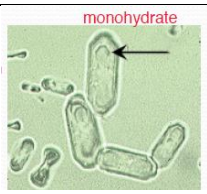
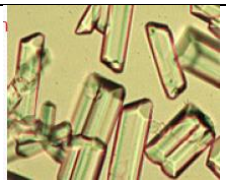
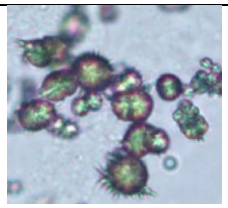
Bladder Stones in Dogs

Bladder stones, also known as **uroliths** or **cystic calculi** are mineralized compounds that are rock-like that form within the bladder. They range in size and numbers, from gritty sand/sludge, but can grow as large as 50 cent coins. These stones can develop due to disease (such as a bacterial infection) or inflammation of the bladder.

Signs observed in the dog can be incontinence, attempting to urinate without producing much urine, dysuria (straining to urinate), hematuria (blood in the urine), and licking around the genitalia. The stones can also cause an obstruction, which if not treated can ultimately lead to bladder rupture and is a surgical emergency.

TYPES OF STONES

Bladder stones can develop within weeks to months, depending on the degree of infection or compound present. Depending on the condition and even breed, there are different kinds of stones identified by viewing urine under the microscope:

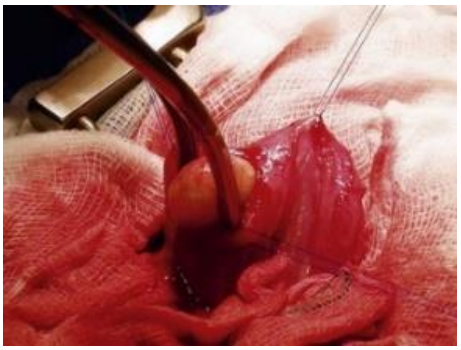
 Calcium Oxalate (Most common)	 Struvite (Females more prone)	 Urate (Dalmatian predisposed or liver disease)	Cystine (Relatively rare)

Most bladder stones can be visualized on radiographs (image) or with an ultrasound. However, some bladder stones are radiolucent, meaning they cannot be seen on regular radiographs without the addition of dye/contrast to visualize them. Stones, if large enough, can also be carefully palpated, but usually can only be done with sedation due to the pain/irritation caused.

Struvite stones in a dog

TREATMENT AND PREVENTION

Treatment choices are dependent on the dog and the type of stone:



- Surgical removal (**cystotomy –** image) is a procedure where the bladder is opened to remove the stones. Although this is the quickest method of treatment, there are anesthetic/surgical risks that need to be considered prior to surgery.
- Non-surgical removal (**urohydropulsion)** can be done if the stones are very small, where a special catheter is passed into the bladder to flush the stones. General anesthesia or heavy sedation is needed, and also requires a cystoscope, which some hospitals may not have access to.
- Dietary dissolution can be done only in some cases, where feeding a special diet can help dissolve the stones. However, it may take weeks to months to dissolve larger stones, and dogs must exclusively eat the diet which can be difficult.

Bladder stones can reoccur. Depending on the stone, treatment of predisposing causes, dietary changes, and early recognition of clinical signs through routine urine tests can help slow down or prevent the development of stones.

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