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Non-obstructive Feline Lower Urinary Tract Disease

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It has been estimated that up to 1.5% of all cats in the United States suffer from a lower urinary tract disorder. One survey showed that up to 9% of cats taken to veterinarians in Japan also suffer from these problems. Cats can develop a number of problems related to the bladder and urethra. Commonly used terms are FUS (feline urologic syndrome) and FLUTD (feline lower urinary tract disease). The confusion over names reflects the confusing and changing nature of these problems in cats. As long as 70 years ago, signs of lower urinary tract disease in cats were commonly seen by veterinarians. Today, these remain some of the most challenging and frustrating problems in feline medicine.

A common term used in describing some of these conditions is cystitis, which means inflammation of the bladder. Urethritis means inflammation of the urethra, the tube leading from the bladder to void urine outside the body. There are several sub-types of identifiable problems associated with lower urinary tract disease in cats. They include: idiopathic cystitis (also sometimes called interstitial cystitis), bladder stones (uroliths): covered in a separate article, anatomical defects, behavioral abnormalities, urethritis, bacterial infections (bacterial cystitis) - neoplasia (tumors of the bladder), and crystalluria (presence of crystals in the urine).

Regardless of the cause, there are common symptoms that may be seen in cats with any lower urinary tract disease. They include: hematuria (blood in the urine), dysuria (difficulty passing urine), pollakiuria (increased frequency of urination), and urinating out of the litter box. While many of the conditions discussed in this article can also lead to partial or total urethral obstruction, the typical patient is presented without an obstruction. When a cat is presented to the veterinarian for possible lower urinary tract disease, the vet will first determine if a urinary obstruction exists by palpating the bladder. This article deals with non-obstructive cases, which are the most common type. (More information on urethral obstruction is provided in the article on Feline Bladder Stones and Urinary Obstructions.)

Evaluation of a cat with signs of lower urinary tract disease starts with taking the patient's history and a good physical examination. The bladder is palpated for thickness, fullness, and possible bladder stones. Since many cats urinate in inappropriate places in response to behavioral problems, one of the first tasks is to determine if a medical or behavioral problem exists. At the very least, a urinalysis is usually performed. In other cases, more tests must be done, such as blood tests, x-rays or ultrasound.

Urine samples are checked for the urine pH, presence of blood or infection, the specific gravity (a measure of concentration) and for crystals. Recent studies have found that

taking a cat outside its home for a trip, such as to the veterinarian, can lead to rapid changes in the urine pH. In some cases, therefore, your veterinarian may recommend ways to collect a urine sample at home before the cat is brought into the clinic.

Determining the significance of crystals in the urine of a cat can be problematic. It is known that many normal cats have small numbers of crystals in their urine. On the other hand, up to 50% of cats that have bladder stones may have no evidence of crystals at all on their urine test. Generally, only moderate to severe cases of crystalluria should be considered significant and treated. Such cases are usually of dietary origin, and identifying the type of crystal is necessary to pick the appropriate therapeutic diet. Common types of crystals in feline urine are struvite (magnesium ammonium phosphate) and calcium oxalate. These crystal types each require different types of dietary therapy. Feeding only canned diets to cats diagnosed with urinary crystals may help to reduce the risk of recurrence.

If the cause of the cat's symptoms has not been identified with a urinalysis, other testing may be recommended. A urine culture is used to check for bacterial infection, although this accounts for probably less than 2% of cases. Blood tests are done to check for diseases that can also influence the urinary tract, such as diabetes, hyperthyroidism and kidney failure. X-rays or ultrasound are used to identify bladder uroliths (stones), anatomic defects, or tumors.

Therapy of lower urinary tract disease is directed against the underlying factors discovered during testing. Significant crystalluria is treated by prescribing the appropriate therapeutic canned diet. If a positive bacterial culture has been found, antibiotics are prescribed on the basis of the sensitivity results. Anatomical defects may require surgical repair. Bladder tumors are uncommon in cats, and may require one of the various treatments used for cancers. Therapy for bladder uroliths is covered in a separate article. Various medications may also be used to decrease pain, to help the bladder contract effectively, or to decrease any irritation or spasms in the urethra.

Increasingly, many cats are found to have moderate to severe signs of lower urinary tract disease without having a readily identifiable cause. They typically have blood in their urine, but no bacterial infection. They do not have tumors, anatomical defects, or bladder stones. They have no other diseases causing their symptoms. The term interstitial cystitis, borrowed from human medicine, has been used to describe these cats. An alternate term is idiopathic cystitis. The only way to definitively confirm the diagnosis is by cystoscopic examination or biopsy of the bladder, so many cases are tentatively diagnosed after all other conditions have been ruled out.

Therapy of interstitial cystitis is currently evolving. Reduction of stress in the cat's environment is very important. Food and water stations, as well as the litter box, should be placed in quiet areas away from sources of noise such as appliances, fans, air ducts and away from other pets. These cats may prefer canned foods and clumping, unscented types of litter. When trying a new cat litter, it is important to add a second litter box with the new litter to ensure it is accepted before discontinuing the previous litter type. It can also be helpful to provide safe areas for these cats, such as secluded sleep areas. Increasing vertical space by using tall and sturdy cat trees can allow the cat to reach an area where it will be undisturbed.

A synthetic cat pheromone called Feliway® has been produced and is available commercially through veterinarians and pet stores. This product is able to exert a calming effect on some cats that may help reduce inappropriate elimination behaviors. In severe, recurrent cases, a drug called amitriptyline (Elavil®) may be prescribed by the veterinarian. This drug is used to decrease the pain associated with episodes of cystitis and to decrease the inflammation in the bladder lining. Side effects, such as sleepiness, retention of urine, bladder stone formation, weight gain, and reduced grooming, may be seen in some patients. However, amitriptyline has been prescribed for cats for many years and the overall rate of side effects appears to be small and the degree is usually mild. Most cats tolerate the medication well.

Corticosteroids, such as prednisone, are also sometimes used to decrease inflammation, and other types of drugs, such as pentosan polysulfate or glucosamine, are used to help repair the lining of the bladder. However, evidence for the effectiveness of these therapies is lacking. No matter what type of therapy is used, it is important to decrease any stress factors as much as possible. No one therapy to date has been found to help all cats, and we currently are only able to aim for control of the problem and not a cure. Hopefully, ongoing research and drug trials will provide some better therapies in the future.

For more information:
The Indoor Cat Initiative (Idiopathic/Interstitial Cystitis in Cats)
http://vet.osu.edu/indoorcat

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