

Cystotomy

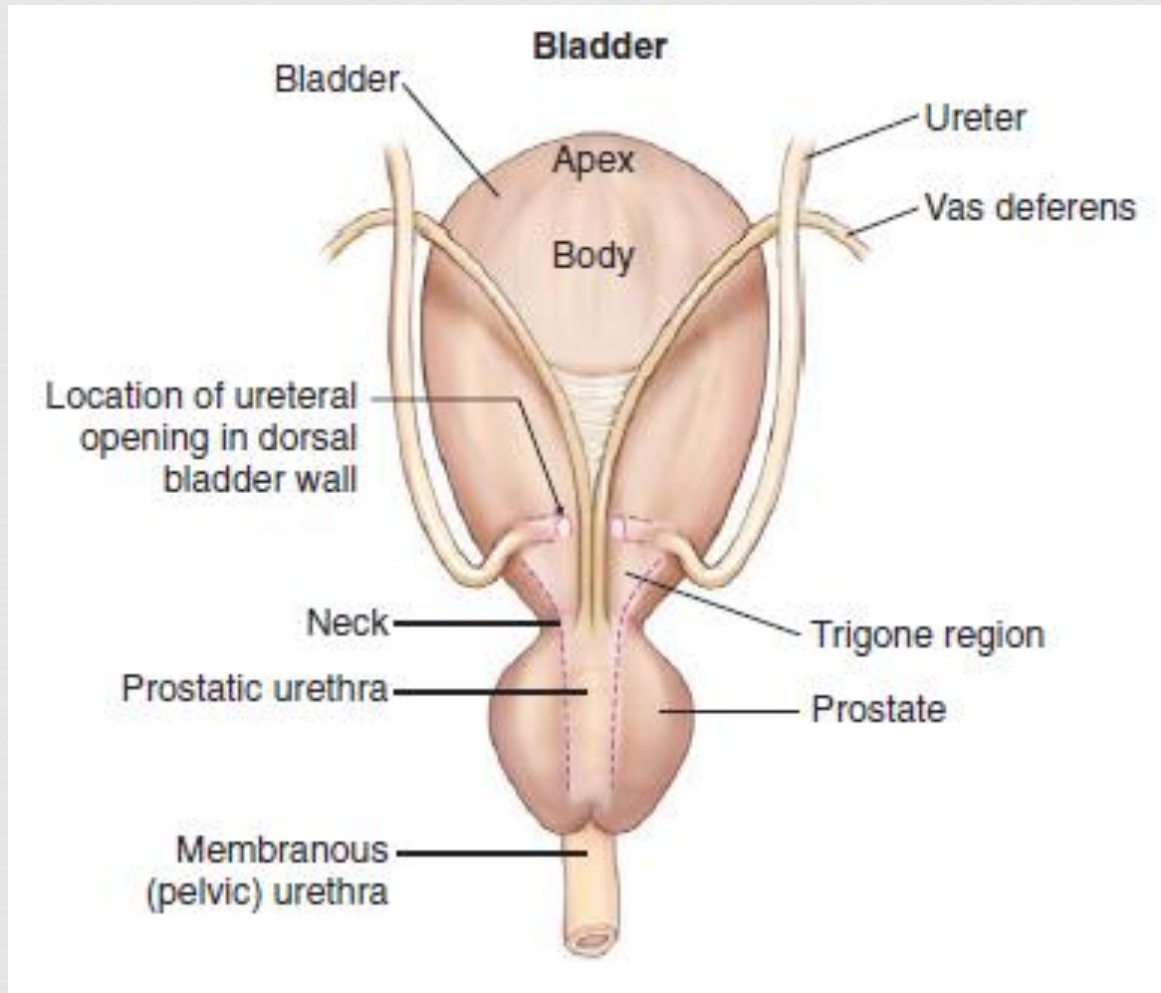


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Bladder



The bladder is a reservoir for urine and varies in size, depending on the volume it contains. The position of the bladder is also variable, lying just cranial to or within the pelvic canal when empty in dogs and extending cranially along the ventral abdominal wall as it distends. The fully distended bladder of a normal dog may be partially located within the pelvic canal. In cats, the bladder remains within the caudal abdomen, even when empty. The bladder has an apex, body, and neck. Each ureter tunnels obliquely for a short distance through the dorsolateral bladder wall before opening into the bladder through a narrow, oval orifice. The trigone is the internal region between the ureteral openings in the dorsal bladder wall and the proximal urethral opening at the bladder neck



Dorsal view of the gross anatomy of the bladder in a male dog.

Anatomy



The bladder lies within the peritoneal cavity and is attached to the abdominal wall via loose, double-layer peritoneal ligaments. One middle vesico umbilical ligament, which can be cut before cystotomy, is a very thin structure connecting the bladder to the linea alba and pelvic symphysis . Pair of latero vesico umbilical ligaments of the bladder attach to the pelvic walls and contain fat along with the distal portion of the ureter and umbilical artery on each side.

Blood Supply



☞ Internal pubic arteries

☞ Internal pubic veins

Innervation



1. Pelvic nerve----- parasympathetic motor fibers.
2. hypo gastric nerve --- sympathetic nerve
3. pudenal nerve

Cystotomy



✧ A surgical procedure whereby an incision is made in the skin and urinary bladder to allow the drainage of urine.

Indication



Indications for cystotomy include removal of calculi, repair of bladder trauma, biopsy or resection of bladder masses, biopsy and culture of the bladder wall in severe cystitis cases, neoplasm, repair of ectopic ureters, and inspection or catheterization of the ureters in the investigation of idiopathic renal hematuria.

Preoperative Preparation



1. The animal should be checked before the time of operation (general examination of animal)
2. Urine analysis , physical tests, chemical, bacterial culture and sensitivity testing case of infection
3. Blood analysis (check for uremia) , if animal is in shock give I/V fluid therapy
4. Radiographic examination (calculi)
5. Food was withheld for 24 hs. and water for 12 hs. Prior to surgery.
6. The area from the xiphoid cartilage to the pubis was prepared aseptically.

Site of operation



- Small animals: midline (linea alba) , prepubic region, and para median
- Large animals : paramedian

Anesthesia:

- In small animals and equine general anesthesia, while in ruminant sedative and local anesthesia.

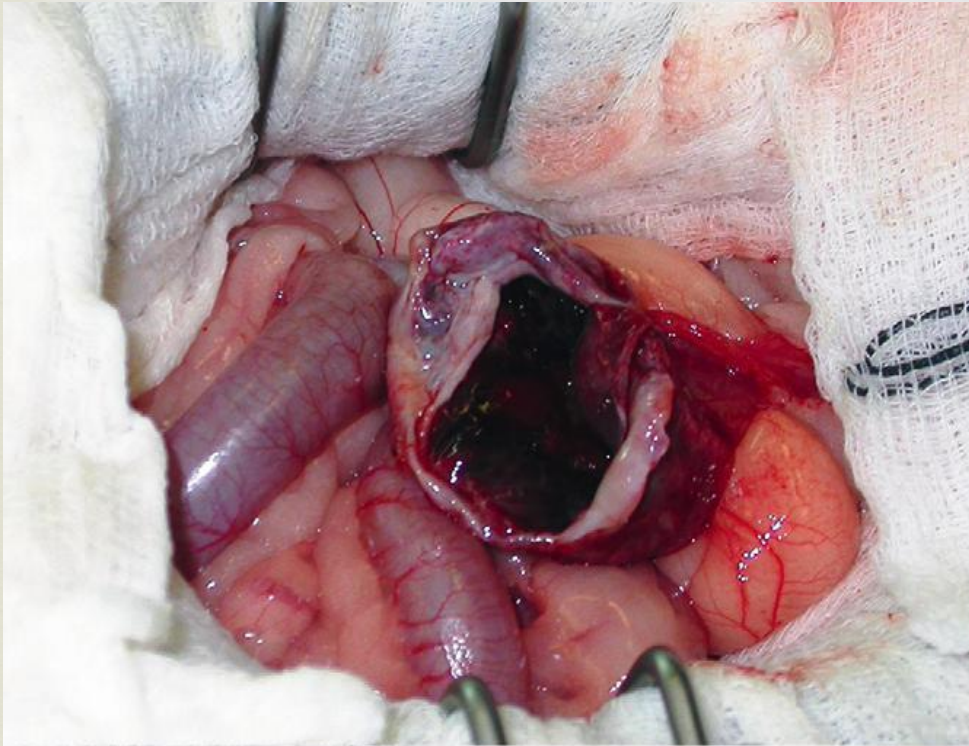
Procedure of Cystotomy



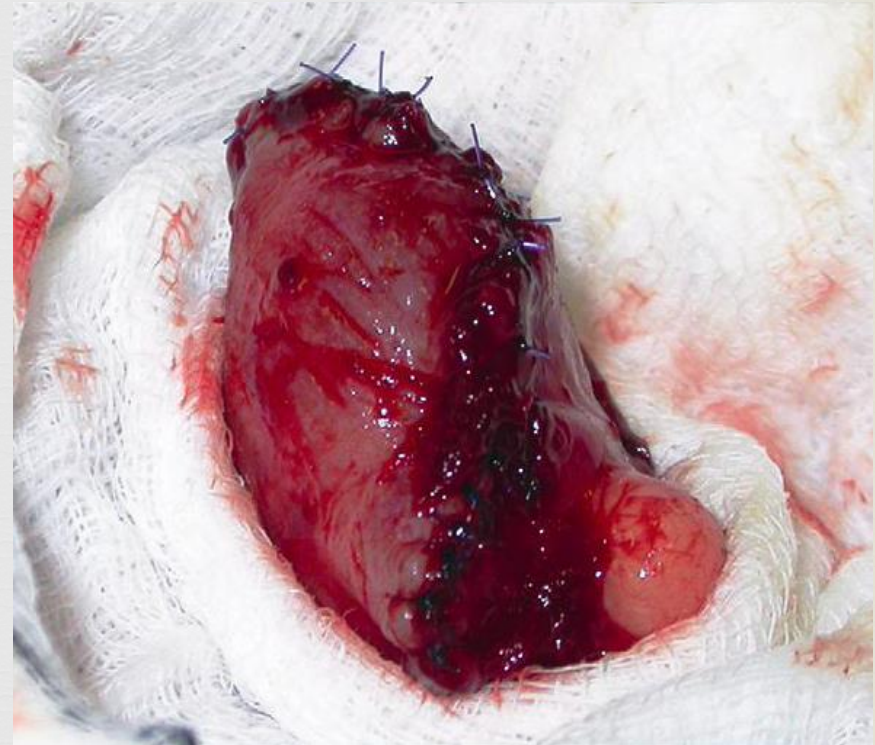
A midline laparotomy incision is made from the umbilicus to the pubis (curving parapreputially through the skin and subcutaneous tissue in male dogs). The bladder is identified and isolated from the rest of the abdomen with moistened laparotomy swabs, and a stay suture is placed in the apex. There is no difference in the likelihood of urine leakage, adhesions, or calculi formation between dorsal or ventral cystotomy approaches, but a ventral cystotomy is easier to perform, provides good visualization of the ureteral openings, and reduces the risk of iatrogenic damage to the ureteral openings. The cystotomy incision is performed approximately in the midline, but the surgeon should choose the least vascular region.

A stab incision is made into the bladder using a scalpel blade, and residual urine and blood are removed using suction.

The incision is extended cranially or caudally (or both) as needed, and further stay sutures are placed at the edges of the cystotomy incision. The bladder lining is inspected, and any abnormal areas are biopsied. The easiest place to excise a full-thickness bladder biopsy is at the edge of the cystotomy incision; samples may be submitted for microbiology as well as histopathology. Close the bladder with internal suture, routine closure of the linea alba, subcutaneous tissue, and skin is performed,



Rupture and necrosis of the bladder apex secondary to prolonged complete urethral obstruction in a cat **(A)**.



The devitalized tissue was resected and the cystectomy closed with simple full-thickness interrupted sutures **(B)**.

Post Op. Care



1. Systemic antibiotic should be administered for 3 to 4 post-operative days.
2. Post-operative medication should be given to relieve pain.
3. Often a urinary catheter will have been placed at surgery. This is typically removed in 24 to 72 hours.
4. The care requires reduced activity until the stitches are removed in 10 to 14 days.
5. Inspect the suture line daily for signs of redness, discharge.
6. Some blood-tinged urine is expected for the first few days.
7. The skin stitches were removed 14 post-operative days.

Complication



- Dehiscence or suture line leakage.
- Infection.
- Persistent hematuria.
- Obstructions.
- Impaired urinary output.
- Urine leakage can result from dehiscence of a sutured wound, necrosis of the bladder wall, or postoperative trauma to the urinary bladder. For effective repair of bladder wounds or incisions, a suture material that maintains acceptable tensile strength through 21 days should be used. Monofilament suture is recommended because it causes less tissue drag than multifilament suture, and fewer bacteria adhere to monofilament suture compared with multifilament suture.

Ref.



❧ **Veterinary Small Animal Surgery**

When you do not succeed in taking giant steps on the road to your goal, be satisfied with little steps, and wait patiently till the time that you are able to run, or better still, to fly. Be satisfied to be a little bee in the hive who will soon become a big bee capable of making honey...



Thank you ...

Any Question????