

Urethral Stones in Male Dogs

Surgery Service



**Michigan Veterinary
Specialistssm**

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Locations

Auburn Hills

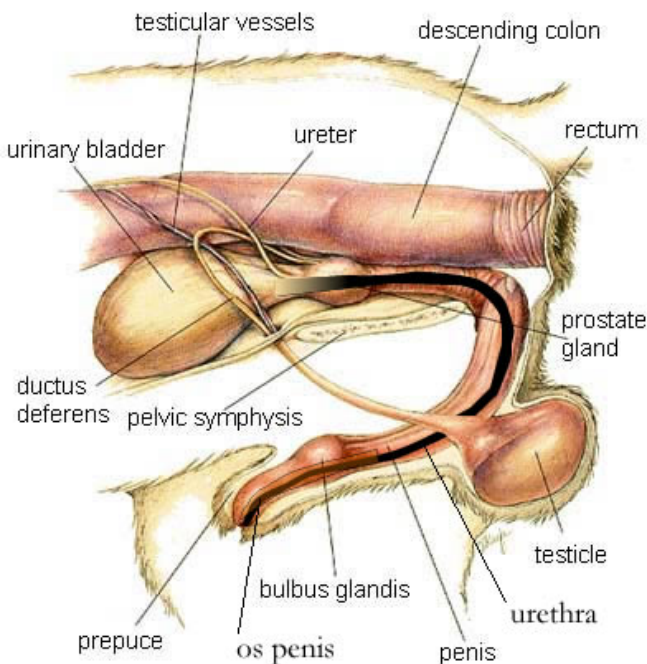
3412 E. Walton Blvd.
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Grand Rapids

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Anatomy

The bladder collects urine from the kidneys and contracts to expel its contents during urination via a tube called the urethra. The terminal part of the urethra in a male dog runs through a bone called the os penis. This part of the urethra is relatively narrow and can prevent passage of bladder stones.

How do stones form?

There are many causes of bladder stones. Calcium oxalate stones are most commonly found in male dogs and form due to a condition of the kidney that promotes oxalate

secretion into the urine. Certain breeds such as Schnauzers are

more prone to have this problem. Oxalate stones may form if the pet has a tumor of the parathyroid gland or types of cancer.

Struvite stones may be due to chronic bacterial bladder infection. Some types of bacteria breakdown urea in the urine to form ammonium, an ingredient of struvite stones.

Ammonium biurate stones form if a pet has a liver disease such as a portosystemic shunt. In such cases the liver is unable to clear the blood of uric acid, thus stones form. Surgical correction of the shunt usually prevents the stones from recurring.

Some Dalmatians lack an enzyme called uricase in their liver and kidney cells that results in the accumulation of high levels of uric acid in the blood, which causes the formation of urate stones in the kidneys and bladder.

Signs

If the stones are causing incomplete obstruction of the urethra, the pet will dribble urine or have a poor stream of urine during urination. If the urethra is completely obstructed by a stone, the affected dog will attempt to urinate without success. As the bladder becomes more and more distended, signs of pain may become evident. Signs of pain in a dog include, whining/whimpering, panting, pacing, and pulling the lips back (grimace). Upon palpation of the abdomen, the bladder will be painful, firm and enlarged. As the toxins accumulate in the blood, the patient develops signs of vomiting, abnormal heartbeats, depression and in severe cases, coma, and death.

Diagnosis

X-rays of the abdomen are necessary to show that the obstruction is caused by stones in the

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urethra (see photo – note arrow) and bladder. X-ray of the urethra and bladder following injection of contrast may also be used to identify the cause. Blood is tested to evaluate for impaired kidney function. Abdominal ultrasound can also be used to evaluate the urinary tract, but may not be necessary in every patient.

The day of surgery

Our anesthesia and surgical team will prescribe a pain management program, both during and after surgery that will keep your companion comfortable. This may include a combination of general anesthesia, injectable analgesics, epidural analgesia, and oral analgesics.

Treatment

Urinary blockage is an emergency; therefore, it is essential to have this condition treated immediately. Your veterinarian will start intravenous fluid therapy, as these patients commonly are dehydrated. If the potassium level is very high, glucose (a type of sugar) and insulin are administered intravenously to lower the level of this electrolyte. In most cases, the patient will need to be anesthetized in order to flush the stones from the urethra into the bladder. A urinary catheter is then passed up the urethra and into the bladder. Stones are surgically removed from the bladder once the patient is stable and the toxins have been eliminated from the blood stream, which typically is within 24 hours.

If the stones cannot be flushed back into the bladder, an emergency scrotal urethrostomy is recommended. This procedure first of all requires castration to be performed if the pet is intact, as this is the location where the urethra will be surgically opened. A one-inch incision is made into the urethra and the lining of urethra is sutured to the skin edges to create a permanent opening through which urine can pass (see photo right). If the stones lodged in the os penis cannot be removed, they can be safely left in place. If the stones remaining in the bladder are too large to be removed by a nonsurgical flushing technique, a cystotomy is performed to remove the stones.

Home care

Most patients that have a scrotal urethrostomy can be released from the hospital one day after surgery or once the toxins have been eliminated from the blood stream. An analgesic will be prescribed to keep your companion comfortable at home. The incision should be checked twice daily however, should not be washed or disturbed, as this may cause bleeding and delay healing. An Elizabethan collar must be kept on the patient for about 10 days.



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Antibiotics typically are continued for about 2 weeks after surgery.

Complications associated with the surgery may include an atonic bladder, bleeding from the surgery site, infection and stricture of the urethra. The atonic bladder is due to chronic overstretching of the bladder muscle, which results in a bladder that can no longer contract and expel urine. This problem is treated with medications and urinary catheterization, and usually resolves within 7 days after surgery. Bleeding is typically self-limiting and rarely needs treatment other than ensuring that your dog does not disrupt the incision by licking. Bleeding is commonly seen during urination or excitement. A sedative can be prescribed to help reduce over activity and excitement. Bladder infection is the most common complication following surgery. Signs of a bladder infection include blood in the urine, straining to urinate and frequent visits to the litter box. Some dogs may have no visible signs of infection; therefore, a urinalysis and urine culture should be done every 4 months by the pet's veterinarian. Stricture of the urethra at the surgery site is a serious, yet uncommon complication that occurs within the first 6 weeks after surgery. Warning signs of this complication are the same as those seen with urinary obstruction. Additional surgery attempting to correct this problem is usually successful.

Assessment and recommendations

Patient: _____

Date: _____

Treatment

- Emergency surgery is recommended by a surgeon at Michigan Veterinary Specialists
- Surgery can be delayed and performed tomorrow

The following has been prescribed

- No medications or special diet are necessary at this time
- Diet: _____
- Antibiotic: _____
- Other medication(s): _____

Exercise

- Confine your pet to the house other than very short leash walks necessary for bowel movements and urination
- Restrict exercise to leash walks 10 minutes twice daily

Preparation for surgery

- Start fasting your companion at midnight before the day of surgery; water should not be withheld
- Pepcid AC 10 mg tablets: give _____ tablets with water (use syringe if needed) at 6 AM on the day of surgery

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