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## TUBE CYSTOSTOMY MADE EASY USING A CUSTOMISED CYSTOSTOMY CANNULA

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### ABSTRACT

A three-month-old male kid was presented to the Teaching Veterinary Clinical Complex, Pookode, with a history of distended abdomen and difficulty in passing urine, for the past five days. Physical and radiological examination revealed urinary obstruction. Surgical correction was resorted to. Under sedation and local anaesthesia, tube cystostomy was performed with the help of a customised cystostomy cannula. The customised cannula helped quick and easy tube cystostomy with a small incision of skin and muscles. The procedure was less invasive without any complications. The animal recovered uneventfully.

**Keywords:** Urinary obstruction, Buck, Easy tube cystostomy, Cystostomy cannula

### INTRODUCTION

Obstructive urolithiasis is a very common clinical condition encountered in

small ruminants and is much frustrating to farmers and veterinarians. The incidence is more in males compared to females. The uroliths obstruct the urethra at the sigmoid flexure, at the urethral process, or both. Catheterisation and retrograde urohydro propulsion are less possible in these animals due to the peculiar anatomy of their penis. Since relief of obstructing uroliths through a post sigmoid penile urethrotomy is challenging in the field practice and is associated with its own complications, resection of the urethral process is the one first attempted. Urinary diversion by tube cystostomy is a simple technique for the management of urethral calculi and is a more rewarding surgical treatment option in these small ruminants (Sooryadas, 2006; Kumar *et al.*, 2014 and Tamilmahan *et al.*, 2014). The procedure is increasingly being adopted in field practice. The present paper places on record the description of a customised cystostomy cannula and its use, for a quick and easy tube cystostomy, in goats with obstructive urolithiasis.

## CASE HISTORY AND OBSERVATION

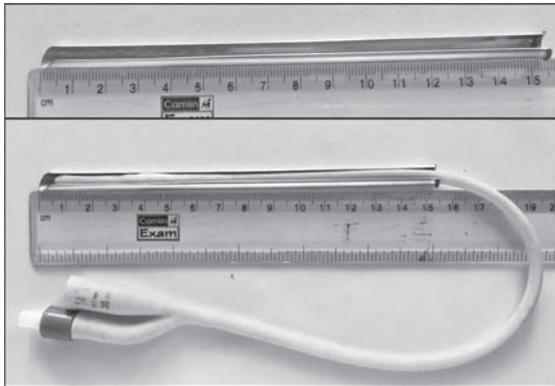
A three-month-old male kid was presented with a history of distended abdomen and difficulty in passing urine, for the past five days. Physical examination revealed a tensed abdomen along with a distended urinary bladder. Radiography confirmed a severely distended bladder. Any cystic or urethral calculi were not visible in the radiograph. Urinary obstruction, with an intact bladder, was confirmed and surgical management by tube cystostomy was resorted to.

## TREATMENT AND DISCUSSION

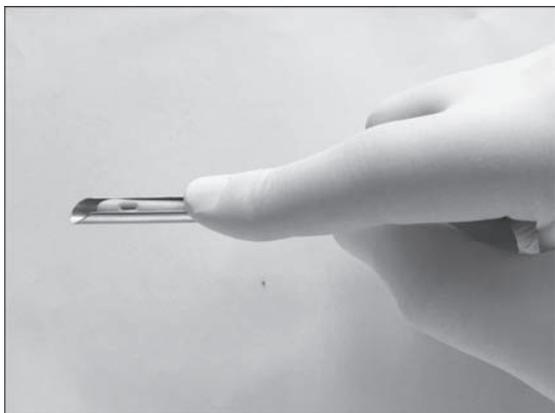
**Customised tube cystostomy cannula** (Fig. 1) - Made of stainless steel. It is 15.5 cm long with a slender, three-fourth cylindrical body. One end is beveled and sharp while the other end is flat and blunt. The three-fourth cylindrical body will snugly accommodate a Foley catheter within it.

**Tube cystostomy procedure using the customised cannula** - The caudal ventral abdomen was prepared for the surgery. Meloxicam @ 0.2 mg/kg was administered IV for pre-emptive analgesia. Ceftriaxone @ 10 mg/kg was administered IV to provide an antibiotic umbrella. Midazolam @ 0.1 mg/kg was administered IV for sedation, followed by a lumbosacral epidural and local infiltration of the left

lateral penile skin with 2 % lignocaine. With the animal on right lateral recumbency, a small skin incision was made left lateral to the penis, above the distended portion of the urinary bladder. The subcutis and underlying muscles were bluntly dissected to the level of the peritoneum, with the tip of a scissors. A 14 size Foley catheter was placed within the cannula, concealing the catheter tip behind the bevel edge. The cannula, along with the Foley catheter, was then held with the right palm (dominant palm) placing the index finger firmly over the open body of the cannula (Fig. 2). Holding the abdominal incision in close approximation to the distended bladder, with the left hand (less dominant hand), the cannula with the catheter inside was pierced into the bladder. Entry into the bladder was confirmed by the free flow of urine through the lumen of the catheter. The Foley catheter lying free from the distal end of the cannula was then pushed inside so as to advance the bulb of the catheter ahead of the bevel and into the bladder. The bulb was then inflated with normal saline to hold the Foley catheter within the bladder lumen. The cannula was then gently pulled out from the bladder lumen and abdominal incision, and disengaged from the catheter. Applying gentle traction on the inflated catheter, the urinary bladder was pulled towards the abdominal incision. A purse-string suture with long tails was then applied



**Fig. 1:** Customised tube cystostomy cannula, snugly accommodating the Foley catheter within it



**Fig. 2:** Customised cannula with the 14 size Foley catheter placed inside. The catheter tip concealed behind the bevel edge and the index finger held firmly over it across the open side

around the cystostomy puncture. Each tail of the purse-string suture was then passed through each edge of the muscle incision and knotted. The dissected muscle and skin incision were apposed with simple interrupted sutures. A Chinese finger-trap suture was applied over the catheter for securing it further. The remaining free portion of the catheter was coiled and secured to the abdominal skin with sutures. Routine postoperative care was followed.



**Fig. 3:** Partially cylindrical design of cannula permitting its easy disengagement from the catheter

Placement of the Foley catheter, into the urinary bladder, was very easy using the customised cystostomy cannula. The three-fourth cylindrical design of the cannula could snugly accommodate the Foley catheter inside its body during the bladder entry. The procedure required only a small surgical incision on the skin and muscles. The partially cylindrical design permitted its easy disengagement from the catheter (Fig. 3), following cystostomy. Urine started dribbling through the penile urethra by 10 days and flowing freely by two weeks. The catheter was later removed, following free flow of urine through the penis. The animal recovered uneventfully and was in accordance with those reported earlier (Sooryadas, 2006; Kumar *et al.*, 2014 and Tamilmahan *et al.*, 2014). Quick and easy tube cystostomy was possible using the customised cystostomy cannula.

## SUMMARY

The customised cystostomy cannula permitted quick and easy tube

cystostomy for relieving urinary outflow obstruction in the male kid. The cannula made the procedure less invasive without any complications.

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