

CLINICAL ASPECTS OF BLADDER UROLITHIASIS IN A FELINE - CASE REPORT

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INTRODUCTION

In the small animal clinic there is a high incidence of urinary tract disorders, and this system is affected by different types of pathologies. Among the main diseases of the lower urinary tract, urolithiasis stands out in feline clinics (LAZZAROTTO, 2001).

Feline urolithiasis has the presence of urolithiasis that can be found throughout almost the entire urinary tract, with more incidence in the lower tract (bladder and urethra). The most common uroliths are those of struvites or calcium oxalate (Jericó, 2015). Since the formation of uroliths may also be mainly related to the dietary factor, and a more deregulated diet makes the formation of urolith crystals more common.

When dehydration occurs, there is an increase in the release of minerals through the urine, which causes it to become supersaturated. Thus, the objective of this study was to report the case of a feline diagnosed with bladder calculus. struvite, where a surgical treatment was performed to remove the calculus.

MATERIALS AND METHODS

In the present report, a 1.5-year-old feline, female, SRD, was attended at the veterinary medicine clinic of Campos São Lucas Ji-paraná with a history of pollakiuria, hematuria, for 1 month, the physical examination revealed rectal temperature of 38.2 °C, pain on abdominal palpation, moderate urinary bladder dehydration with low distension on palpation and thickened wall, presence of non-palpable urolith.

The animal underwent fluid therapy to correct dehydration and uremia, antibiotic therapy based on amoxicillin 250mg/50ml + clavulanic acid was started, after 7 days of treatment the animal showed an improvement in the physical and clinical condition. Vesical urolith with elliptical shape measuring 10.5mm X 3.7mm the animal was referred for

surgery for its removal.

RESULTS AND DISCUSSIONS

The formation of uroliths is influenced by the urinary pH, the animal's diet and genetic predisposition, it occurs due to the precipitation of crystals in supersaturated urine (RICK, et al 2017), they are classified into simple, compound and mixed, as well as by their mineral composition such as struvite, calcium oxalate, urate and cystine (JERICÓ, et al. 2015).

The progressive decrease in the incidence of calcium oxalate uroliths in the last five years can be associated with the reformulation of maintenance diets for adult cats, which minimizes calcium oxalate crystalluria, the improvement in the formulation of therapeutic diets and the increased use of same.

The diagnosis made was based on clinical history, physical examination, and complementary tests, as described by (Grauer 2015). The diagnosis of urolithiasis is based on the animal's history, laboratory tests, and imaging tests such as the abdominal ultrasound and radiography are important in an attempt to elucidate the diagnosis (Bartges & Callens, 2015).

X-rays are used in cases of suspected urolithiasis, and ultrasonography is used to assess the bladder lumen, clots, masses, cystic calculi, etc. Contrast-enhanced cystography can also be used, mainly to detect radiolucent stones, neoplastic diseases, suspected bladder rupture, congenital abnormalities, bladder diverticula, etc. (FORRESTER 2015; LITTLE, 2016).

Simple abdominal radiographs are often sufficient to make the diagnosis. When uroliths are very small or non-radiopaque, the diagnosis can be made through double contrast cystography or abdominal ultrasonography.

Complementary exams are necessary to aid the diagnosis and can, and therefore,

perform the differential diagnosis between urolithiasis and other diseases such as urinary tract infections, clots, inflammatory polyps, granulomatous inflammations, neoplasms and urogenital abnormalities. An increase in protein can also be evidenced, due to neurogenic inflammation of the bladder mucosa, which will lead to an extravasation of plasma protein and subsequently an increase in urinary pH.

Consequently, this fact induces the formation of struvite crystals. However, despite the vesical tenesmus, the patient was able to eliminate a small amount of urine, but he had azotemia that could be justified by the partial obstruction of the urinary flow, causing accumulation of these metabolites in the bloodstream.

The patient remained on fluid therapy, because fluid therapy is the most important component of therapy for animals with postrenal azotemia, restoring urinary flow along with appropriate fluid therapy may resolve hyperkalemia, azotemia, and metabolic acidosis for most patients (Hostutler et al., 2005). Furthermore, monocytes and increased total protein associated with decreased renal function were observed, indicating the existence of a probable chronic inflammatory process in the urinary tract.

There are several risk factors for the development of urolithiasis and, for this reason, the treatment and prevention of the problem is a challenge. For urinary obstructions, clinical treatment cannot be used (HAWTHORNE & MARKWELL, 2004).

Surgical treatment is therefore a procedure for immediate removal of uroliths. Urinary stones present in large quantities or of considerable size are removed more quickly through surgery. Diet is essential in the management of urolithiasis.

It is used for the dissolution of struvite stones and as an associated treatment for

the dissolution of urate and cystine stones. It can also be used to reduce recurrences of calculations of any composition (BARTGES, 2016).

Bladder stones cause irritation of the bladder wall resulting in hematuria, pollakiuria, stranguria and dysuria, these signs can be observed in other urinary tract disorders. Clinical manifestations vary according to the location of the urolith, presence of partial or complete obstruction and complications due to infections, but usually they are pollakiuria, hematuria, dysuria and periuria (FERRAZ et al. 2020).

On physical examination, urocystoliths can be palpated in 20% of affected cats and dogs and in some cases it is possible to feel the thickened bladder wall (BARTGES, 2016). Small bladder stones can reach the urethra and cause partial or total obstruction, especially in males (GRAUER, 2015). In the present case, the urinary bladder had low repletion at the time of the evaluation, the aspect of the calculus resulted in greater pain, as it is a female, the risks of urethral obstructions are lower.



Figure 1- Removal of bladder urolith.

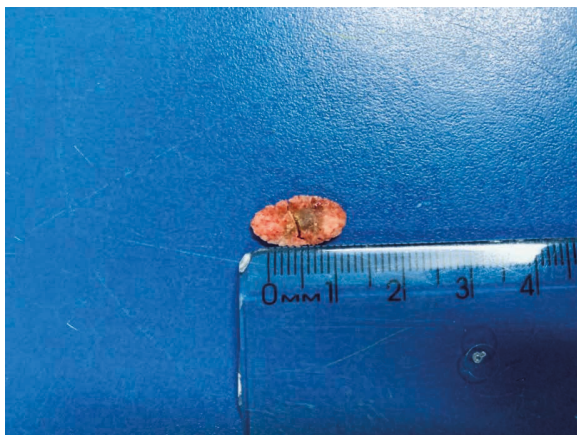


Figure 2-Removed bladder urolith.

FINAL CONSIDERATIONS

Based on this report, it is concluded that in some cases it is necessary to opt for the surgical procedure, since the bladder stones were causing irritation in the gallbladder wall that would possibly result in hematuria and because it was a female. But we also cannot rule out therapeutic use in other cases.

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