



Veterinary Specialists of Alaska, P.C. Client Information Sheet: Urinary Bladder Surgery

Urinary Bladder Surgery

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The topics discussed in this handout are: Cystotomy, Ectopic Ureter, and Patent Urachus Correction

Cystotomy

The urinary bladder is the reservoir that collects the urine that is formed by the kidneys. Urine passes from the kidneys to the urinary bladder via the ureters. The urethra is the passage from the urinary bladder to the outside of the body. A cystotomy is the surgical opening of the urinary bladder.

The most common reason to perform a cystotomy is to remove bladder stones (also known as cystic calculi). A cystotomy may be recommended in order to obtain a biopsy or to remove a bladder tumor. Cystotomy is also performed in order to correct anatomic abnormalities such as an ectopic ureter or patent urachus (for an in-depth explanation of canine and feline urinary tract diseases, please refer to the following web site:

www.hillspet.com then “Cat or Dog Care” then “Cat or Dog Diseases” then “Urinary Tract Disease”).

Bladder stones are relatively common in dogs and cats. Patients with bladder stones often exhibit increased frequency of urination. The urine may be cloudy or bloody. In some cases, small stones actually obstruct the urethra. Patients with urethral obstruction may leak urine and/or strain to urinate. In these patients, the urinary bladder will fill and become very firm and painful. Because the patient cannot void the urine, the toxic waste products that are normally eliminated with the urine, remain within the blood stream and reach dangerous levels which make the patient extremely ill. The build-up of the toxic waste products is termed azotemia.

These patients lose their appetite for food and water and will begin to vomit. As the condition worsens, the individual will become depressed and lethargic and the body temperature will begin to drop. Additionally, because of the lack of ability to void urine, blood potassium levels increase which can slow or even stop the heart. Untreated urethral obstruction can be fatal. For that reason, this condition is an emergency!



Urinary bladder stones

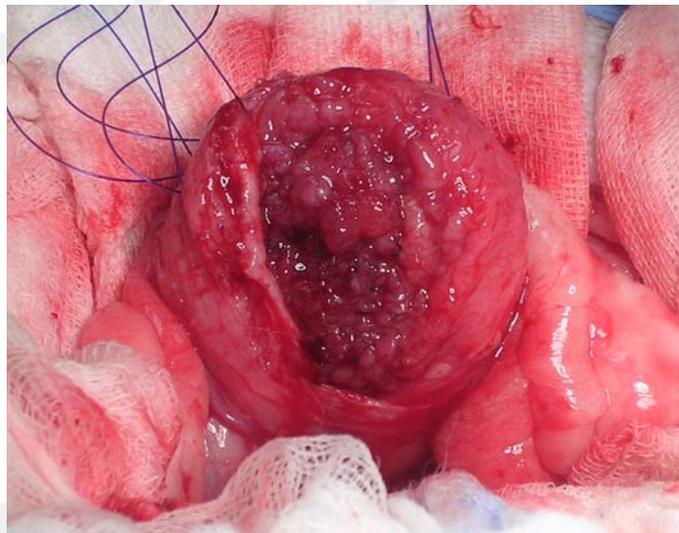


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Prior to anesthesia and surgery, these patients must be appropriately stabilized. This means that they should be well hydrated, azotemia should be corrected as much as possible and the blood potassium level should not be markedly elevated. If it is not possible to relieve the urethral obstruction by passing a urethral catheter, a needle should be introduced directly into the urinary bladder through the abdominal wall to draw off the urine. This procedure is called cystocentesis. It is generally well tolerated and can be performed without anesthesia. It may be necessary to repeat this procedure.

The Surgery: The patient is positioned on his or her back. An incision is made on the midline of the belly. The urinary bladder is identified and packed off with sterile towels. The urine is drawn off and the bladder is incised. If the purpose of the cystotomy is to remove calculi, they are removed. The urethra is then flushed extensively with saline to make certain that no calculi are within the urethra. The urinary bladder wall is then apposed with suture material that will be absorbed over an extended period of time. Closure of the urinary bladder is followed by closure of the abdominal wall, subcutaneous tissues and skin. Calculi are generally submitted to a laboratory for analysis to determine exactly what they are made of. Additionally, calculi are submitted for bacterial culture and sensitivity to determine if infection is present and which antibiotic will be most effective.

Cystotomy is often performed in order to expose a bladder mass. Once the mass is exposed, the decision can be made whether to obtain a biopsy sample for histologic evaluation or to completely excise the mass. If mass is located toward the front of the bladder, it may be removable. If masses are located toward the back end of the bladder, in the trigone region (where the urethra and both ureters come together), removal is generally not feasible and biopsy would be indicated.



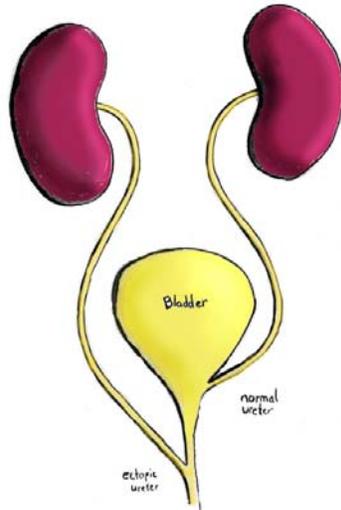
Tumor of the urinary bladder



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Ectopic Ureter Correction

Ectopic ureters are ureters that do not empty into the urinary bladder. Instead, they bypass the bladder and empty into the urethra. Patients with ectopic ureters exhibit urinary incontinence because urine is transported directly from the kidney(s) to the urethra, rather than being stored in the urinary bladder. The treatment is to identify the ectopic ureter(s) and implant them in the urinary bladder. Ectopic ureters can occur in a variety of forms and can be challenging to treat. Many patients with ureteral abnormalities also exhibit weakness of the urethral sphincter. This can result in persistent incontinence after surgical correction of the ureter. Some patients with postoperative incontinence benefit from medical management as well.



An ectopic ureter (left) does not empty into the urinary bladder but into the urethra. This is a common cause for urinary incontinence in young, mostly female, dogs.

Patent Urachus Correction

A patent urachus is a communication between the urinary bladder and the umbilicus. This is a structure that is necessary during fetal development, but closes at birth. In some individuals, it remains open and must be removed when the patient is old enough to tolerate surgery and anesthesia (12-16 weeks of age). A patient with a patent urachus will leak urine through the umbilicus and may experience urinary tract infections. A patent urachus would be excised entirely.



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Post-Operative Care: Appropriate pain management is critical in these patients as it is in all patients undergoing surgery. Analgesic (anti-pain) medications are administered before, during and for 1-2 weeks following surgery. Our analgesic protocol is tailored to the individual and involves a combination of safe, effective systemic analgesics that help these patients come through this procedure as comfortably as possible. Activity is limited to brief leash walks for urination and defecation for 3 weeks post-operatively.

An Elizabethan collar should be worn when the patient is not under the direct supervision of a responsible person. The surgical incision should be checked daily for discharge such as blood, serum or pus. Please contact us, or your regular veterinarian immediately if you notice evidence of discharge from the incision. Food can be offered within 12-18 hours of surgery. If the cystotomy was performed to remove calculi, the patient should be maintained on a diet intended to prevent the recurrence of crystals and calculi. These diets vary depending upon the type of crystals and calculi identified.

The first recheck is typically performed 7-14 days after surgery. The skin incision is evaluated to assess healing. Skin sutures or staples typically are removed 10-14 days after surgery.

Most patients receive oral antibiotics for 2 weeks following surgery.

Potential Complications: It is not unusual for patients to have blood in their urine for 5-7 days post-operatively. If a non-resectable tumor is the reason for the cystotomy, the patient may have blood in the urine for the rest of his or her life. The incision into the urinary bladder can come apart. This is called dehiscence. This is more likely to occur if there is widespread cancer in the urinary bladder that precludes normal healing. Otherwise, it is very rare. If dehiscence occurs, additional surgery is warranted to identify the location of the leak and repair it.

We hope that this information pamphlet was helpful to help you. Please do not hesitate to call or ask at your next appointment if you have any questions or concerns.

Your VSOA Team