

**Case Report**

## **SURGICAL MANAGEMENT OF URETHRAL CALCULI AND UROABDOMEN CONDITION IN A KID – A CASE REPORT**

**\*Harish Kulkarni, Velavan A., Justin William B. and Ganesh R.**

*Department of Veterinary Surgery and Radiology, Madras Veterinary College, Chennai-7*

*\*Author for Correspondence*

### **ABSTRACT**

Urinary obstruction is one of the causes for the morbidity and mortality, if not treated in early stages in small ruminants. Goats are more susceptible for incidence of urethral calculi as these species having urethral process where the urethral diameter is narrowed and leads to urinary obstruction. If the condition initially not identified later bladder will rupture and leads uroabdomen. The present case paper reports successful medical and surgical management of urethral calculi in a kid.

**Key Words:** *Urethral Calculi, Uroabdomen, Foley's Catheter, Cystostomy, Ammonium Chloride, Kid*

### **INTRODUCTION**

Urolithiasis is the most widespread and economically important urinary disease of ruminant species. It is more common in young animals and may reflect both population and feed bias. An overall incidence of 5.04 percent in animals has been reported in India. The species wise incidence has been reported as: goats 49.83%, cattle 32.87%, dogs 14.53%, horses 1.38%, sheep 1.04% and cats 0.34% (Amarpal *et al.*, 2004). The etiology is complex and multifactorial although urolithiasis is known to have numerous predisposing etiology factors but exact mechanism of stone formation and growth is not fully known (Makhdooni and Gazi, 2013). In this paper, medical and surgical management of urethral calculi in a kid has been reported.

### **CASES**

Two months old, male, non descriptive kid weighing 2 Kg was presented to Large Animal Clinics, Madras Veterinary College, Chennai -7, with a history of anuria, inappetance, distended abdomen since 1 day. On physical examination heart rate (102 beats /minute), respiratory rate (38 breaths /minute), rectal temperature (103<sup>0</sup>F) and haemato-biochemical values were within normal range. On radiological examination of urethra, small multiple radiopaque calculi were noticed near urethral process. Under 2% lignocaine epidural anesthesia, amputation of urethral process was performed and kid passed little amount of urine. Inj. Streptopenicillin @ 50mg intramuscularly and Inj. Meloxicam @ 0.3mg/kg bodyweight, intravenously were administered. Next day animal was again presented with same symptoms and distended abdomen. Abdomenocentesis revealed presence of urine in the abdominal cavity. Cystostomy surgical procedure was decided to be performed.

Under epidural anesthesia using 2 % lignocaine animal was positioned in right lateral recumbency, left paramedian incision was made. Once peritoneum entered, the urine flushed out from the abdominal cavity confirmed the uroabdomen condition. But the bladder was intact. Per cutaneous cystostomy was performed using Foley catheter size 12. Laparotomy incision was closed using PGA 1-0 by simple continuous pattern and skin was closed using silk by horizontal mattress suture pattern (Figure 1). After surgery, the owner was advised to give ammonium chloride 10 g P.O. for 7 days for urinary acidification. Inj. Streptopenicillin @ 50mg intramuscularly and Inj. Meloxicam @ 0.3mg/kg bodyweight intravenously were administered postoperatively for 7 days. Surgical wound was dressed with povidone iodine daily. Skin sutures removed on 10<sup>th</sup> postoperative day. Two weeks after surgery, the animal started passing urine through the natural opening and Foley's catheter was removed. The animal recovered uneventfully without any complications.

### **Case Report**

#### **RESULTS AND DISCUSSION**

Treatment options for goats with obstructive urolithiasis include medical management, surgery or both, but medical management alone is often unrewarding (Gutierrez *et al.*, 2000). Uroliths trapped within the urethral process may be removed by gentle manipulation or by amputation of the urethral process. Amputation of the urethral process is successful in approximately one half of small ruminant urolithiasis cases; however, where urine flow is re-established, recurrence remains high, with 80–90% re-obstructing within hours to days (Radostits *et al.*, 1994; Gutierrez *et al.*, 2000). In this case also, the obstruction was not completely relieved after performing the amputation of the urethral process. So, tube cystostomy procedure was carried out.

The use of drugs that can dissolve urinary calculi by changing the urinary pH like ammonium chloride along with percutaneous placement of Foleys catheters into the bladder has been used (Pearce *et al.*, 2003; Singh *et al.*, 2007). The same findings were observed in this case also and the use of ammonium chloride yielded good clinical results.



**Figure 1: Tube cystostomy procedure done in the kid**

Uroabdomen was observed in this present case. But the bladder was intact when palpated through laparotomy incision. The reason is unexplainable. The hypothesis might be after the bladder rupture, fast healing of the bladder wall would have occurred. The next hypothesis might be high urinary pressure in the bladder wall would have led to the seepage of urine from the bladder to the peritoneal cavity.

For male small ruminants, tube cystostomy or marsupialisation appears to be the most satisfactory surgical treatment (May *et al.*, 1998; Fortier *et al.*, 2004). In this present case, tube cystostomy found to be satisfactory clinically.

#### **Conclusion**

In conclusion, tube cystostomy is found to be good choice in managing urolithiasis condition in kids.

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**Case Report**

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