



Navarro Small Animal Clinic

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Bladder Stones in Dogs & Cats

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Dogs, like people, can develop a variety of bladder stones. These stones are rock-like structures that are formed by minerals. Some stones form in alkaline urine, whereas others form when the urine is more acidic. Bladder stones are very common in dogs, particularly small breed dogs.

The most common signs that a dog or cat has bladder stones include blood in the urine, and straining to urinate. Blood is seen due to the stones bouncing around and hitting the bladder wall. This can irritate and damage the tissue and can cause cystitis (inflammation of the bladder). Straining to urinate occurs because of the inflammation and irritation of the bladder walls or urethra or muscle spasms. The stone itself can actually obstruct the flow of urine if it blocks the urethra. Small stones can get stuck in the urethra and cause a complete obstruction. This can be life threatening if the obstruction is not relieved since the bladder can rupture as more urine is produced with nowhere to go.

Bladder stones form because of changes in the urine pH. Normal dog urine is slightly acidic and contains waste products such as dissolved minerals and enzymes such as urease. Urease breaks down excess ammonia in urine. An overload of ammonia in urine can cause bladder inflammation and thickening known as cystitis. There are a variety of stones that can form in the bladder, some that form in acidic urine, while others form in alkaline urine. The two most commonly found stone types are struvite and oxalate. Struvite stones are formed when the urine pH increases and becomes alkaline. Calcium oxalate stones form when the urine pH decreases, causing more acidic urine.

Bladder stones may be diagnosed on physical exam when your veterinarian is performing abdominal palpation. In some cases the bladder is too painful or the stones are too small to be felt. Diagnostics such as radiographs and ultrasound can then be used to find bladder stones. Treatment of bladder stones is dependent on the type of stone found. There are several options, including diet change, surgical removal, and non-surgical removal. Diet changes can be made to adjust the urine pH, which can help to dissolve stones and/or prevent new stone formation. Typically antibiotic therapy is needed while the stones are being dissolved. Non-surgical removal includes placing a catheter into the bladder and flushing the stones out. This is only successful with very small stones and typically requires sedation or general anesthesia. Surgical removal is indicated when large stones are present, a large number of stones, or when dietary treatment is not successful.

Prevention of bladder stone formation will begin with the diagnosis of the specific type of stone your dog has and then include treatment with a therapeutic diet for life. Frequent testing may be needed to assess your pet's urine pH, as well as biannual x-rays or ultrasounds to detect early stone formation.

If you have any concerns regarding your pet's bladder health, consult your veterinarian for a check-up.