

SURGICAL MANAGEMENT OF CYSTIC CALCULI IN A FEMALE DOG

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Abstract: A 10-year-old female Pomeranian dog was presented with a history of dysuria, haematuria and inappetence since 10 days. Based on history, physical examination and radiography, it was confirmed as a case of cystolith. Cystotomy was performed to retrieve the multiple cystoliths and further medicinal management. Animal recovered uneventfully. No recurrence was observed up to 5 months postoperatively.

Keywords: Haematuria, Cystolith, Cystotomy.

Introduction

Urolithiasis is a general term referring to the causes and effects of stones anywhere in the urinary tract, causing urinary tract disease demanding rapid definitive diagnosis for immediate surgical and/or medical interventions (Osborne *et al.*, 1986). Clinical signs of urinary tract infection (i.e. hematuria, pollakiuria, and stranguria) are common in dogs with cystic or urethral calculi (Dinesh *et al.*, 2016). Survey abdominal radiographs or ultrasonography is indicated with urolithiasis for confirmative diagnosis. Medical dissolution of calculi is impossible, if the urolith size is bigger enough to obstruct the urine flow and surgical removal is necessary (Yadav *et al.*, 2011). Definitive therapeutic management of urolithiasis should be directed at early confirmation and effective interventions including, surgical therapy, post-operative medications, medical dissolution and urinary pH modulation in conjunction with dietary modifications and therapeutic diets (Koehler *et al.* 2008).

History and Clinical signs:

A 10 year old female Pomeranian dog was presented to State Institute of Animal Health, Tanuku with the history of haematuria, anorexia, dehydration and abdominal pain. Anamnesis revealed that the animal had hematuria for the last 10 days. Upon clinical

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examination the dog was found dull, depressed and dehydrated. On survey radiography, multiple small rounded radiopaque structures were observed in the urinary bladder (Fig. 1).

Surgical Treatment:

After confirmation of the calculi in urinary bladder, the dog was operated for Cystolithectomy. The surgical procedure was done under induction with xylazine (@1mg/kg) and ketamine (@10mg/kg) intramuscularly and maintenance with propofol (@4mg/kg). The operative site was prepared aseptically. The animal was restrained in dorsal recumbency and laparotomy was performed through a mid-ventral approach and urinary bladder was exteriorized. An incision was made on dorsal surface of the bladder, away from the urethra. Cystoliths were removed (Fig. 2) and, the urinary bladder and urethra was flushed with normal saline. The bladder was closed by Cushing followed by a Lembert suture pattern with polyglactin 910 (No 2-0). The subcutaneous tissue and skin were closed following the standard procedure (Fig. 3). Postoperatively, intramuscular administration of ceftriaxone and tazobactam (Intacef Tazo) (15mg/kg BW) and meloxicam (0.2mg/kg BW) were advised for 5 days along with Cystone tablets (2 tablets bid) for 3 weeks. Daily wound dressing was done. Skin sutures were removed on the 12th postoperative day. The animal made uneventful recovery

Discussion

Urolithiasis is considered a surgical emergency as they may complicate with cystorrhesis and uroabdomen when urine is retained for more than 32 to 48 hours. The factors influencing development of canine urolithiasis and its characteristics are age, sex, etiological factors such as metabolic disorders, ionic transport within the intestinal tract and in the kidney, diet including fluid intake, geographical location and climate (Osborne *et al.*, 2009). The severity of clinical signs depends on the duration of obstruction and whether the obstruction is complete or partial. Following surgical intervention, proper general and dietary management should be also considered for the prevention of recurrent urolithiasis formation in dogs (Uma *et al.*, 2018). Dogs must be fed diets that lower urinary phosphate and magnesium and maintain acidic urine. Cystolithectomy to remove the calculus is recommended for large calculus in female which cannot be dissolved by medical management.

Conclusion

Timely diagnosis and aggressive therapeutic interventions are mandatory with urogenital emergencies as it may progress to life threatening complications if not addressed immediately. Urogenital emergencies have fair to good prognosis with early confirmation and

effective interventions including, surgical therapy, post-operative medications, medical dissolution and urinary pH modulation in conjunction with dietary modifications and therapeutic diets.

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Fig.1: Ventrodorsal abdominal radiograph of the abdomen of Female dog evident of cystolith



Fig. 2: Cystolectectomy and cystolith seen

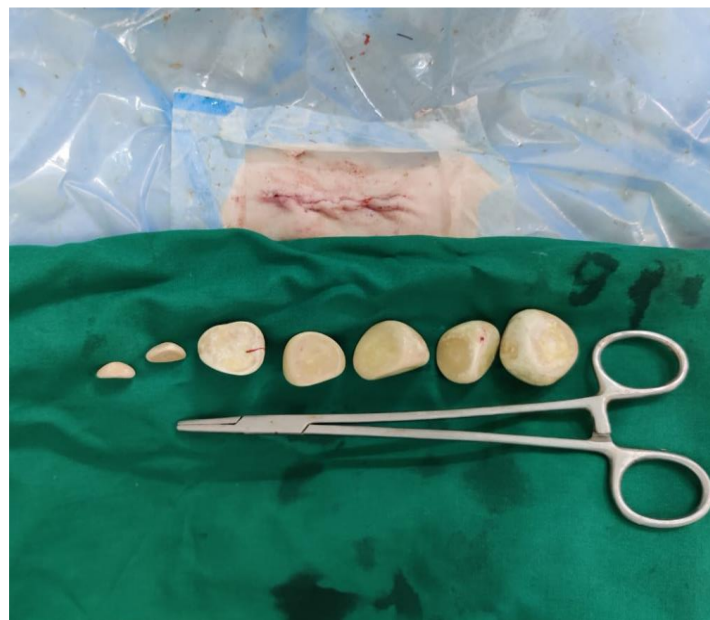


Fig 3: Calculi retrieved from bladder and post operative skin closure