



Bladder Stones

Diagnostic Plan

History
 Physical examination
 Palpation of the urethra and urinary bladder
 Urinalysis
 Urine cultures
 Blood work
 X-rays of the urinary tract
 Quantitative analysis of passed bladder stones
 Ultrasound

Therapeutic Plan*

Fluid therapy
 Antibacterials
 Urease inhibitors
 Xanthine oxidase inhibitors
 Urine alkalizers
 Thiol-containing drugs
 Surgery

*Determined by stone type

Nutritional Plan

For dissolution, the proper calculolytic food
 To aid in prevention or recurrence, a food that allows the body to produce the appropriate urine pH and avoids excesses of the urolith's precursors
 If surgery is necessary, nutrition adequate for tissue repair

Bladder Stones

Your pet has bladder stones. Bladder stones and the crystals that form them can irritate the lining of the urinary tract causing blood in the urine, pain and partial or complete obstruction of urine flow. Most bladder stones can be dissolved with special foods or special foods and medications. Some pets may require surgery to remove the stones. This client education sheet will help you learn more about bladder stones and will review your veterinarian's instructions for your pet's care at home, as well as follow-up with the veterinary health care team.

What You Should Know About Bladder Stones

Bacterial infections of the bladder and foods containing high levels of protein and minerals such as magnesium, phosphorus, and calcium have been linked to bladder stone formation. Minerals form crystals, and crystals join together to form uroliths, or stones. Some dogs are born with an inability to metabolize certain protein components and are susceptible to bladder stone formation because of this defect.

Diagnosis

If your veterinarian suspects that your pet has uroliths, he or she may perform some or all of the following diagnostic tests; palpation (examination by touching) of the urethra and bladder to feel stones, urinalysis, urine culture, blood tests, X-rays to see if stones are present, ultrasound to see if stones are present and special X-rays using dyes that show bladder stones that do not appear on routine X-rays. If possible, your veterinarian will analyze any uroliths your pet may have passed in the urine so he or she can prescribe appropriate therapy.

Treatment and Home Care

For some stones (calcium oxalate and those lodged in the urethra), surgery may be the only effective treatment. But today, many stones may be dissolved by feeding a special food with reduced amounts of minerals and proteins or a special food plus medication. If a bladder infection is present, antibiotics are also necessary. Your veterinarian will monitor your pet's progress with X-rays and urinalyses to verify the bladder stones are dissolving.

Home care consists of making sure your pet is urinating properly and watching for signs of reobstruction. You should also provide access to fresh, clean water, make sure each cat in the household has its own clean litter box and give all

prescribed medications. Be sure to follow your veterinarian's instructions for care and activity restriction if surgery was performed and return to the hospital for all scheduled follow-up lab tests and X-rays and suture removal.

Nutritional Plan

If your pet has bladder stones, your veterinarian may recommend a special food to dissolve the stones. These foods work by reducing the minerals or building blocks that make up bladder stones. They also affect the urine pH and increase urination to help flush the urinary tract. Most stones are dissolved in 4 to 16 weeks, depending on their size and number. Up to 50% of all pets with bladder stones have a recurrence of the problem unless the risks for bladder stone formation are managed as described below. Not all types of stones can be dissolved with diet, so your veterinarian may recommend surgery to remove the stones.

Struvite Uroliths

Struvite uroliths and crystals are dissolved with Hill's® Prescription Diet® s/d® Canine and s/d® Feline Dissolution pet foods. After the stones are dissolved, Prescription Diet® c/d® Canine Urinary Tract Health and Prescription Diet® c/d® Feline Bladder Health pet foods will aid in managing the nutritional risks that contribute to struvite stone formation.

Ammonium Urate Uroliths

These uroliths sometimes can be dissolved with drugs and Hill's® Prescription Diet® u/d® Canine Non-Struvite Urinary Tract Health pet food. The same formula will aid in managing the nutritional risks that contribute to their recurrence.

Calcium Oxalate Uroliths

Surgery is the most effective means of removing these uroliths. Hill's® Prescription Diet® c/d® Canine Urinary Tract Health and Prescription Diet® c/d® Feline Bladder Health pet foods will aid in managing the nutritional risks that contribute to the recurrence of calcium oxalate uroliths.

Cystine Uroliths

Cystine uroliths may be dissolved by feeding Hill's® Prescription Diet® u/d® Canine Non-Struvite Urinary Tract Health dog food and giving certain drugs. Prescription Diet® u/d® Canine Non-Struvite Urinary Tract Health dog food also aids in managing the nutritional risks that contribute to the recurrence of cystine uroliths.

Transitioning Food

Unless recommended otherwise by your veterinarian, gradually introduce any new food over a seven-day period. Mix the new food with your pet's former food, gradually increasing its proportion until only the new food is fed.

If your pet is one of the few that doesn't readily accept a new food, try warming the canned food to body temperature, hand feeding for the first few days, or mixing the dry food with warm water (wait ten minutes before serving). Feed only the recommended food. Don't feed additional salt or any snacks that may contain sodium. Be patient but firm with your pet. This is important because the success or failure of treatment depends to a large degree on strict adherence to the new food.

Presented as an educational service by



Home Care Instructions

Client's Name: _____

Patient's Name: _____

Medication(s): _____

Nutritional Recommendation: _____

Follow-Up Appointment: _____

(Hospital Stamp Area Above)

REGULAR VISITS WILL HELP OUR VETERINARY HEALTH CARE TEAM PROVIDE FOR YOUR PET'S BEST INTEREST.