TIPS & TRICKS IN MANAGEMENT OF FOURNIER'S GANGRENE

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2021-08-

FOURNIER GANGRENE

What is Fournier Gangrene?

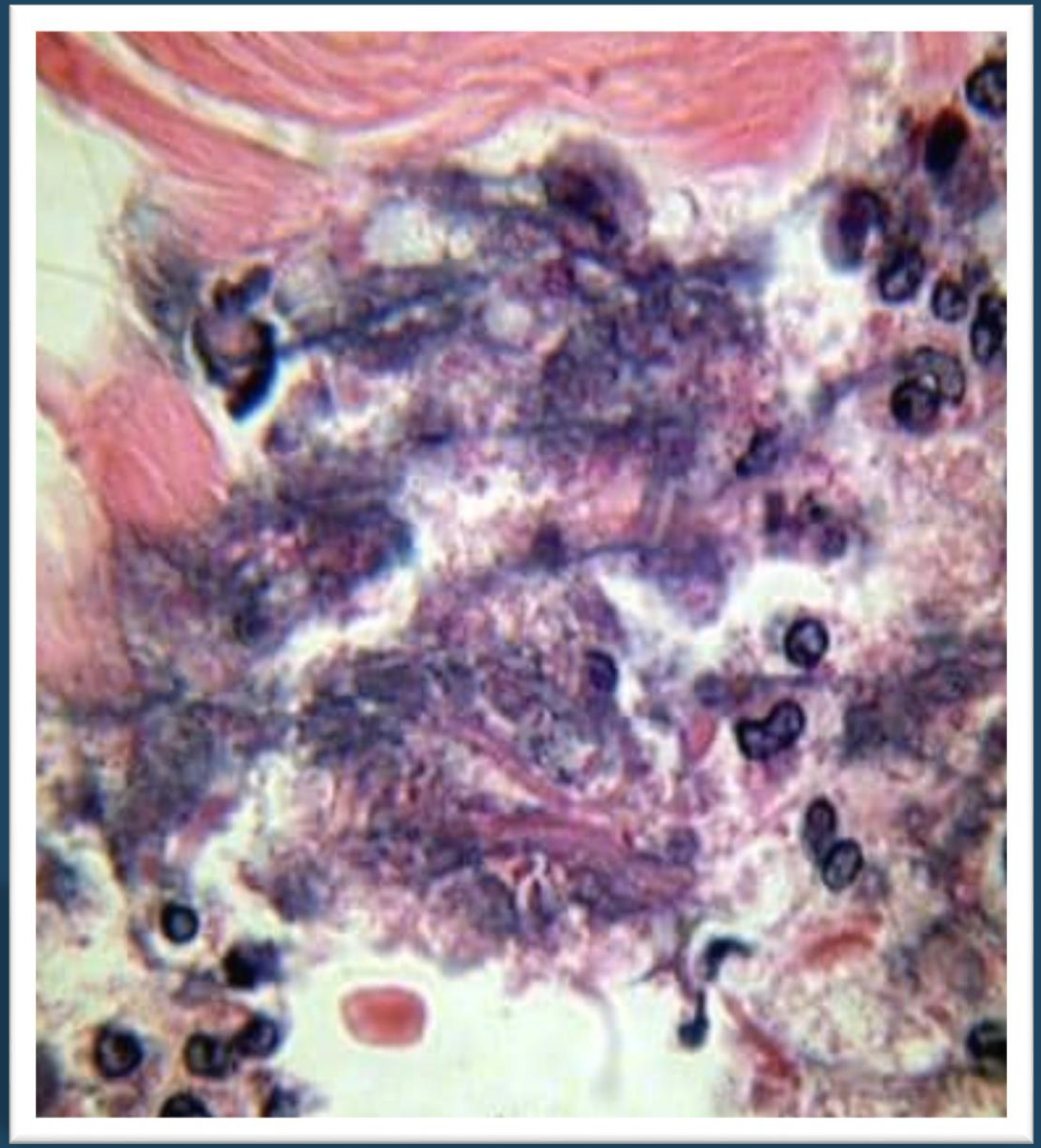
How is diagnosed & managed?

It was first identified in 1883, when the French venereologist Jean Alfred Fournier described it.

This condition, which came to be known as Fournier gangrene, is defined as a polymicrobial necrotizing fasciitis of the perineal, perianal, or genital areas.

Pernetti R, Palmieri F, Sagrini E, Negri M, Morisi C, Carbone A, et al. Fournier's gangrene: Clinical case and review of the literature. Arch Ital Urol Androl. 2016 Oct 5. 88 (3):237-238. [QxMD MEDLINE Link].

Photomicrograph of Fournier gangrene (necrotizing fasciitis), oil immersion at 1000X magnification. Note the acute inflammatory cells in the necrotic tissue. Bacteria are located in the haziness of their cytoplasm. Courtesy of Billie Fife, MD, and Thomas A. Santora, MD.



FOURNIER GANGRENE-CAUSATIVE PATHOGENS

It is a **polymicrobial infection** with an average of 4 isolates per case.

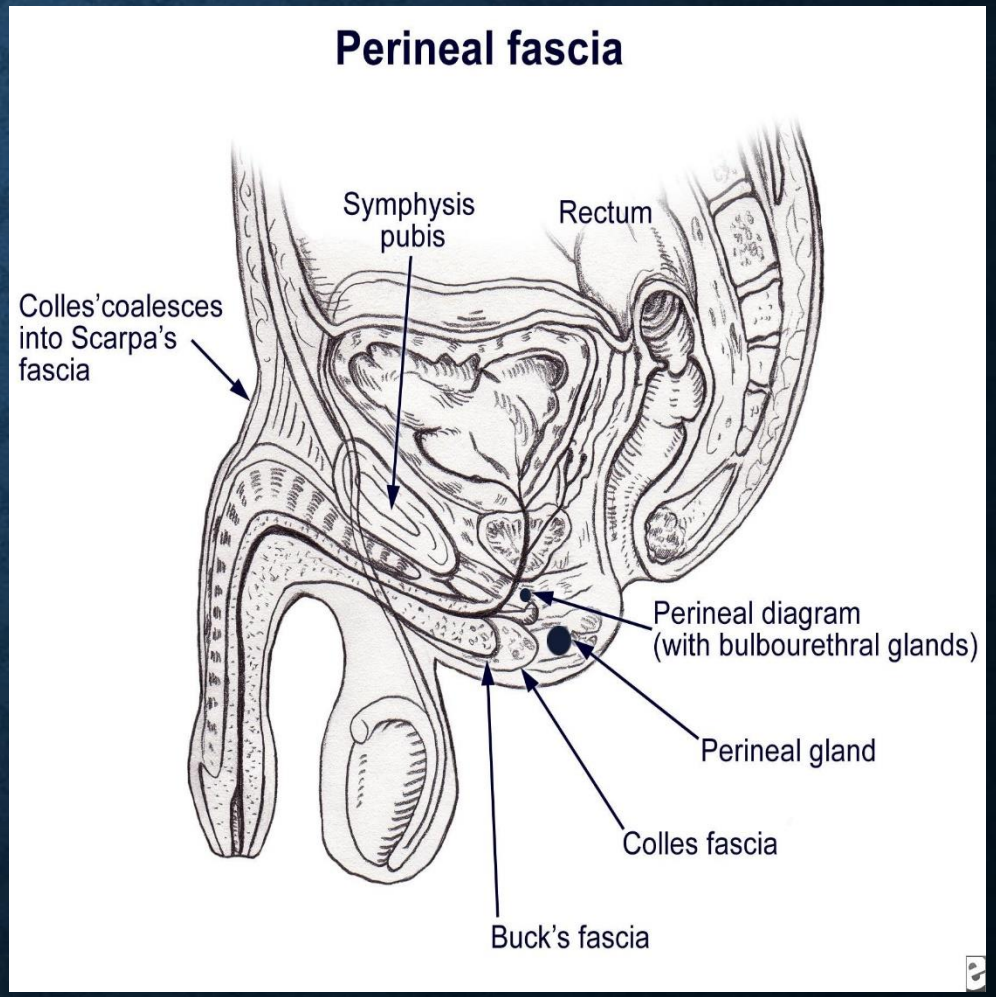
E.coli is the predominant aerobe, and Bacteroides is the predominant anaerobe.

Other common microflora includes the following:

Proteus, Staphylococcus, Enterococcus,Streptococcus (aerobic and anaerobic), Pseudomonas, Klebsiella, and Clostridium

ANATOMICAL CONSIDERATION

Fascial envelopment of the perineum (male). Note how Colles fascia completely envelops the scrotum and penis. Colles fascia is in continuity cephalad to the level of the clavicles. In the inguinal region, this fascial layer is known as Scarpa fascia. Familiarity with this fascial anatomy, along with recognition that necrotizing fasciitis tends to spread along fascial planes, makes it easy to understand how a process that starts in the perineum can spread to the abdominal wall, the flank, and even the chest wall.



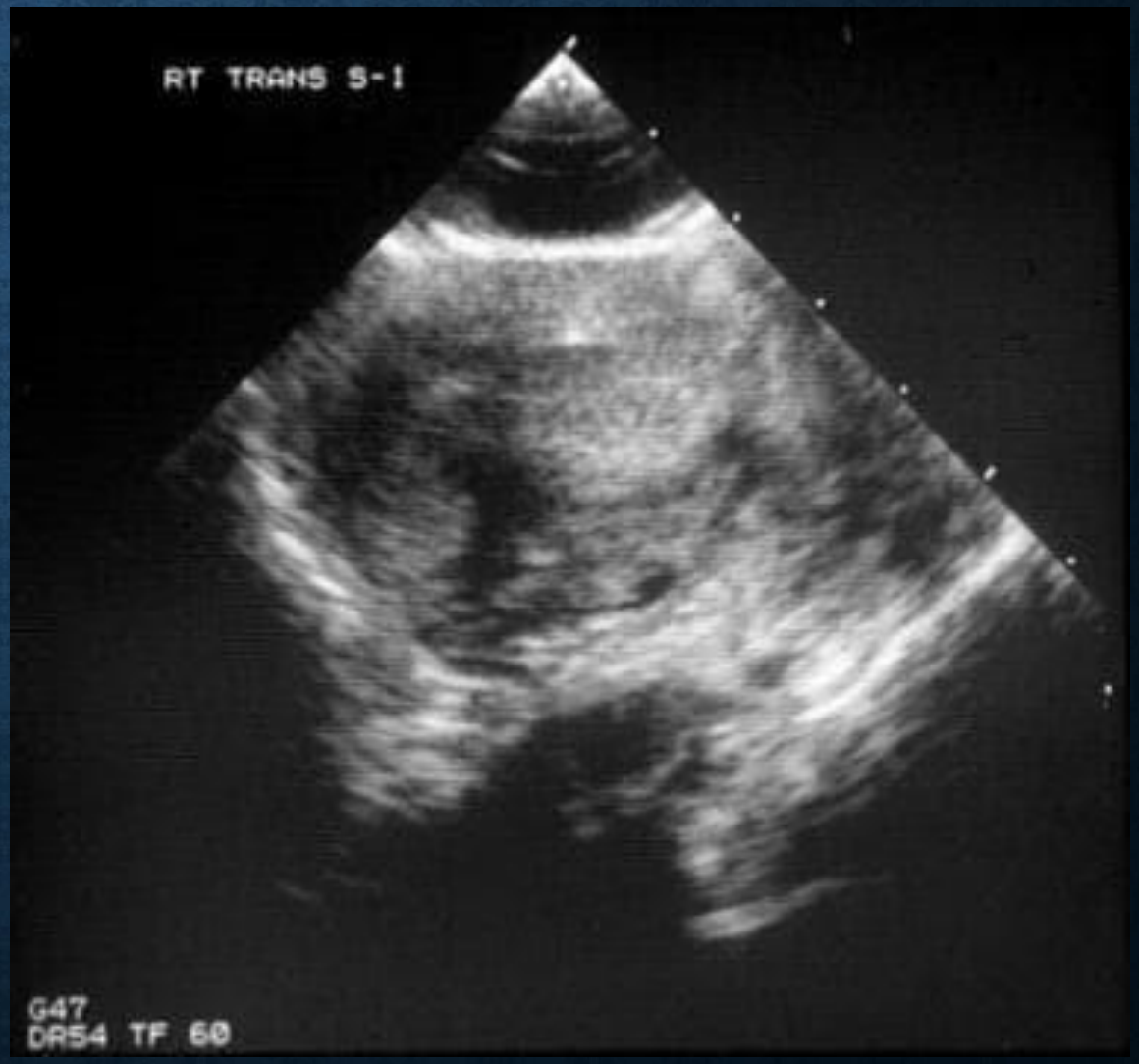
A potential space between the Scarpa fascia and the deep fascia of the anterior wall (external abdominal oblique) allows for the extension of a perineal infection into the anterior abdominal wall

POSSIBLE UNDERLYING AETIOLOGY

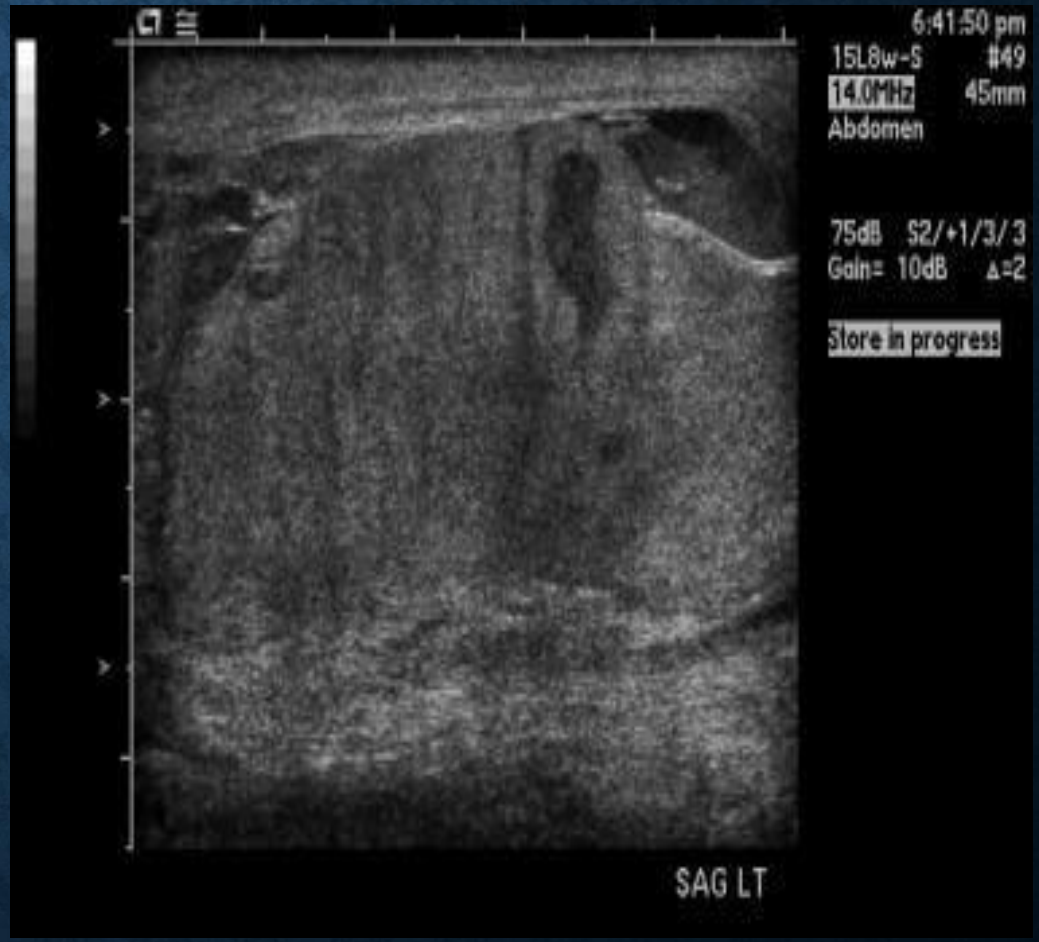
1-Impaired immunity (eg, from diabetes) is known to increase susceptibility to Fournier gangrene.

2-TESTICULAR TRAUMA

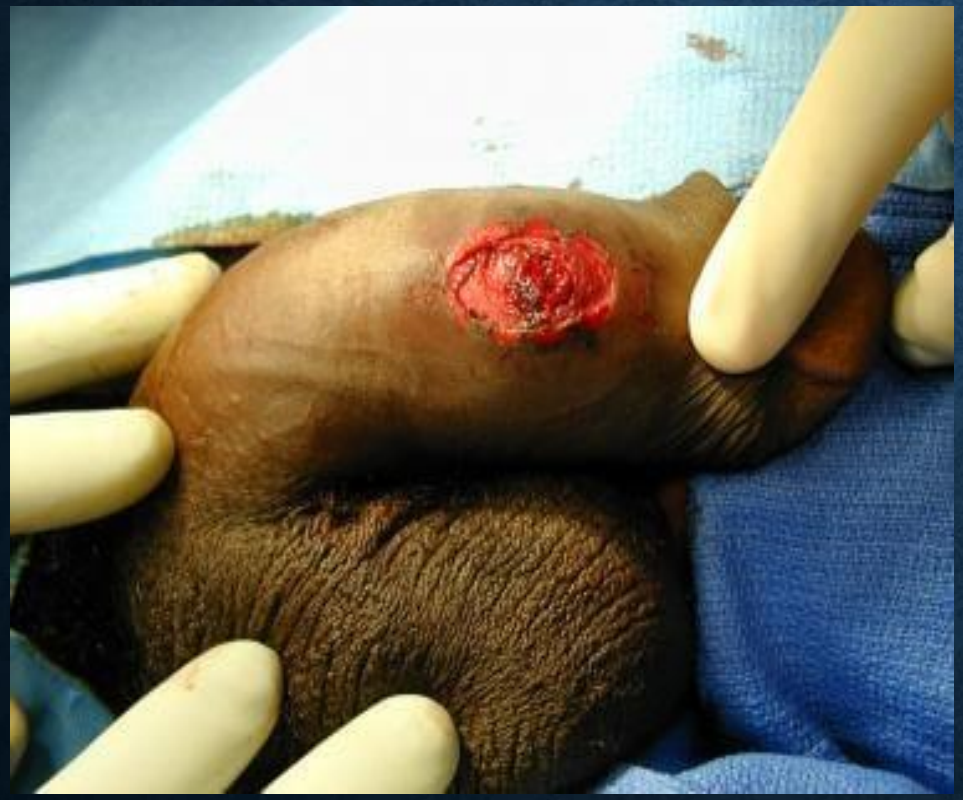
This scrotal sonogram shows a fractured testis with a disrupted tunica albuginea and testicular contents surrounded by tunica vaginalis.

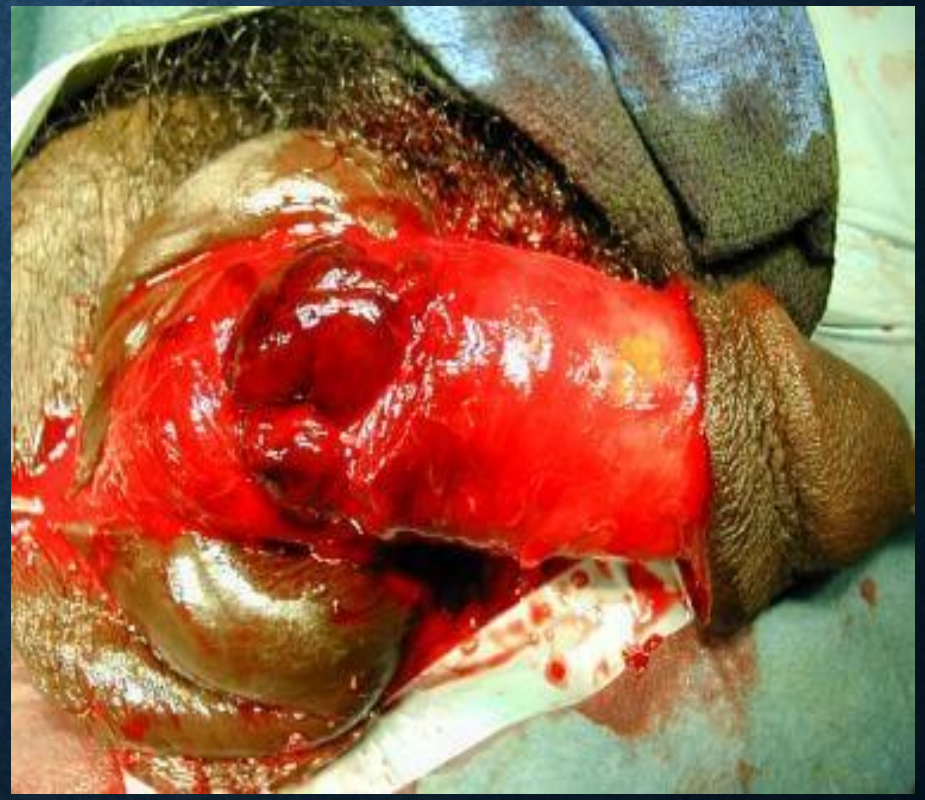


Longitudinal image of left testis showing discontinuity of tunica albuginea. This finding mandates scrotal exploration.

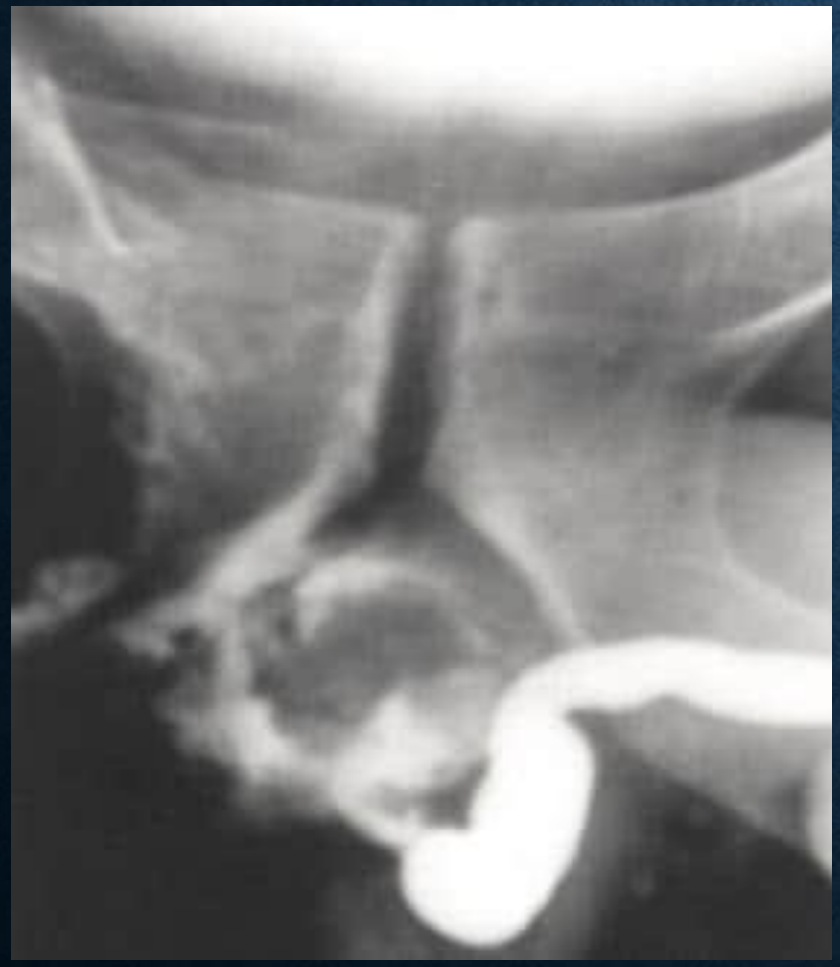


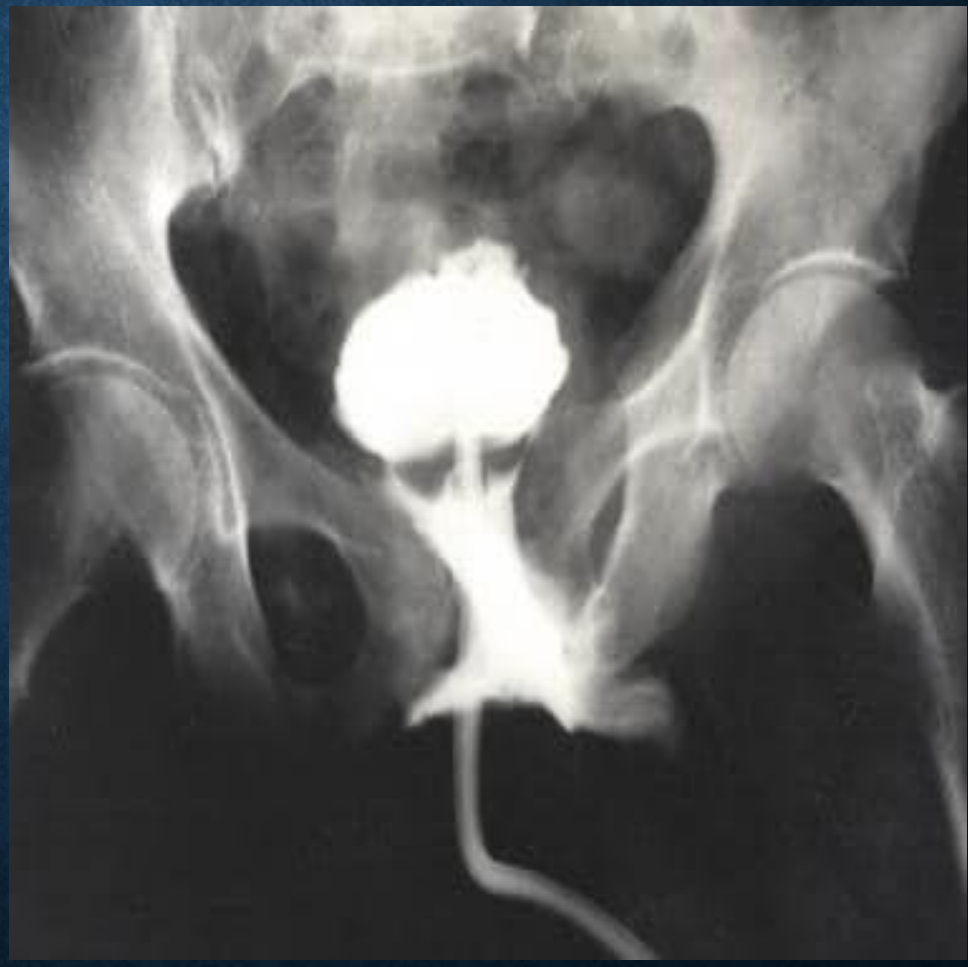
3-PENILE FRACTURE, HEMATOMA, & PENETRATING INJURIES





4-PARTIAL & COMPLETE URETHRAL INJURIES





Scientific Foundation SPIROSKI, Skopje, Republic of Macedonia
Open Access Macedonian Journal of Medical Sciences. 2021 Aug 08; 9(E):690-694.
https://doi.org/10.3889/oamjms.2021.6401
eISSN: 1857-9655
Category: *E - Public Health*
Section: *Public Health Epidemiology*

OPEN ACCESS

Fournier Gangrene Severity Index and Diabetes Mellitus: A Significance Correlation among Fournier Gangrene Patients in Single Center Hospital

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FGSI: FOURNIER GANGRENE SEVERITY INDEX SCORE

Variable	Abnormally high value				Normal value	Abnormally low value			
Score	4+	3+	2+	1+	0	1+	2+	3+	4+
Temperature (°C)	>41	39–40.9	–	38.5–38.9	36–38.4	34–35.9	32–33.9	30–31.9	<29.9
Pulse	>180	140–179	110–139	–	70–109	–	56–59	40–54	<39
Respiration rate	>50	35–49	–	25–34	12–24	10–11	6–9	–	<5
Sodium (mmol/L)	>180	160–179	155–159	150–154	130–149	–	120–129	110–119	<110
Potassium (mmol/L)	>7	6–6,9	–	5.5–5.9	3.5–5.4	3–3.4	2.5–2.9	–	<2.5
Creatinine (mg/100 mL)	>3.5	2–3.4	1.5–1.9	–	0.6–1.4	–	<0.6	–	–
Hematocrit (%)	>60	–	50–59.9	46–49	30–45.9	–	20–29.9	–	<20
Leukocytes (total/mm^2 × 1.000)	>40	–	20–39.9	15–19.9	3–14.9	–	1–2.9	–	<1
Serum bicarbonate (mmol/L)	>52	41–51.9	–	32–40.9	22–31.9	–	18–21.9	15–17.9	<15

FGSI: Fournier Gangrene Severity Index, Source: Kim: The Prognostic Factors and Validation of Severity Index in Fournier's Ganggrene, 2011.

FGSI above 9 is considered to have sensitivity and specificity to FG patient mortality. Sorensen et al. also reported that if the FGSI is above 9 then the probability of mortality is 75%, if it is below 9 the chance of survival is 78% with a mortality rate of 12.12%

Verma S, Sayana A, Kala S, Rai S. Evaluation of the utility of the Fournier's Gangrene severity index in the management of Fournier's Ganggrene in North India: A multicentre retrospective study. J Cutan Aesthet Surg. 2012;5(4):273-6. https://doi. org/10.4103/0974-2077.104916 PMid:23378710

Kim IY. Gangrene: The Prognostic Factors and Validation of Severity Index in Fournier's Ganggrene, Korea; 2011. Available from: https://www.intechopen.com/chapters/18911. [Last accessed on 2021 Aug 10].

Sorensen MD, Krieger JN, Rivara FP, Klein MB, Wessells H. Fournier's Gangrene: Management and mortality predictors in a population based study. J Urol. 2009;182(6):2742-7. https://doi. org/10.1016/j.juro.2009.08.050 PMid:19837424

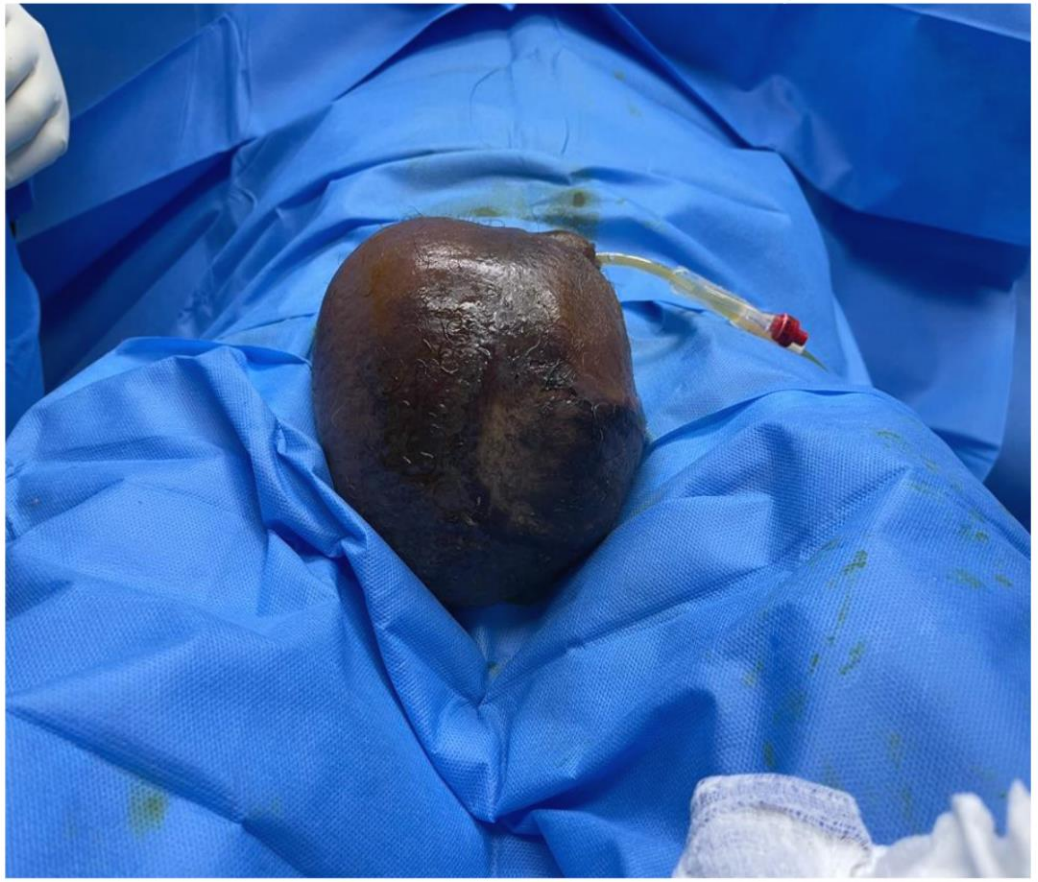
Gutierrez-Ochoa K, Castillo-de Lira HH, Velázquez-Macías RF, Landa-Soler M, Robles-Scott MA. Usefulness of Fournier's Gangrene severity index: A comparative study. Rev Mex. 2010;70(1):27-30.

A 60- year old diabetic male patient presented with UTI and inflammatory process of the scrotum, mainly on the left side (swelling, redness, and hotness), He visited one of the doctors who prescribed broad-spectrum antibiotics and told him to **come back within a week.**

What is incorrect?

It was a faulty decision

THIS IS THE RESULT OF DELAYED INTERVENTION



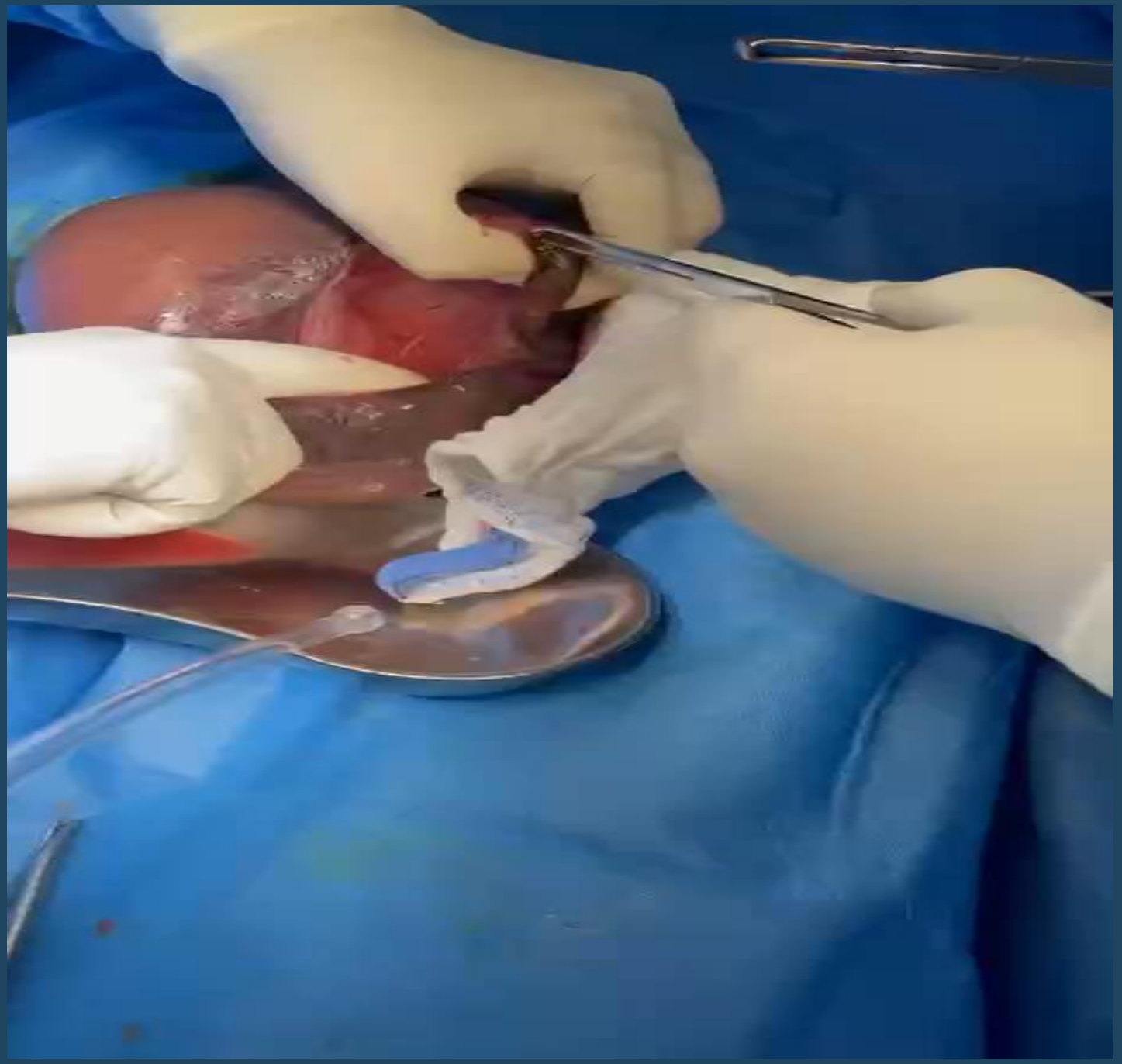
The patient should be admitted to the hospital for:

1-Control of Blood sugar

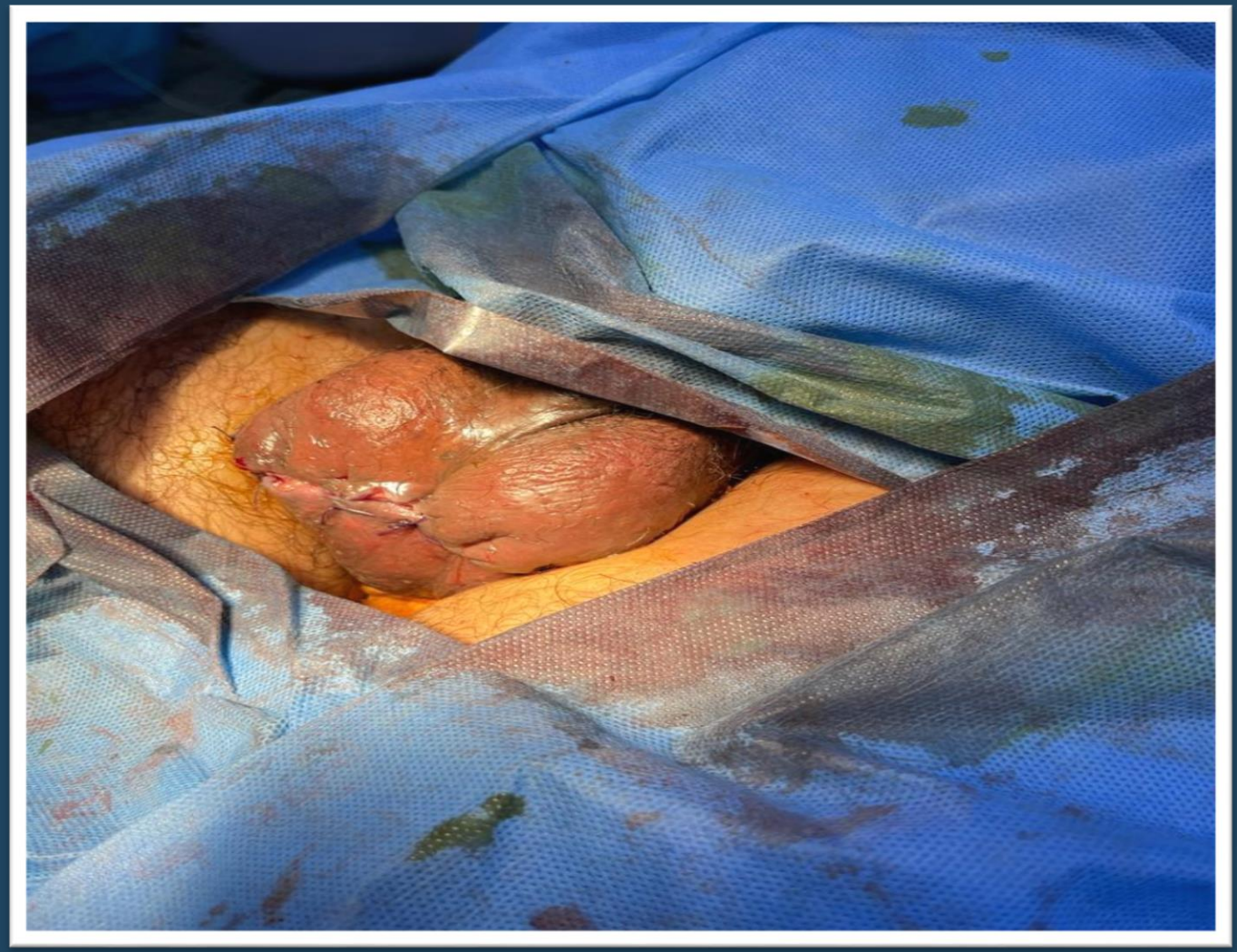
2-Wound Swab, blood, & urine for C&S with the start of broad-spectrum antibiotics

3-Urgent wide local exicion, seconary closure or skin graft

- Video



FINAL PICTURE



TAKE HOME MESSAGE

FG that is not diagnosed and treated properly will result in severe morbidity and even mortality for the patient.

Immediate and aggressive debridement has a positive effect on patient survival (reduces patient morbidity and mortality). Also Polymicrobials that cause the progression of this disease, necessitating aggressive, immediate surgery (debridement), and appropriate medical therapy.

This disease affects older people who are mostly aged 50 and 60 years with various basic diseases, in which diabetes mellitus (DM) is the most comorbid (50–70%).

Tetanus prophylaxis is administrated if soft tissue injury was indicated.

Consultation with a surgeon is very important, especially to urologists and colorectal consultants

The goal of debridement is to remove the origin of the site of infection as well as to remove infected tissue.

Thank you for listening