SURGICAL MANAGEMENT OF MULTIPLE CYSTOLITHS IN FEMALE DOGS- REPORT OF FOUR CASES

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Four numbers of female dogs were presented during a period of one year with primary complaint of dribbling of urine, dysuria and haematuria. After radiographic and ultrasonographic examination, cystoliths of varying size were confirmed. Following cystotomy, the caliculi were removed surgically. All the animals recovered eventually.

Keywords: Cystolith, cystotomy, Dog, Urolithiasis.

Uroliths are accumulation of crystalline and occasionally non-crystalline solid substances that form in one or more locations within the urinary tract (Reddy, 2017). Uroliths that develop in the bladder are called cystoliths. When urine becomes oversaturated with lithogenic substances, uroliths may be formed and these can interfere with voiding of urine, occasionally leading to bladder rupture causing uroabdomen, particularly in male animals (Dehmiwal *et al*., 2016). Surgical removal is considered as the most effective treatment of canine urolithiasis where the medical dissolution of calculus is not possible (Saharan *et al*., 2018). In this study, surgical management of multiple cystoliths was reported in four female dogs.

Case history

Female dogs of different age, breed and bodyweight were presented to the Department of Veterinary Surgery and Radiology, College of Veterinary Science and Animal Husbanry, Odisha University of Agriculture and Technology, Bhubaneswar, during a period of one year with complaint of dribbling of urine, dysuria, haematuria, abdominal pain, tenesmus, imbalance in gait, restlessness with anxious look. Routine physical and haemato-biochemical tests were conducted. After radiographic and ultrasonographic examination, diagnosis of cystolithiasis was made (Fig. 1). It was planned for surgical removal by cystotomy.

Surgical Treatment

After fasting of 12 hours the animal was premedicated with inj. Glycopyrrolate 0.01 mg/kg bwt, inj. Butorphanol 0.2 mg/kg bwt intramuscularly (IM). Then the animal was sedated with dexmedetomidine 5mcg/ kg bwt intravenously (IV). Anaesthetic induction was done with Inj Propofol 4 mg/kg bwt IV and anaesthesia was maintained with 1.5 % isoflurane. The animal was prepared for surgery following standard procedure. Midventral incision of 3-4 inches was made over the skin one inch caudal to the umbilicus. Linea alba was incised and abdominal cavity was approached. Urinary bladder was squeezed to evacuate urine and brought to the incision site. Incision in the urinary bladder was done over the dorsal roof of the urinary bladder. Lumen was searched for calculi and several numbers of large calculi were removed (Fig. 2). A sterile artificial insemination sheath lubricated with lignocaine gelly was inserted into the urethra and normal saline was pushed in to the

urinary bladder through the sheath to flush out small calculi. A sterile gauge was introduced in to the lumen of urinary bladder to retrieve small calculi. Repeated flushing and retrieval were done till complete removal of the calculi. Bladder wall was sutured using chromic catgut no. 1 to 1-0 using cushing pattern. The abdominal muscles were closed using polyglactin-910 (Vicryl) no 1 to 1-0 depending upon the size of the animal using simple continuous pattern. Skin was apposed using polyamide suture (Trulon) no. 2 to 1-0 by simple interrupted pattern. The incision site was applied with povidone iodine solutions, then mupirocin ointment. Post operatively, the animals were administered with Inj. Ceftriaxone sodium + tazobactum 25 mg per kg bodyweight, Inj. Enrofloxacin 5 mg per kg body weight for 7 days and Inj. Meloxicam 0.2 mg per kg body weight for 3 days. Regular dressing was done. Sutures were removed on 10-12th post-operative day..

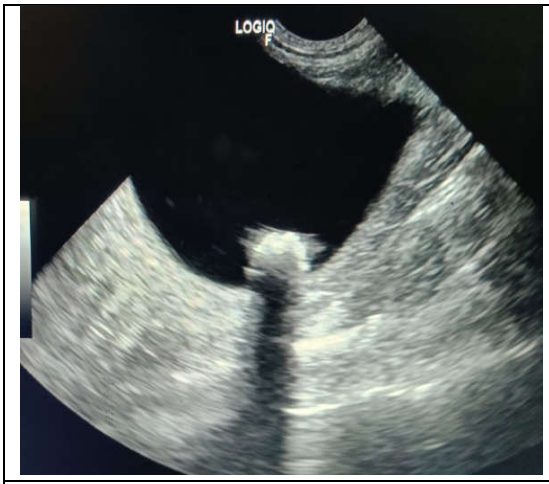

Fig.1-USG image of Cystolith

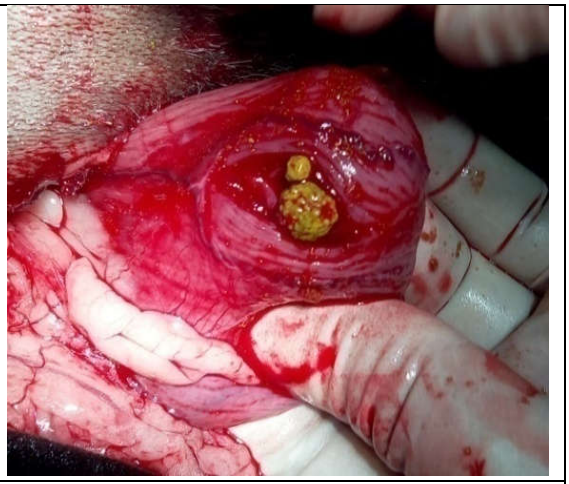

Fig.2-Intraoperative image during cystotomy

Results and Discussion

The removed calculi were subjected to chemical analysis. The caliculi, were found to be composed of calcium oxalate monohydrate and calcium oxalate dehydrate, struvite and urate These findings were in accordance with the observations of Parvathamma *et al*. (2017), Parvathamma *et al*. (2020) and Konwar *et al*. (2017). Initially for two to three days post surgery, haematuria was noticed which resolved successfully and normal passage of urine was noted after few days of surgery. The dogs were followed up for 6-8 months and no complication was found.

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