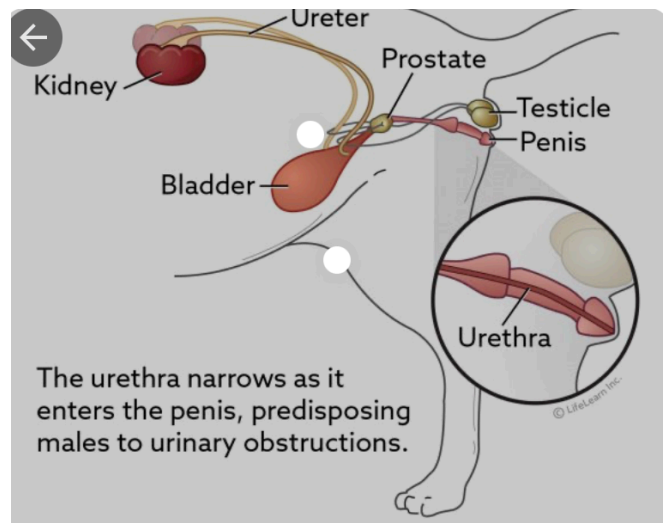


PU (Perineal Urethrostomy): Urinary Obstruction in Male Cats

Associated Terms:

Blocked Cat, PU, Perineal Urethrostomy



OVERVIEW: How to surgically solve the “blocked cat” problem

Male cats can easily develop obstruction of the urethra which is the tube draining urine from the bladder out of the penis. Obstructions are often the result of plugs of inflammatory material, mucus, crystals, small stones (called calculi) that have formed in the kidneys & have passed down into the bladder. The cause of the inflammatory materials & stone formation is NOT well understood, though viral infections & diet may play a role. Other causes are reported such as cancer, previous injury causing scarring & trauma are also reported.

Early neutering of cats does NOT cause reduction of urethral size as in some other species.

Male cats have a very small urethra as it passes down through the penis; at the end, the diameter can be smaller than 1mm. When some male cats get bladder inflammation (cystitis) for any reason, the urinary debris that forms in the bladder (white blood cells [WBC], bladder cells, crystals, stones &/or mucus) can plug this tiny opening when the cat tries to urinate. We often call this a “blocked cat” & the condition can be life-threatening. Therapy is urgently needed to relieve the blockage & evacuate the urine from the bladder. After the patient is stable, there are decisions to be made about next steps.

Most commonly, the next steps are conservative in nature—pain & anxiety medications, bladder catheter, time. Occasionally, a patient will not remain “un-blocked” for very long; they “re-block” too frequently for conservative management to be realistic; or the urethra is too damaged or narrowed/scarred for natural urination. This is when the PU comes into the discussion.

The PU procedure removes the portion of the urethra within the penis (along with the penis, prepuce & scrotum) & attaches a larger diameter portion of the urethra (up closer to the bladder) to the skin. This increases the diameter to 2-5mm & reduces the chance for debris to plug the urethra in the future.

SIGNS & SYMPTOMS

Most affected cats are within 1 to 10 years of age. Signs & symptoms may vary from mild to severe. Initially cats may show signs of urinary tract inflammation & discomfort, including straining to urinate, frequent urination, blood in the urine, painful urination & inappropriate urination (urinating outside of a litter box).

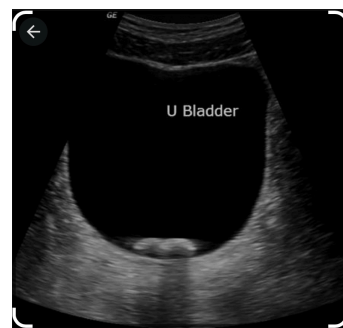
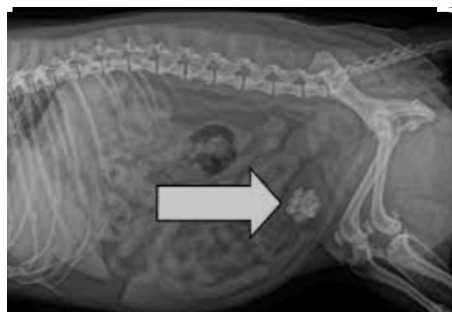
These bouts can resolve in 5–7 days but recur in many cats within 6–12 months. Symptoms are profound & life threatening if complete obstruction occurs & no urine can get out of the body.

Once cats become completely obstructed, they may attempt to urinate in the litter box but will produce no urine or dribbling of urine. The cat may cry, move restlessly or hide because of discomfort & eventually lose their appetite & become lethargic. Complete obstruction can cause death of the cat in ~3–6 days. A cat with a urethral obstruction will have a large, painful bladder that is easily felt in the back half of the belly unless the bladder has ruptured.

Some risk factors have been evaluated for lower urinary tract disease in cats. Increased risk was found in cats that eat dry food, being kept indoors, nervous/fearful/aggressive behaviors, stress, & being in multi-cat household. The incidence of urinary obstructions is reportedly higher in the winter months. Bladder inflammation leading to mucous plugs (sometimes called "Feline Urologic Syndrome" or "FUS") is more common in male cats. UTI (urinary tract infection) & cystitis (inflammation of the bladder) can predispose cats to urinary obstruction.

DIAGNOSTICS

In cats with signs of urinary tract inflammation, blood work is evaluated to check kidney function & to determine if there is any evidence of infection or other systemic illnesses. A urine sample is evaluated for crystals & may be sent in for culture, although bacterial infections of the bladder are uncommon in cats but still can occur. In cats with recurrent infections, x-rays of the belly may be taken to see if calculi (stones) or other material are present in the kidneys or bladder & your primary care veterinarian may inject contrast material into the bladder during x-rays to see if there are any anatomic causes for straining & bloody urine, such as a bladder wall defect or a stricture (narrowing) of the urethra. Bladder ultrasound may reveal urinary stones that are not detected on radiographs can support non-contrast radiographs.



TREATMENT

“Why is this procedure being recommended for my pet?”

If a cat cannot be helped to urinate freely with conservative treatments or “blocking” episodes are happening too frequently, then surgical treatment is a logical next step. The risks & benefits of a more involved treatment tip in favor of the benefits—improved urination with much lower possibility of another blocked episode.

“What options do I have to treat my pet’s condition?”

The 3 most common initial approaches to a blocked cat all center around the goal of allowing urine to be removed from the bladder (so the patient does not become toxic), reducing the stress/anxiety/discomfort to the patient & decreasing the chance of the blockage returning. One option is to provide oral pain & anti-anxiety medications, brief/light sedation to remove the plug in the urethra & drain the bladder with a catheter & then quiet/calm seclusion & monitoring of natural urination at home. Another option is similar, although additional support provided in a 24-hour hospital setting. A more involved approach adds an “indwelling” bladder catheter that continuously drains the bladder over several days.

There are benefits & drawbacks to each initial treatment approach & a thorough discussion with your veterinary team is needed to find the best starting place for you & your cat & a plan to address problems as they arise.

If these treatments are unsuccessful or unavailable for any reason, surgical treatment can be a next step.

Longer term, the new urethral opening can scar excessively & result in too small of an opening. This may require additional surgical treatment to open back up. Having a shorter urethra very close to the anus predisposes to bladder infections. This is uncommon in most cats with normal, highly concentrated urine.

For cats with kidney disease or diabetes, the dilute urine they produce increases the chance of bacterial infection. Routine monitoring of urine cultures may be helpful to prevent serious infections.

“Are there situations when the surgical outcome is NOT what we hoped it would be?”

As mentioned, excessive scar formation at the new urethral opening can occur months to years down the road & result in recurrence of blockage problems. Surgical reconstruction & removal of the scar may be needed to improve urine flow again.

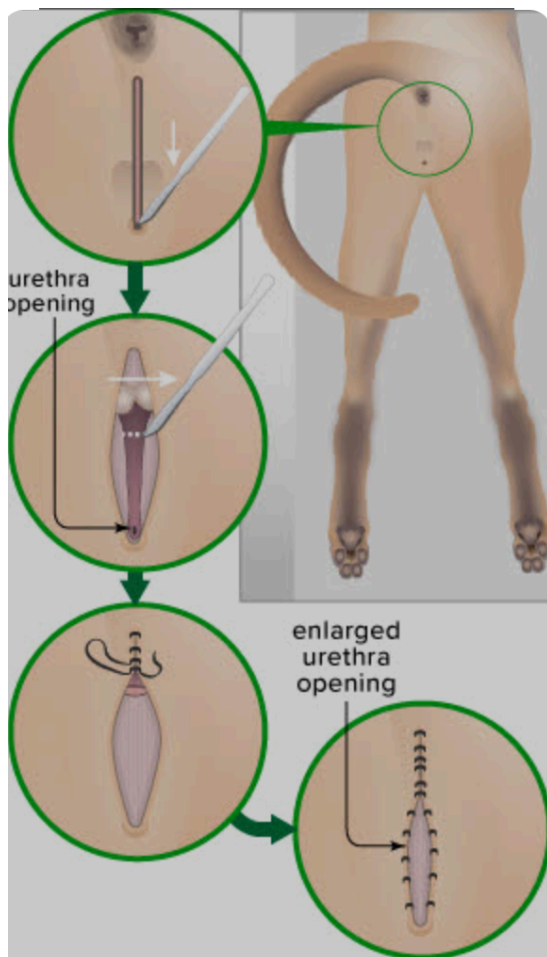
Cats that have urinary obstruction require emergency treatment. Sedation or general anesthesia is needed in all but the sickest patients to allow placement of a catheter into the urethra to flush out the plug or force the stone into the bladder. The bladder is thoroughly flushed & drained through the catheter to remove any remaining sediment. The urinary catheter is then typically left in place

for a few days until urethral swelling subsides. Once the catheter is removed, the cat is then evaluated to make sure he/she can urinate freely before being discharged from the hospital. Your veterinarian may also prescribe pain medication, a diet change to decrease crystal-forming tendency, or other drugs to make the cat more comfortable & help he/she to relax.

In cats with bladder stones that can be flushed into the bladder, a **cystotomy** (surgical opening of the bladder) is performed to remove the stones.

If the obstruction recurs or cannot be relieved, a thorough work-up (including x-rays, cultures & contrast studies of the bladder & urethra) should be performed before surgery is considered.

If your cat has multiple occurrences that cannot be unblocked or managed medically & does NOT have any underlying conditions that could cause recurrence, your veterinarian may recommend a perineal urethrostomy ("PU"), or surgical widening of the urethra. This procedure is intending to provide a permanent opening that allows crystals, mucus plugs, or small stones to pass out of the urethra; this minimizes the chance of re-obstruction.



AFTERCARE & OUTCOME

Pelleted or paper litter may be used for several days after the surgery. Cats that have severe swelling or leakage of urine under the skin may require placement of a urinary catheter for 2–3 days. An Elizabethan collar is kept on the cat for 10–14 days after surgery to prevent self-trauma which is devastating to the outcome of the surgery. In some cats, absorbable sutures are used in the surgery site, while other cats may have non-absorbable sutures that require removal in 10–14 days. Cats should be rechecked at regular intervals after the surgery.

After surgery, some cats will develop bleeding or swelling. Stricture (scarring & narrowing) of the urethrostomy site may occur if the cat traumatizes the surgery site or with incomplete dissection or urine leakage under the skin. This can cause recurrence of symptoms or complete blockage. Bacterial urinary tract infections occur in 25% of cats within the first year after perineal urethrostomy. Perineal urethrostomy does NOT prevent bladder inflammation or stone formation.

Prevention of urethral blockage depends on the cause of the blockage. If the surgery is performed properly, it is unlikely that cats will develop subsequent urinary obstructions. Perineal urethrostomy does NOT prevent bladder inflammation or stone formation, however, so clinical signs of urinary tract disease may continue in some cats.



“How is my pet’s life & lifestyle likely to change after this procedure?”

Your cat’s use of a litter box is unlikely to change after surgery; most cats who did use a litter box routinely will return to that routine. Litter box use may improve, if litter box aversion was related to ongoing urethral pain. It may also deteriorate if urethral pain & inflammation continues beyond the typical healing period. Any negative change should be investigated with your primary care veterinary team.

If your pet has been experiencing Feline Lower Urinary Tract Disorder (FLUTD) for a period of time, these signs are unlikely to improve with surgery. The inflammation characteristic of this condition may continue. Discuss the best way to monitor your cat’s signs with your primary care veterinary team.

We strongly recommend that non-clumping/non-clay cat litter be used indefinitely. The urethral opening is often more damp than a normal penis/prepuce; clay & clumping litter can attach to this damp area & accumulate. Problems with healing (early on) & bladder infection (long-term) are risks with these types of cat litter.

Ongoing monitoring for bladder infection signs at home & scheduled urine culture screening may be needed indefinitely to detect problems early.

Hygiene management around the new urethral opening may be needed; routine clipping of medium/long haired cats is beneficial. Weekly attention to the area “under the tail” should be part of your routine interaction with your cat.

“Are there things I can do to prepare myself, my home &/or my pet for this procedure?”

If time allows, begin a transition to non-clumping/non-clay litter. For the postoperative recovery, prepare a safe location at home where your cat can be confined. Urine “accidents” & blood spotting are common for the first 1-2 weeks, so choose a location that can be cleaned. Your pet will be on pain medication that may make him/her wobbly; temporarily adapt the litter box arrangement so that it is easy to use. Have on hand some very tempting foods (like meat baby foods, canned food, pill pockets) to improve appetite & medication administration.

Outpatient surgery & anesthesia can be uncomfortable, painful, disorienting & frustrating experiences for animals; watching your pet work through the early postoperative period & recover from anesthesia & pain medications can be worrisome, scary & frustrating for pet owners. The vast majority of the time this period of difficulty is brief & your pet is actually more

comfortable & secure at home with you. Sometimes it doesn't feel like that at two in the morning when your pet is anxious & not consolable & you are unsure of what to do. You always have the option of transporting your pet to a 24-hour veterinary facility postoperatively. If you do not want to have your pet home in the first few days postoperatively, please advise your primary care veterinary staff. They will provide contact information for a local 24-hour veterinary facility & help get an estimate for the ongoing care.

It is important that you have proper expectations about this procedure; your experience & you pet's outcome will benefit greatly. Please discuss this information with your veterinarian when working through the decision- making process regarding Perineal Urethrostomy in a blocked cat.

“What postoperative complications do I need to know & understand when considering this surgery?”

It is common for urethral bleeding/spotting to continue for 1-2weeks after surgery. It is uncommon but possible for there to be excessive bleeding that will require hospitalization & sedation for treatment.

Similarly, when the bleeding/oozing is underneath the skin, excessive bruising of the perineum, thighs & groin can develop after surgery. Rarely is this something that needs additional treatment.

If you have any questions, please feel free to ask your primary veterinarian &/or veterinary surgeon.

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