that salvage lymph node dissection in patients with CRPC is safe and has the potential to significantly defer the need for systemic treatments.

UP.691, Figure 1.



UP-692

A New Technique in the PCNL: A Novel EN BLOC Stone Removal in Percutaneous Nephrolithotomy

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Introduction and Objective: After the development and introduction of Endourology and the invention of PCNL, various methods for removal of kidney stones were described. The main differences in these methods were in the patient's positioning and using ultrasound or fluoroscopy as a guide for stone removal. In all of the guidelines, PCNL has been proposed as a Gold standard to remove large (above 2 cm) and staghorn kidney stones. The strength of PCNL versus other methods has been higher Stone Free Rate in most studies. However, in all studies, high rates of complications of PCNL have been reported (up to 87%). On the other hand, by increasing the length of the surgical procedure, the risk of complications related to anesthesia and surgery, especially in patients with advanced age and underlying cardiovascular and pulmonary problems increases. To overcome these issues, we described the new method of stone removal is PCNL (Enbloc through the skin).

Materials and Methods: After insertion of the ureteral stent, by a cystoscope or ureteroscope in the lithotomy position and under general anesthesia, the patient position was changed to Prone. Under the guide of the fluoroscopy, and retrograde injection of meglumine through ureteral stent, by a 21-18 g needle and guide wire, access was obtained. Then, the tract is dilated to 30 fr with Amplatz and Amplatz sheet. After visualizing the stone by nephroscopy, Amplatz sheath is removed. Skin incision increased to the minimum diameter of the stone. Then by a stone grasper, stone was taken out of the tract. The skin incision site was compressed in case of active bleeding and then suturing with nylon yarn with far & near method was done.

Results: Between 2016 - 2019, by consent of the patients in our center about 200 Enbloc PCNL was performed by a single surgeon. About 50 cases were followed–up, and at month 6, IVP was performed to investigate the damage to the pyelocaliceal system. We had no side effects such as damage to the colon, pleura, urinary tract system, and no mortality.

Conclusion: The use of this new technique can reduce duration of operation and decrease some of the complications of the surgery, such as, anesthetic complications, hospitalization time and medical costs.

UP-693

Inflammation and Prostate Cancer

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Introduction and Objective: Prostate cancer is the most incident malignancy in men, and considered to be among the top five mortal cancers globally. Genetic factors together with environmental exposures could play major roles regarding prostate cancer pathogenesis. Inflammation contributes to nearly 20% of all tumors in human adults. Infections, chronic inflamma-

tory diseases, and environmental exposures may act as triggers to prostate inflammation whether solely or mutually. In addition, emerging evidence underlines the significance of genomic alterations in the occurrence of prostate cancer (e.g. polymorphisms). In this review, we aim to perform a comprehensive revision on the role of inflammation in the development of prostate cancer searching the existing literature. Our objective is to focus on etiologic factors proceeding prostatitis and obtaining a mechanistic approach to immunology, genetics, and molecular interactions regarding inflammation of the prostate and its assumed association with prostate cancer.

Materials and Methods: We review the current evidence on the association between inflammation and prostate cancer focusing on the role of presumed risk factors and immunological interactions within the tumor microenvironment recruiting PubMed library.

Results: Dietary components, hormonal imbalance, infectious agents, corpora amylacea and urine reflux could induce inflammation of the prostate gland. Available evidence confirms the causative role for chronic inflammation in the formation of prostatic inflammatory atrophy which could eventually develop into precancerous lesions known as prostatic intraepithelial neoplasia. Recent studies advocate the contribution of the innate and adaptive immune system in prostate cancer tumorigenesis mediated by infiltration of immune cells and release of proinflammatory cytokines. However, the effect of immunologic response ranges from tumor progression to suppression depending on the stage of cancer. Intriguingly, Interleukin gene polymorphism has been shown to have an impact on the incidence rate of prostate cancer, emphasizing the significance of both genetic background and inflammatory state in the pathogenesis of the disease.

Conclusion: In line with former findings, recent studies confirm the association between chronic prostatitis and prostate cancer. However, the need for further investigations to illuminate the exact mechanisms seems to be substantial.

UP-694

Re-do Female Genitoplasty for Previously Failed Genitoplasty in Male to Female Gender Reassignment Surgeries

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Introduction and Objective: In this study, we described redoing reconstructive surgery techniques for previously failed genitoplasty in male to female gender reassignment surgeries.

Materials and Methods: Twenty-one patients who had undergone male to female genitoplasty in other centers underwent re-do genitoplasty. All patients were referred to our center with the complaint of deformity or dysfunction of the external genitalia due to clitromegaly, inappropriate site of the clitoris, vaginal stenosis, inadequate depth of vagina, etc. All surgeries were performed by a single surgical team. For each patient the appropriate reconstructive surgery was planned based on the patient's complaint and complications. Follow-up visits were scheduled for 1 week, 1, 3 and 12 months, postoperatively.

Results: Eleven patients had a history of vaginoplasty using the small intestine, whereas in 10 patients it was done with penile and perineal skin. Three cases needed clitoroplasty. Increased vaginal depth was indicated in four patients due to vaginal shrinkage which was repaired using amniotic membrane and a vaginal stent. Urethroplasty was performed in 5 patients. Skin Removal was required in 4 cases. In 5 patients in whom their previous vaginoplasty had been performed as a superficial pouch at the perineal area, vaginoplasty was done with our classic method. None of the patients reported any major complications during this period and were generally satisfied with their sexual intercourse.

Conclusion: Using the various methods of redoing reconstruction of the external genitalia when the surgeon has enough experience might lead to desirable functional and aesthetic results.

UP-695

Evaluation of the Results of the Total Penile Disassembly Technique in Patients with Peyronie's Disease

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Introduction and Objective: Peyronie's disease is a connective tissue disease that is characterized by fibrotic lesions in tunica albuginea and ultimately leads to deformity of the penis causing physiological and psychological problems for the patient. The main method of treatment is surgery for cases that fail to respond to medical therapy. The aim of this study was to determine the success rate of total penile disassembly technique in treatment of patients referred to Imam Reza Hospital during a ten-year period.

Methods and Materials: This cross-sectional (retrospective) study was performed on the patients referring to the reconstructive center of the urology department of Imam Reza Hospital in the period from 2007 to 2017, who had undergone a surgical treatment for Peyronie's disease using total penile disassembly technique. Patients' demographics and clinical data including age, duration of the disease, penile curvature and plaque location were extracted from the patient records. The result of the patients' evaluationduring surgery including the angle of curvature and also the anatomy of the penis using artificial erection were extracted and recorded in the patient checklist. All patients have been visited at regular intervals after surgery and the postoperative success rate as well as the complications were assessed and documented based on various factors. Finally, the data were analyzed by SPSS software version 16.

Results: A total of 100 patients with a mean age of 36.35 ± 9.02 years were studied. Plication and grafting technique was used in 66 (66%) and 34 (34%) patients, respectively. The two groups were not statistically different in terms of demographic and clinical features including age, duration of disease, history of diabetes, history of penis trauma, history of penile surgery and Plaque dispersion (p value> 0.05). The median follow-up period was 12 months. The penile length remained unchanged in 86 patients (86%) but reduced in 14 patients (14%) (11 cases less than one cm (11%) and 3 (3%) more than one centimeter) which this reduction more significantin the plication compared to the graft group (p = 0.004). The anatomical success rate of treatment (access to the penis with curvature less than 15 degrees) was observed in 100% of patients, which was the same in the two groups (p = 0.91). Postoperative erectile dysfunction was observed in 17% of patients (de novo erectile dysfunction in 6 patients (6%)) whichwas higher in the plication group (p = 0.03). Overall satisfaction rate was 86% which was not significantly different in the two groups (p = 0.09).

Conclusion: Total penile disassembly technique is an appropriate method oftreatment in patients with Peyronie's disease, which can be performed with acceptable success rate and low complications.

UP-696

Effect of Topical Tetracycline Ointment on Wound Healing After Scrotal Surgery Without Wound Dressing

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Introduction and Objective: One of the most urologic surgery in urology is scrotal surgeries absorbable sutures are mostly used for scrotal skin repair and infection is known as important complication. We used topical tetracycline ointment after scrotal surgery in addition of routine drugs and compared with other group that received only the routine drugs (antibiotic and analgesics for wound infection and scrotal discomfort). In the first group, after 48 hours of scrotal surgery no wound dressing was performed.

Materials and Methods: In the retrospective study, we evaluated 84 patients since April 2014 to August 2017 for wound infection and scrotal discomfort and pain after scrotal surgeries. The patients were divided in two groups; group A (used tetracycline topical ointment) without would dressing (n= 36.43%) after hospital discharge, and group B (used routine drugs) with daily wound dressing(n= 48.57%), after 10-14 days of scrotal surgery all patients were visited and evaluated for wound infection and scrotal pain and discomfort.

Results: In group A (topical tetracycline ointment without wound dressing) n= 36, only 3 patients had scrotal discomfort and infection in some parts of scrotal incision and in group B, 8 patients had little infection and scrotal discomfort but 1 patient had abvious infection that needed serious wound care.

Conclusion: In this study, we saw that daily topical tetracycline ointment without wound dressing may can prevent incision infections better that wound dressing for scrotal surgeries.

UP-697

Management of Post Inguinal Hernioraphy Pain with Non-Steroidal Anti-Inflammation Drugs (NSAIDs)

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Introduction and Objective: Post-operation pain after hernioraphy is a common complication of the surgery that is caused by inflammation, trauma and burning through the surgery. It causes more hospitalization time and patient disability after surgery. In this study, we are going to know the effect of slow-released NSAIDs tablets before surgery on postoperative pain of inguinal hernia surgery.

Methods and Materials: In this study, the specimens were selected among patients with inguinal hernia surgery (direct and indirect hernia) in Urology department of Ghaem Hospital in Mashhad. They were randomly divided into two groups of intervention and control. The experimental group received a dose of 100 mg of slow-released diclofenac or 75 mg indomethacin tablet before the operation and the control group did not receive the drug. During the first 24 hours after the operation, the pain was evaluated and the two groups were compared.Also, the patients' requests for receiving analgesics during the first 24 hours after operation were evaluated that determined the patient's pain with the Pain Questionnaire, then the two groups were compared.

Results: The study included 76 patients, all of them were male and the mean of age was 42/28 ± 13/75. There were 38 patients in the control group, and 38 patients in the intervention group. The mean age of the control group was 41.77± 13.5 and mean age of intervention group was 42.8± 14.62 two groups, had not obvious differences (P value= 0/744) also the side and .The type of hernia in two groups, had no obvious differences, (P value= 0/766) .During this study , the mean of patients' pain score in the control group was 6.43± 1.9 and the mean of patients' pain score in the intervention group was 4/33 ±1/86 (P value <0/001). Patients were also evaluated for postoperative severity of pain. In the control group, 29 patients (96/7%) and in the intervention group, 14 patients (46.7%) asked and received the first dose of post-operative analgesic due to the pain (P value <0/001). Also, 11 patients (36.7%) from control group and one patient (3.3%) from intervention group received the second dose of analgesic after surgery due to severe pain (P value <0/001).

Conclusion: According to this study, we saw that patients who had recieved 100 mg slow released diclofenac or 75mg of indomethcine before surgery had a significant decrese in postoperative pain and also the intervetion group experienced fewer period of pain and received less analgesic in comparison to control group.

UP-698

Outcomes of Ultra Mini PCNL for Renal and Upper Ureter Calculi Less than 20 mm in Children Under 8 Years Old

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Introduction and Objective: The aim of this study was to evaluate the outcomes of ultra mini PCNL for renal and upper ureter calculi less than 20mm in children under 8 years old.

Materials and Methods: A total of 22 children (33 kidnies) aged less than 8 years old with renal and upper ureter calculi less than 20mm who had inclusion criteria, and were operated by UMP method between January 2016 and November 2018 at Tohid and Kowsar hospitals in Sanandaj, Iran were evaluated. Inclusion criteria were; single unilateral kidney stone, stone size between 10-20mm, normal renal function test and no congenital anomaly. The "UMP" system (LUT, Germany) consists of a 1 mm (3F) telescope, 7.5F nephroscope inner sheath with three ports (one each for telescope, saline irrigation inlet, and laser fiber), and 11 or 13F metallic outer cannula which serves as the Amplatz sheath.

Results: The average age of children was 5.22 years. A total of 14 (63.6%) were male and 8 (36.4%) were female. In 15 cases (68.2%) stones were in the right kidney and in 18 cases (82%) the stones located in upper ureter. In terms of stone type in 13 cases (59%) the stones were calcium oxalate. The average size of stones was 15.5 mm. The mean surgical time was 58.6 minutes and the average admission time was 44.7 hours. Post operative fever was reported in 4 cases (18.2%) and 3 cases (13.5%) need a supplementary method (JJ stent, ureteroscopy). Free stone rate was 95.5% (21 cases) and no post operative septicemia, damage to adjacent organs and need for blood transfusions were reported.

Conclusion: The ultra mini PCNL is a minimally invasive, safe and effective method for the treatment of renal and upper ureter calculi less than 20mm in children under 8 years old.

UP-699

Assessment of Acute Male Urethral Catheterisation Problems in a Tertiary Centre and Usefulness of a New Catheterisation Protocol Using Portable Flexible Cystoscopy with Disposable Sterile Sheets

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Introduction and Objective: Difficulties during male urethral catheterisation (MUC) are a common reason for urgent need for on-call urologists. A standardized sequential approach, including endoscopic assessment could help diagnosing the problem and preventing iatrogenic injuries. We aim to analyse MUC referrals in a tertiary centre, and usefulness of a systematic approach including flexible uretro-cystoscopy.

Materials and Methods: A systematic protocol for MUC was designed: starting with 16F Foley catheter, then choosing between 12F or 20F if urethral stricture (US) or BPH is suspected. If catheters are not easily inserted, portable flexible cystoscopy using sterile disposable sheet is performed. A hydrophilic guidewire is passed on under vision and adequate catheter is advanced over it. When US are diagnosed, suprapubic catheter (SPC) is inserted or urethral dilatation using coaxial dilators is performed. After Ethics Committee approval, all urgent referrals to urology department for MUC problems were prospectively managed according to our protocol. We collected demographic data, reasons for MUC, past medical history, need for cystoscopy, identified false passages, and diagnosis of problems. Descriptive statistical analysis was conducted.

Results: Over a 16 month-period, 291 MUC were collected. Mean age: 72.5 (SD 15) years. Reasons for MUC: Acute urinary retention 51.6%, urinary output control 19.2%, catheterisation for surgery 7.6%, others 21.6%. Referrals came from emergency unit 47.4%, inpatients wards 28.7%, surgical area 12.8%, intensive care unit 11.1%. 27.5% had no urological past history, 28.5% BPH drugs, 7.9% TUR-BT, 7.6% prostatic radiotherapy, 7.2% US surgery, 5.8% simple prostatectomy, 5.5% TUR-P, 4.1% radical prostatectomy, 5.9% others. 93.5% were successfully catheterised, 4.1% required SPC, 2.4% were left without catheter. Portable flexible cystoscopy was performed in 41 cases (14.1%), finding 27 false passages (15 urethral laceration,12 complete urethral perforations). In 97.9% of cases, reasons for MUC problems were identified: 59% were uneventful catherisations, 15% had US, 11.3% BPH, 2.3% bladder neck contracture, 1.9% urethro-vesical anastomosis stenosis, 1.5% prostate cancer, 1.5% phimosis, 7.5% others.

Conclusion: A systematic approach for difficult MUC allow us to successful catheterisation in over 90% of cases, identifying the problem in nearly all situations. Flexible cystoscopy is a helpful tool when false passages were suspected.

NURS - 5th SIU Global Nurses Educational Symposium

Saturday, October 19
0800-1530

Moderated ePosters

NURS-01

The Application of ERAS Protocol in the Treatment of Patients Under Robot Assisted Laparoscopic Prostatectomy

Cao J, Ren P, Guo X, **Ding Y**

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Introduction and Objective: To investigate the application of ERAS protocol in the treatment of patients under radical prostatectomy with quality of care and efficacy.

Materials and Methods: A total of 100 cases of patients with radical prostatectomy were randomly divided into the control group and the intervention group. The patients in the control group were given the conventional health care strategy, the patients in the intervention group were given the ERAS protocol. This research observed and recorded the first time of flatus, postoperative complications, and the average length of stay after surgery, treatment costs and patient comfort level and other indicators between two groups of patients and compared, during the postoperative period.

Results: In the intervention group, the time of the first flatus, the average length of stay was significantly shortened, the treatment cost was significantly reduced, the incidence of postoperative discomfort and complications was reduced, and the comfort level of the patients was improved. The differences of the observed indicators between two groups were statistically significant (P <0.05).

Conclusion: The application of ERAS protocol in robotic assisted radical prostatectomy for prostate cancer patients is safe and effective, which can improve the efficiency of medical and nursing work and optimize the utilization of medical resources.

NURS-02

Effect of Warm Bladder Irrigation Fluid for Benign Prostatic Hyperplasia Patients on Perioperative Hypothermia, Blood Loss and Shiver: A Meta-Analysis

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Introduction and Objective: To find out whether warm bladder irrigation fluid can decrease the occurrence of perioperative hypothermia, blood loss and shiver in patients treated with benign prostatic hyperplasia (BPH). Continuous bladder irrigation, used widely intra- and postoperatively for patients treated surgically for BPH, is regarded to be related to hypothermia, blood loss and shiver. It remains controversial whether warm irrigation fluid can reduce the risk of these complications.

Materials and Methods: A comprehensive literature review and meta-analysis that included randomized controlled trials (RCTs) related to temperature of irrigation fluid in the perioperative treatment for BPH. The relevant literature were searched in Chinese database, such as Retrieval Chinese Journal Full-text Database, VIP Journal Database (1989e2018), Wanfang database, as well as in English search engine and database, including Embase, Cochrane and Medline till January 2018. The study quality was assessed by recommended standards from Cochrane Handbook (version 5.1.0).

Results: A total of 28 RCTs and 3858 patients were included. The results showed that the incidence of shiver (Risk Ratio (RR)= 0.32, 95% confidence interval: 0.28-0.36, p <0.0 01, I2=0%) and hypothermia (RR= 0.36, 95% confidence interval (CI): 0.21-0.59, p <0.001, I2= 67%) in the group of warm irrigation fluid were lower than the group having room temperature fluid. Room-temperature irrigation fluid group caused a greater drop in body temperature compared to warm irrigation fluid group (p <0.001, I2= 96%). We performed a narrative descriptive statistics only because of substantial heterogeneity.

Conclusion: Warm bladder irrigation fluid can decrease the drop of body temperature and the incidence of hypothermia and shiver during and after the operation for BPH. Warm irrigation fluid should be considered as a standard practice in BPH surgeries.

NURS-03

Homeflow: Comfort of Uroflowmetry at Home with Children - A Feasibility Study

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Introduction and Objective: Paper based frequency volume charts(FVC) are an established method for evaluation of voiding disorders in children, including enuresis nocturna, but often not reliable because of incomplete registration by the patiënt or parent. A home-uroflowmetry - automatically registering voiding volume and time - connected to an online app to enter intake, urge and leakages can be an alternative. In this study we will assess the user feasibility and experience of the the Homeflow with children.

Materials and Methods: Eight patients (mean 11,1 years, 4-18 years, M:6 F:2) were included to use the Homeflow at home for 2 consecutive days. Every void was collected in the Homeflow and every intake registered in the app. User-experience data (completeness, reliability, feasibility) was collected through daily questionnaires by the parents/child. Data was analyzed by percentage-based descriptive statistics.

Results: All patients (100%) reported their Homeflow FVC (voids, intake, leakages) to be complete. Most subjects considered their diary as representative (50%) or rather representative(37.5%) for a normal day/night. The experience with the app was rated as user-friendly (50%) or rather user-friendly(37.5%). Since the home-uroflowmeter fits on a normal toilet, most patients (87,5%) considered their voiding posture neutral with no refrain(87.5%). All 4 patients with pre-existing experience preferred the Homeflow over paper based FVC. 71.4% preferred the Homeflow over uroflowmetry in the hospital.

Conclusion: The Homeflow was preferred by parents and children over paper based FVC and uroflowmetry in the hospital. Complete registration of voiding was achieved through automated measurements. Based on this user-experience data the Homeflow is considered to be a user-friendly, hygienic, comfortable method to evaluate voiding disorders at home.

Oral ePoster Presentations

NURS-04

Decision-Making Style and Influencing Factors of Patients with Prostatectomy

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Introduction and Objective: To investigate the types of participation in surgery decision-making of informed prostate cancer patients and to explore its influence factors.

Materials and Methods: A questionnaire survey was conducted for 163 patients with prostate cancer who were admitted to 4 comprehensive hospitals in Shanghai from December 2017 to March 2018, using the convenience sampling method. The questionnaire included general information of the patients, decision type scale and so on. Statistical methods included non-parametric Spearman rank correlation analysis and orderly classification logistic regression, were used to analyze the influencing factors of decision types for prostate cancer patients.

Results: The factors influencing decision-making in patients with prostate cancer are age, cultural level, family participation, medical payment and so on in univariate analysis. 44.8% of patients are passive decision type, 15.3% of patients illustrate shared decision-making, 39.9% of patients show the active decision-making. According to logistic regression, the type of patient's participation in decision-making is related to 4 factors, which are the patient's age, education background, medical payment style, and whether it is the first time of hospitalization.

Conclusion: Currently, the participating attitude of Chinese patients with prostate cancer in surgical decision-making is more positive than before, but participation in decision-making status is not ideal, so it is a long and arduous task to promote the surgical decision-making of patients with prostate cancer. Medical staff should assess patients' decision-making needs, strengthened communication with patients and their families, in order to promote the degree of patients' participation in the decision-making of surgery.

NURS-05

Understanding of Prognosis in Non-metastatic Prostate Cancer: A Randomised Comparative Study of Clinician Estimates Measured Against the PREDICT Prostate Prognostic Model

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Introduction and Objective: Decision-making around treatment for non-metastatic prostate cancer (PCa) is notoriously complex. Shared decision-making depends upon both clinician and patient having a good understanding of the benefits and harms of different management options. We created PREDICT Prostate, a newly released individualised prognostic model that provides long-term survival estimates for men diagnosed with non-metastatic PCa. The objective of this study is to assess if PREDICT: prostate affects clinician estimates of prognosis and therefore its potential impact on treatment recommendations.

Materials and Methods: A multivariable model estimating individualised 10- and 15-year survival outcomes was constructed and validated with multi-national data from over 12,000 men diagnosed with non-metastatic PCa. PREDICT Prostate uses routinely collected clinicopathological information such as age, prostate-specific antigen (PSA), histological grade, biopsy core involvement, stage, and primary treatment to determine PCa-specific mortality. PREDICT Prostate also contextualizes treatment benefit against non-PCa specific mortality by factoring in comorbidities and age. The tool is now freely available through an easy-to-understand webpage (www.prostate.predict.nhs.uk). In total, 190 clinicians (63% urologists, 17% oncologists, 20% other) were randomised into two groups and shown 12 clinical vignettes. Each group viewed opposing vignettes with clinical information alone, or alongside PREDICT Prostate estimates. 15-year clinician survival estimates and treatment recommendations, with and without the tool, were measured.

Results: The model demonstrated good discrimination, with a C-index of 0.84 (95% CI: 0.82–0.86) for 15-year PCa-specific mortality, comparing favourably to international risk-stratification criteria. Clinician estimates of PCa-specific mortality exceeded PREDICT estimates in 10/12 vignettes, and their estimates for treatment survival benefit were more than 5 fold higher. Viewing PREDICT Prostate led to significant reductions in likelihood of recommending radical treatment in 7/12(58%) vignettes, particularly in older patients. Overall, 81% of respondents felt PREDICT Prostate would be a useful clinical tool.

Conclusion: We compared clinician estimates of survival against the model's predictions, and assessed its value as a clinical tool. Prognostic power is high despite using only routinely collected clinicopathological information. Our data suggest clinicians overestimate cancer-related mortality and radical treatment benefit. Using an individualised prognostic tool like PREDICT Prostate may help clinicians and patients make more informed, appropriate treatment decisions.

NURS-06

Effect Study of Enhanced Recovery After Surgery in Robot-Assisted Laparoscopic Radical Prostatectomy Patients

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Introduction and Objective: To explore the effect of enhanced recovery after surgery in robot-assisted laparoscopic radical prostatectomy patients.

Materials and Methods: A total of 92 cases of patients with robot-assisted laparoscopic radical prostatectomy were included in the urological department of a first-class hospital in Shanghai from November 1, 2017 to October 30, 2018. All the subjects were divided into experimental group and control group by random number method, the experimental group received ERAS, the control group received traditional perioperative nursing intervention.

Results: The first time of anal exhaust time in experimental group is (19.50-11.24) h, the first time of drinking water in experimental group is (4.045 + 0.32) h, and the hospitalization days in experimental group is (4.29 + 0.93) days, all of these times are shorter than in control group. The satisfaction of the medical care from patients in experimental group is higher than in control group, comparing the two groups have statistical significance (P <0.05).

Conclusion: The process of ERAS in Radical Prostatectomy Patients is safe and effective, which is of great significance to shorten the length of stay in hospital, improve the patient's comfort level and improve the satisfaction of the medical care, and it has clinical implementation velue.

NURS-07

Improving Outpatient Clinical Care Efficiency for Urethral Stricture Patients Using the Home UFlow Meter™

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Introduction and Objectives: Flow rate measurement is an important and objective clinical investigation for assessing patients with urethral strictures. It is used to diagnose a urethral stricture and to monitor outcomes following surgical intervention. Routine clinical practice has been to bring patients to the hospital to assess their flow rates, however patients are not always prepared to void urine "on demand" and therefore flow rate results may not be wholly reliable on low voided volumes. To assess the feasibility of using the Uflow Meter™, a home flow measurement device, to enable patients to self-monitor their urine flow at home and to engage with their clinical team as required avoiding unnecessary visits to hospital.

Materials and Methods: This video describes the Uflow Meter™ device and shows its clinical application.

Results: This simple funnel-shaped plastic cup has 3 chambers. It indicates the speed of urine flow and is used by patients at home. Patients keep a weekly Uflow Meter™ voiding diary. If they have persistent Uflow Meter™ 'bottom chamber' recordings, which suggests that the flow rate is less than 10ml/s, they should contact the clinical team by phone or email to arrange a clinic consultation.

Conclusion: The Uflow Meter™ is a useful device which allows patients to monitor their flow rates at home. It empowers and engages patients in their own clinical management avoiding unnecessary clinic visits. The Uflow Meter™ is a cost-effective and safe clinical follow-up option for urethral stricture patients to monitor disease progression at home.

NURS-08

New Nurse Innovated Procedure RN Position in Urology Practice

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Introduction and Objective: Busy Urology Practice introducing nurse-led innovated "Procedure Nurse" position to ensure efficacy, safety and patient satisfaction.

Materials and Methods: Large Memorial Sloan Kettering Cancer Center with multiple off site locations for voiding dysfunction cancer patients, ages 40 to 94; two surgeons, two RNs, with duties ranging from triaging urgent calls, coordinating / referring patients, performing teachings (self catheterization, pessary fitting and changes, setting patients for uroflow / bladder scanning, obtaining specimens, reporting abnormal lab values, changing suprapubic / Foley catheters) to performing up to six urodynamic evaluations per clinic (1 - 1.5 hours each test). During clinics two RNs are assigned to perform up to 6 UDS alternating with all other duties; three 10 - hour clinics a week with average 40 patients per clinic. The voiding dysfunction, urology certified RN has taken an additional step to become a continence certified RN and provide customized and broader care to patients. The initiative insight developed a new approach: nurse-led practical suggestion created a new procedure nurse, who is dedicated to patients. To meet this goal, new RN visits were scheduled for patients to determine weaknesses. More time was spent, demonstration with positive teaching reinforcement provided for better outcomes. The nurse leader responded favorably to suggested actions for improvements. A procedure nurse position was developed.

Results: The new design displayed proper management of cases with more thorough assessment, evaluation of psycho - social state, personal, cultural needs in a safer environment, providing emotional support as well. The dedicated RN continued function through development, maintenance, protection of certification process to commit for patients and their families. Complex and challenged situations are managed by a new dedicated procedure RN for each patient. Realistic goals are individualized and established for each patient who leave happy, satisfied and hopeful at the end of the day.

Conclusion: There are multiple positive feedbacks from our cancer patients and their families on how their lives have changed taking small steps in managing their complex cancer treatments. Our unit now

have more certified urology nurses who are being mentored and taught to make a difference for patients who loose their hopes and confidence, suffering silently. The new "procedure" nurse with exceptional technical skills became an asset to department to aid in voiding dysfunction program by performing urodynamic evaluations, as well as multiple other procedures.

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