

Canine Urolithiasis

Your pet has been diagnosed as having canine urolithiasis. This brochure is provided to help you learn about the disease and how to care for your pet at home.

CANINE UROLITHIASIS

Urolithiasis is a disease caused by the presence and effects of uroliths (stones) or calculi or excessive amounts of crystals in the urinary tract. The disease is referred to by many names, including cystitis, urethritis, urinary calculi, bladder stones, or kidney stones. As in humans, these stones and crystals can form anywhere in the urinary tract of the dog, including the kidney, urethra, or most commonly, the bladder. These crystals or stones irritate the lining of the urinary tract, causing changes in the lining, blood in the urine, and often pain. In some cases, the crystals or stones will block or partially block the flow of urine, making urination painful or impossible.

SIGNS OF CANINE UROLITHIASIS

A dog with urolithiasis will exhibit some or all of the following symptoms:

- Frequent urination (often in unusual places)
- Bloody urine
- Dribbling urine
- Straining
- Weakness
- Depression
- Loss of appetite
- Vomiting
- Pain

If your pet has any of these symptoms, you should contact your veterinarian immediately. In some cases without appropriate diagnosis and treatment, your dog could face a life-threatening situation. Stones can block the urine flow, prevent elimination of poisonous wastes and cause death. It is important to know that not every dog with canine urolithiasis exhibits all of these symptoms.

DEFINITION OF TERMS

Your veterinarian may use some terms in describing urolithiasis with which you are not familiar. These terms include cystitis, crystaluria, urolith, and urethral obstructions.

Cystitis is an inflammation of the urinary bladder. This condition occurs because of a bacterial or possibly a viral infection that results from the irritation caused by crystals and stones in the bladder. Cystitis may contribute to the formation of additional stones within the bladder.

Crystaluria denotes the presence of crystals in the urine. Crystals form when minerals bind together. The bound crystals are not as soluble as the unbound form and may result in mineral deposits, much like the deposits commonly found in a teapot or coffee maker.

When more and more of these crystals join together, they form a urinary stone or *urolith*. There are several different types of stones and each should be treated or prevented differently. It is important for your veterinarian to know what type of stone your dog has.

Urethral obstruction occurs when stones or an accumulation of crystals partially or completely block the tubes through which urine is excreted. This is very painful and is a medical emergency.

IMPORTANT FACTORS

There is no single cause of canine urolithiasis. Yet, there are a number of important factors. They are:

Age: Urolithiasis may appear in your dog when it is less than two months old, but most stones occur in dogs two to ten years of age.

Sex: Urolithiasis appears to occur with equal frequency in adults of both sexes. However, because the urethra of the male is longer and narrower than the female's, urethral obstruction is more common in males.

Breed: Small breeds, including the Welsh Corgi, Miniature Schnauzer, Pug, Lhasa Apso, Pekingese and Yorkshire Terrier are more commonly affected than are large breeds. The Beagle, Dachshund, Dalmation, Bulldog, Basset Hound, Cairn Terrier and Scottish Terrier are also susceptible.

Confinement and Exercise: Infrequent urination, as a result of confinement, lack of regular exercise or low water intake, contribute to the formation of crystals and uroliths.

Diet: High levels of some minerals in the diet, such as magnesium, phosphorous, and sometimes calcium, have been directly linked to canine urinary bladder stone formation. A diet with excess protein can also contribute to stone formation.

In most cases, stones are made up of only one type of crystal, but on occasion, different crystals may be mixed within the same stone. Each type of stone is affected by different nutrients and characteristics of the diet. Therefore, it is important to know what type of stone your dog has.

DIAGNOSIS OF CANINE UROLITHIASIS

If your veterinarian suspects your dog may have uroliths, he or she may perform some or all of these diagnostic tests:

1. Abdominal palpation (to feel stones present in the urinary bladder)
2. Urinalysis (to determine the types of crystals present)
3. Urine culture (with antibiotic sensitivity, to determine if bacteria are present in the urinary tract and the appropriate antibiotic with which to treat these bacteria)
4. Radiographic examination (possibly with contrast media, to see if stones are present and their location in the urinary tract)

To evaluate how well your pet is responding to therapy, your veterinarian may periodically repeat some of these tests. Therefore, you will need to bring your pet in for rechecks as directed by your veterinarian.

TREATMENT/MANAGEMENT

If the urinary tract is blocked, your veterinarian will have to correct the blockage and empty the dog's urinary bladder. Then, your dog will be further examined to determine the stone type and appropriate therapy. Your pet may need to stay at the hospital during this process.

In the past, urinary bladder stones have been surgically removed and for some stones, surgery may be the only effective treatment. But for most stones, there is an alternative. In most cases, stones may be dissolved by feeding a special diet with reduced amounts of certain minerals and protein, or a special diet plus medication. If an infection is present, antibiotics are also necessary.

Special diets work by reducing the mineral building blocks or urinary stones in the urine. These diets affect the urine pH and increase urination to help flush the urinary tract.

If your veterinarian recommends dissolving the stones by feeding a Prescription Diet dietary pet food, the signs associated with urinary bladder stones (discomfort and bloody urine, for example) are usually gone within seven to ten days or less. To completely dissolve the stones takes 4-16 weeks, depending on the size and number of stones present. During this time it is very important that your dog consume nothing besides the prescribed medications and prescribed diet: Prescription Diet Canine s/d for struvite stones and Prescription Diet Canine u/d for other stones. Otherwise, the diet will not work properly and your pet will be plagued with this condition longer than necessary. Follow your veterinarian's directions when feeding the prescribed food, whether for treatment or prevention. Although these foods may not look like your typical dog food, most dogs readily eat these diets and find them palatable. If your dog is one of the few that doesn't readily accept a new diet after two days, you may want to try the following:

- Warm the canned diet to, but not above, body temperature.
- Hand feed the new diet for the first few days.
- Mix the dry diet with a little warm water and wait 10 minutes before serving.
- Over a 7-10 day period, mix the diet with your pet's former food, gradually increasing the proportions until only the new diet is being fed.

Feed only the prescribed diet!!

Do not feed meat, liver or other animal tissue, vitamin/mineral supplements, calcium supplements, breakfast cereals or vegetables.

Be patient, but firm with your dog. This is important. The success or failure of treatment depends to a large degree on strict adherence to the new diet.

If a bacterial infection is present you may need to keep your dog on antibiotics during this entire period.

HOME MANAGEMENT

Once at home, your pet needs special attention and care. It is important that you provide free access to fresh, clean water. Follow your veterinarian's instructions for care and activity if your dog's stones were removed surgically. This will include monitoring the incision and returning to your veterinarian for rechecks.

Follow instructions carefully if your dog has a prescribed medication. Antibiotics should be given for the entire period for which they are prescribed.

During and immediately following the dissolution process, your veterinarian may ask you to monitor your dog's urine pH at home or to bring in a urine sample for follow-up urinalysis.

Call your veterinarian if any questions or problems arise. Watch your pet for bloody urine, straining, urinating in unusual places, excessive licking of the vaginal or penile areas, vomiting, diarrhea, lack of appetite, or depression. If any of these signs occur, please contact your veterinarian.

DIET AND PREVENTION

Of all dogs treated for urolithiasis, 20-50% will have recurrence of the problem and accompanying pain if preventive measures are not taken. Fortunately, just as there is a dietary alternative to surgery, certain diets can also be used to aid in the prevention of stone formation. Based on the type of stone your pet had, your veterinarian can prescribe the correct diet to aid the prevention. For example, Prescription Diet Canine c/d is used to help prevent struvite stones and Prescription Diet Canine u/d is used to aid in the prevention of other stone types. These diets are excellent long-term diets for the adult non-reproducing dog and provide the highest quality nutrition for your dog's health maintenance. Although these diets may cost slightly more than grocery store brands, when you consider the medical benefits derived from these diets you may be saving money. Remember, "An ounce of prevention is worth a pound of cure."

SPECIAL HOME CARE INSTRUCTIONS FOR YOUR PET
