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Urethral obstruction

Blocked tom cat

AffectedAnimals:

Male cats are affected most commonly. Dogs can develop urethral obstructions as well.

Overview:

Urine flows out of the bladder through a tube called the urethra. When debris or stones get lodged within this tube, urine builds up and is unable to be released properly. Most often, male cats rather than female cats develop this condition because the male urethra, located within the penis, is narrower than the female urethra and thus is blocked more easily. The longer the blockage remains, the more seriously the condition threatens the cat's health. A complete obstruction of urine flow is a medical emergency that can result in irreversible kidney damage and death.

Some symptoms of urethral obstruction may elude owners until the cat is severely ill. Frequent trips to the litter box, urinary accidents, the presence of blood in the urine, and straining to urinate are early signs that the cat is affected by a urinary tract problem. Once a blockage has occurred, the animal will become increasingly sick and may vomit, refuse to eat, and become weak. The examining veterinarian can relieve the obstruction and monitor the cat's condition until the animal is able to urinate freely.

Although diagnostic tests may identify an underlying disorder, often it is difficult to determine all of the factors that cause a urethral obstruction. If indicated by the laboratory results, preventive measures such as dietary therapy and medication may be prescribed in order to deter obstruction in the future. If the blockage is recurring, the veterinarian may suggest a surgical procedure in which the urethra is widened.

Clinical Signs:

Clinical signs include pollakiuria, stranguria, reduction in the quantity or quality of the urine stream, absence of urine stream, hematuria, and urinary bladder distention. Signs of uremia will develop in cases of complete urinary obstruction

and become increasingly severe with time. If the urinary tract ruptures at any point, evidence of urinary leakage into the surrounding areas may be detected.

Symptoms:

Symptoms include frequent attempts to urinate, straining to urinate, and a decreased amount of urine or lack of urine produced by attempts to urinate. Sometimes, the urine may be bloody. Some owners will assume incorrectly that the straining behavior is a result of constipation. The toxic symptoms that develop secondary to the obstruction become progressively worse with time. These include lethargy, reduced appetite, vomiting, weakness, a rapid but shallow breathing pattern, abnormal mental state, and seizures. If the urinary tract ruptures, the cat may display symptoms of abdominal pain.

Description:

The urinary tract consists of the kidneys, ureters, urinary bladder, and urethra. The ureters and urethra are tubes that carry the urine from the kidney to the bladder and from the bladder to the outside of the body. The kidneys filter contents out of the blood such as waste products and liquid. The filtered fluid, or urine, is then sent to the bladder for storage until the animal urinates.

If the urinary tract gets obstructed at any point, the urine will back up in the bladder and then into the kidneys. This will result in renal failure and a buildup of toxins in the bloodstream. Urethral obstruction is a life-threatening emergency and should be addressed by a veterinarian as soon as possible. The longer the cat remains obstructed, the more likely it is to suffer irreversible organ damage or death.

Bladder stones can cause an obstruction to the flow of urine. Also, cats can get urethral obstructions due to a urethral plug caused by a lower urinary tract disease. A number of interconnected factors result in bladder stone formation. The inflammatory reaction within the bladder, a highly concentrated urine, the presence of mineral crystals or stones, and the production of an organic matrix substance all contribute to the disease process. A urethral plug forms within the small area of the urethra from the matrix and debris from the urine that have conglomerated together. Cats that develop lower urinary tract disease tend to form multiple plugs.

The urethra is the most common place for an obstruction of urine to occur because of how narrow the opening becomes at distal end. Because the urethra is narrower in the male cat than it is in the female, male cats are especially prone to urethral obstructions.

Diagnosis:

The veterinarian will diagnose urethral obstruction after a complete history and physical exam. Diagnostic tests are performed to investigate where the obstruction is located and the extent of the secondary damage. Typically, the veterinarian will order routine blood tests, such as a complete blood count, a

serum panel, and a urinalysis. Frequent reassessments will be made to monitor the animal's response to treatment.

Prognosis:

The prognosis of a urethral obstruction depends entirely on how quickly the illness is discovered and treated. Cats that show signs of toxicity have a serious prognosis. If irreversible damage to the kidneys and other body systems has taken place, the urethral obstruction can result in death.

Transmission or Cause:

The development of a urethral plug is found most commonly in the male cat. The plug usually is comprised of a mucoid matrix that gels with urinary tract cells, inflammatory cells, and crystals of minerals. The exact cause of the predisposing urinary tract disorder is not fully understood, but is a subject of investigation by veterinary researchers. Also, urethral obstructions can occur due to a stone blocking the flow of urine.

Treatment:

Treatment for a complete urinary obstruction, a life-threatening emergency, should be instituted immediately to prevent permanent damage. The examining veterinarian will have a high suspicion that the animal is obstructed from the history and physical exam. Diagnostic tests usually are postponed until the obstruction is relieved and the cat is stabilized.

Most cats will need to be heavily sedated or anesthetized to allow the veterinarian to correct the obstruction. One method of obstruction relief involves palpating the urethra in the attempt to dislodge any urethral plug that may be present. In most cases, a urinary catheter is inserted into the urethra and sterile saline is injected to flush material back into the bladder. The catheter is then inserted into the bladder to allow the urine to drain completely. In order to remove debris from the bladder and to soothe the irritated bladder lining, the veterinarian will flush out the bladder with cool, sterile saline until the fluid retrieved remains clear. The catheter is then sutured to the outside of the body and left in place for some time so that the bladder size will remain small. The veterinarian will determine when the urinary catheter should be removed.

There is a possibility that the cat will obstruct again soon after the catheter is removed. Thus, most cats with obstructions remain hospitalized to allow for close monitoring. The inability to control urination is considered a warning sign. Due to the amount of stretching that can occur when an animal is completely obstructed, the bladder may be incapable of contracting for some time. Medications can be administered to help this condition once the risk of re-obstructing has decreased.

In order to counteract the toxic effects of urinary tract obstruction, intravenous or subcutaneous fluid therapy will be given to the cat. Fluids help correct any dehydration and electrolyte abnormalities. For the cat that has been obstructed long enough to result in renal compromise, intravenous fluids are continued at

fairly high volumes for two to five days. Unfortunately, some patients suffer irreversible kidney damage due to a prolonged obstruction.

Other medications such as antibiotics are used as needed in cats with bacterial infections. If crystals or bladder stones are present, appropriate medications or diets will be recommended.

Surgery sometimes is required for animals that have certain types of bladder stones. A surgical procedure to enlarge the urethral opening at the outside of the body may be required for those cats with an obstruction that can not be relieved by other methods. This procedure also may be performed on cats that have recurrent obstructions despite appropriate medical therapy and preventive measures. This surgical procedure, called a perineal urethrostomy, requires that the cat be neutered to allow access to the urethra. The distal part of the penis is removed and the more expanded section of the urethra then is opened up and sutured to the surrounding skin. A perineal urethrostomy will decrease the likelihood of future obstruction but will not prevent the symptoms of cystitis or lower urinary tract disease that already may be present.

Prevention:

An attempt should be made to diagnose and prevent any potential causes of urethral plug or stone formation. For certain cats with urethral obstructions, prescription diets or medications may be recommended. Encouraging the cat to drink water more frequently may aid the bladder to flush out some of the debris. Some cats will drink more water if there is a source left running such as a dripping faucet or water fountain. Recurrence of obstruction may require surgical enlargement of the urethral opening.