

CRYSTALLURIA

Pet: Simon* a 5-year-old male ragdoll cat







SIMON'S STORY:

Simon was normally a laid-back, no-fuss cat. When he started going in and out of the litter box one morning, straining and crying, his family knew something was wrong. At first, his family members suspected that Simon was constipated but they soon realized he was only passing small dribbles of urine.

Simon was taken to a local emergency veterinarian, where urethral obstruction was diagnosed. His bladder was full, firm and painful and his bloodwork showed signs of stress and mild electrolyte abnormalities. While an abdominal ultrasound showed a large amount of dense, sand-like sediment in the bladder and possible bladder stones.

ABOUT THE CONDITION: URINARY CRYSTALS AND STONES

Under ideal chemical conditions, all of the salts, minerals, and metabolites that are excreted in the urine remain dissolved in liquid, so they can be easily and painlessly eliminated from the body. Unfortunately, when metabolic, inflammatory, or dietary illnesses occur, the chemistry of the urine can change. Under these conditions, minerals and other compounds can precipitate (come out of solution) forming crystals and even stones within the bladder.

The lower urinary tract includes the bladder and urethra. In cats, inflammation in this region combined with dietary excesses of certain minerals can lead to the formation of crystals and stones. Additionally, liver conditions, some drugs and even some cancers can change the urine chemistry and lead to crystal formation. Crystals and stones are abrasive: they slosh around within the urine, causing spasms, damage, pain and inflammation on the internal surfaces of the lower urinary tract. Stones and inflammatory secretions can even form plugs that obstruct urinary flow out of the body – a potentially deadly surgical condition known as urethral obstruction.

Microscopic and chemical analysis of urinary stones and crystals can help to identify the type of crystals present. This information helps veterinarians to develop a plan to treat and even prevent future urinary crystals.

TREATMENT

Simon was given a sedative, pain control and IV fluid therapy to address his hydration and electrolyte abnormalities. Once he was stable, he was anesthetized and his urethral obstruction was relieved using a urinary catheter and some hydropulsion



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(moderate-pressure flushing). Urine was collected for analysis, revealing abundant struvite crystals and inflammatory cells. Simon's bladder was fully emptied and flushed several times with sterile saline to try to remove all of the crystals.

Since ultrasound imaging revealed persistent heavy sediment in the bladder, a concern for bladder stones was still present. As a caution, a cystotomy procedure was performed. In this procedure, the bladder is entered surgically so any remaining grit and stones can be visualized and removed.

Simon recovered well from his surgery. He remained on IV fluids for a further 24 hours to help his kidneys catch up after the period of urethral obstruction. His urinary catheter was also maintained in place so any remaining grit could pass easily while urinary inflammation and spasms had a chance to subside.

When Simon was ready, he was discharged to his relieved family with pain medication, muscle relaxants, antibiotics, and strict instructions to stay on a urinary diet long-term. Urinary prescription diets promote an acidic urine pH and have low levels of crystal-forming minerals. They can dissolve some crystals and stones (including struvite) and prevent the formation of new ones. Urinary crystals and urethral obstruction have a high risk of re-occurring without proper management and close monitoring. Simon's owners will have to keep a watchful eye on his urination habits and urinary comfort from now on.

CLAIM OUTCOME

Pets Plus Us pack member Simon is doing well after his painful urethral obstruction. He is expected to remain crystal-free with ongoing dietary management.

He needed more than \$5,176.47 in veterinary care at the emergency hospital.

His family was reimbursed, \$4,214.60** through their Pets Plus Us Accident and Illness More plan.

We wish you a comfortable holiday, Simon!



^{*}Name changed for privacy

^{**}Source: 2022 PTZ Insurance claims data. Value of claims in \$ CAD.