

SOLITARY CYSTIC CALCULUS IN A FEMALE DOG

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Urolithiasis is a worldwide medical and surgical issue in dogs (Jones *et al.*, 2001). Bladder stones (cystoliths, cystic calculi) are physical aggregations of minerals and other substances in the bladder. They may rub and irritate the lining of the bladder, increase the risk of bladder infection, or lodge in the urethra. Survey and contrast radiography are frequently utilized for diagnostic evaluation of the urinary system. Incidences of cystic calculi are recorded in both sexes but cases are less frequently reported in females. Present communication puts on recorded a case of cystic calculi in a female dog.

A thirteen year old terrier female dog weighing about 9 kgs presented to the Veterinary College Hospital, Hebbal, Bangalore with a history of dysuria, intermittent fever and anorexia for four days and also recent episodes of haematuria. The animal was alert and on abdominal palpation a hard, big lemon sized mass was felt at caudal abdomen. On survey radiography abdomen and pneumocystogram a single large Cystolith was diagnosed in the bladder (Fig. 1 and 2). It was decided to perform Cystotomy for surgical removal of the calculus.

Clinical history and observation



Fig.1: Survey radiograph showing single large calculi in the bladder Fig. 2: Showing solitary calculi in bladder lumen

Surgical procedure

The ventral midline was prepared aseptically for surgery after premedication with atropine sulphate 0.04 mg / kg body weight subcutaneously and Pentazocine HCl 1mg/kg is given intramuscularly. As a preanesthetic, Diazepam 0.5 mg / kg body weight was given intravenously. After 10 minutes, induction and maintained with 5%

and 2% of isoflurane inhalation anesthesia respectively. A caudal midline incision was made to enter into the abdomen after incising the linea alba. The bladder was exteriorised out through the incision. An incision was made on the dorsal side of the bladder to explore the content in the lumen. On exploration, a large single cystic calculi was found and removed (Fig. 3). The bladder was

closed by cushing's followed by lambert's suture pattern. Then abdomen was closed by polyglactine 910 in simple interrupted pattern. The surgical wound was closed in a standard manner. The wound was dressed and bandaged.

Post-operatively, Ceftriaxone at a dose rate of 20 mg/kg body weight was administered intravenously for 5 days. Meloxicam at a dose rate of 0.3 mg/kg body weight was administered daily once for three days subcutaneously. Skin sutures were removed on 10th post-operative day.

Results and discussion

Postoperatively animal's recovery was excellent. The most common type of urolith found in a study was magnesium ammonium phosphate hexahydrate (50%) followed by calcium oxalate monohydrate (30%), calcium oxalate dihydrate (10%) and uric acid (10%) Fromsa *et al.*, (2011). Struvite stones (magnesium ammonium phosphate hexahydrate – MgNH₄PO₄·6H₂O) are mostly white to light yellow. They present as multiple stones or large single stones predominantly in the bladder. Struvite stones are radiopaque and can be clearly seen on survey radiographs and are round with a smooth surface, often multiple but sometimes solitary and very large. In the present case the cystolith was solitary, oval in shape, light yellow colour, size (6x5 and 5 x4 cms respectively) and weighting 64 gms (Fig. 4). With all these information the physical character of the cystolith it may be struvite cystolith in the present case. In dogs, struvite stones are commonly a consequence of

urinary tract infection (UTI) with bacteria that produce urease. This bacterial enzyme is responsible for over-production of urine ammonia and subsequent urine alkalization. Female dogs (85%) are over represented presumably because they are at greater risk for urinary tract infection (Osborne *et al.*, 2010). Some veterinarians prefer to remove uroliths surgically due to the perception that surgical management is more effective, less expensive, alleviates clinical signs quicker, and will not be associated with urethral obstruction that could occur as uroliths decrease in size with medical dissolution (Bartges *et al.*, 1992).

Therefore in the present case surgical removal was undertaken, which led to successful management.

References

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