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Case Report

Surgical Management of Cystic Calculi and Testicular Tumour in Dog

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Abstract

A ten year old male uncastrated spitz dog weighing 10 kg was presented with a history of straining to urinate, dribbling blood tinged urine from the prepuce, anorexia and distended abdomen since 4 days and enlargement of scrotum since one month. The physical examination showed asymmetrical testicles and tense abdomen. Radiography and ultrasonography diagnosed cystic calculi. Cystotomy and retropulsion was done to remove all the calculi from the urinary bladder and removal of testis along with scrotal ablation was performed for testicular tumour. After 6 months, animal was presented with tumour between phalanges which was removed surgically.

Keywords: Urethral calculi; Testicular tumour; Dog

Introduction

Bladder stones (cystic calculi) are rock-like formations of minerals that develop in the urinary bladder and lodge in the urinary bladder or urethra in dog (Jattennavar and Kalmath, 2012). They may be single or multiple and may cause partial or complete obstruction (i.e., urethral). Urinary calculi are very common in dogs (Makkena *et al*., 1999). The incidence is more in smaller dog breeds than larger breeds (Lulich *et al*., 2000) and are more common in middle-aged dogs. Osborne *et al*. (1995) reported that any congenital or acquired disorders leading to increased urinary excretion of certain minerals can predispose to urolith formation.

The present study reports the successful management of both cystic calculi and testicular tumour in dog.

Case History and Observations

A ten year old male uncastrated spitz dog weighing 10 kg was presented to Referral Veterinary Polyclinic, Indian Veterinary Research Institute, Izatnagar with the history of straining to urinate, dribbling blood tinged urine from the prepuce, anorexia and distended abdomen since 4 days and enlargement of scrotum since last one month. Clinical parameters were found to be within the normal range except slight rise in rectal temperature. Animal was found to be dull and depressed. The physical examination showed asymmetrical testicles and tense abdomen. Radiography of lateral pelvis revealed distended urinary bladder containing radio opaque calculi (Fig. 1). This was confirmed by floating calculi shadows inside the bladder revealed by ultrasonography. After 6 months, animal was presented with tumour between phalanges which was removed surgically.

Fig. 1. Lateral abdominal radiograph of radiodense cystoliths.

Treatment and Discussion

Dog was prepared for ventral abdominal laparotomy. Animal was premedicated with atropine at 0.04mg/kg intramuscularly followed by xylazine at

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1mg/kg intramuscularly after 5 minutes. General anesthesia was induced with ketamine at a rate of 5 mg/kg BW intravenously and was maintained with ketamine. Animal was controlled in dorsal recumbency. The surgical site was prepared for aseptic surgery. A 3-4cm skin incision was made on right caudal paramedian just parallel to prepuce and abdominal cavity was exposed. Urinary bladder was exteriorized and abdominal cavity was packed with sterile towel. An incision was made on the dorsal aspect at least vascular area of urinary bladder and several large and small calculi with largest one being as big as 1.5 cm in diameter were removed. The urethral calculi were retropulsed into the urinary bladder by retrograde hydropulsion using urethral catheter (Fig. 2). The urethra and bladder was lavaged many times to remove all the remaining calculi. After washing with Normal Saline, bladder was sutured by using 3-0 chromic catgut in simple Cushing followed by Lambert pattern. The laparotomy incision was closed in routine manner.

Fig. 2. Cystoliths after being removed

For testicular tumor (Fig. 3), a circular incision was made on the skin of scrotal neck, incising dartos, scrotal fascia and tunica vaginalis was exposed. Atrophied testis was exteriorized by incising tunica vaginalis, the spermatic cord was transfixed with catgut and cut. Other testis was removed without incising tunica vaginalis so that tumorous mass doesn't get exposed and disseminate. Scrotum was ablated fully and the edges were closed with subcutaneous followed by simple interrupted skin suture with catgut and polyamide, respectively. Tumor between phalanges appeared 6 months later, and was removed surgically.

In dogs obstructive urolithiasis of lower urinary tract is common (Linda *et al*., 2011) with hematuria and dysuria as the most common signs observed. Hematuria occurs because the stones rub against the bladder wall, irritating and damaging the tissue and causing bleeding. Dysuria may result from in

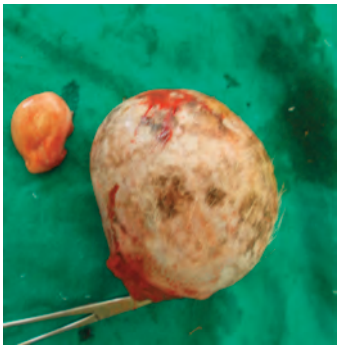

Fig. 3. Testicular tumour size in comparison to atrophied testis.

flammation and swelling of the bladder walls or the urethra, from muscle spasms, or due to a physical obstruction to urine flow caused by the presence of the stones. Large stones may act almost like a valve or stopcock, causing an intermittent or partial obstruction at the neck of the bladder. Small stones may flow with the urine into the urethra where they can become lodged and cause complete obstruction. If an obstruction occurs, the bladder cannot be emptied fully. This is extremely painful, especially when pressure is applied to the abdomen. If the obstruction is not relieved, the bladder may rupture. On next day, the dog got a relief of hematuria and straining. Testicular tumor is one of the most common tumors in older intact (unneutered) male dogs. The affected testicle will increase in size, but sometimes shrinking of the other testicle is more obvious. Testicular tumour followed by urolithiasis suggests that derangement of physiological levels of steroid hormones (androgens) might be the predisposing cause for urolithiasis in dogs.

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