

TUBE CYSTOSTOMY FOR THE MANAGEMENT OF UROLITHIASIS WITH PHALITIS IN TWO DOGS

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The present communication reported management of obstructive urolithiasis with severe phalitis using cystotomy and tube cystostomy in two male dogs. Tube cystostomy was performed after cystostomy through caudal paramedian celiotomy and removal of cystic calculi. Both cases responded well to the treatment and phalitis subsided quickly. It was concluded that tube cystostomy is a simple and useful technique for the management of complicated cases of obstructive urolithiasis in dogs.

Key words: Dogs, obstructive urolithiasis, phalitis, tube cystostomy

Introduction

Urolithiasis, characterized by formation of calculi in the urinary tract (Leidinger, 1999), is commonly reported in dogs and considered as the third most frequent disease of the lower urinary tract in dogs (Lulich *et al.*, 1992). As per the previous studies 90 to 98 per cent of uroliths are located in urinary bladder and urethra (Hesse, 1990; Hesse *et al.*, 1997; Ling *et al.*, 1998, Kucera, 1999; Markwell *et al.*, 2000). Cystic and urethral calculi may be present as multiple or single and may cause partial or complete obstruction. Emergency surgery is indicated for patients with obstructive urolithiasis. The goals of surgical management of obstructive urolithiasis include removal of all uroliths while preserving organ function, eliminating partial or complete obstruction to urine outflow, and correction of anatomic abnormalities that predispose the patient to infection and urolithiasis (Caywood and Osborne, 1986). Tube cystostomy has been reported for the management of complicated cases of obstructive urolithiasis in dogs (Amarpal *et al.*, 2011). The present communication reports management of obstructive urolithiasis with phalitis using tube cystostomy in two dogs.

Case history and clinical findings

Two non-descript male dogs of 3 and 5 years of age were reported to the veterinary polyclinic of IVRI, Izatnagar with the complaint of recurrent unsuccessful attempts to pass urine, continuous straining, occasional dribbling of urine with haematuria. Animals were anorexic and one animal also had vomiting for last two days. The palpation of abdomen showed tense bladder in the caudal abdomen. The animals were subjected to

radiographic examination. Lateral radiographs showed presence of several radio-opaque calculi in urethra and urinary bladder in both dogs (Fig. 1). Examination of penis showed severe phalitis (Fig.2) with signs of necrosis which were more severe in one case than the other. Attempts to pass urethral catheter were initially unsuccessful as the calculi obstructed the urethral passage, however, repeated attempts for catheterization with concurrent hydropropulsion of the calculi in the bladder led to passage of urethral catheter, however, catheterization of urethra was accompanied by bleeding from the urethra as the penis was severely inflamed and urethritis was also suspected. Both cases were diagnosed as suffering from obstructive urolithiasis due to presence of urethral and cystic calculi with phalitis.

Surgical procedure

It was decided to perform cystotomy for the removal of cystic calculi in both cases. As there was severe phalitis and suspected urethritis it was also contemplated to perform tube cystostomy in both cases to divert urine through a Foley, catheter to assist the normalization and healing of the urethra and penis.

The animals were administered with atropine 0.045mg/kg subcutaneously followed by intravenous diazepam 0.25 mg/kg. Anaesthesia was induced by thiopental sodium until effect and maintained by intermittent injections of thiopental as per the need. The dogs were positioned in dorsal recumbency on an operation table. The whole ventral abdominal area was prepared for aseptic surgery by shaving and scrubbing the whole ventral abdomen. A 4-5 cm long left paramedian incision was made between the

umbilicus and pubis and parallel to the penis. Subcutaneous tissues were dissected, rectus abdominis muscle and its sheaths were incised and bladder was located. The bladder was exteriorized and held in position with the help of two stay sutures applied cranially and caudally. A 2-3 cm long incision was made on the ventral aspect of the bladder wall at a site

having minimal visible vasculature. The index finger was inserted inside the bladder and all the calculi present in the bladder were removed slowly (Fig. 3). A urethral catheter was then placed in the urethra and the urethral passage was flushed with sterile saline to push back the urethral calculi, if any, into the bladder.



Fig. 1: Presence of calculi in urethra and bladder Fig. 2: Signs of phalitis



Fig. 3: Calculi removed after cystostomy

Fig. 4: Placement of Foley's catheter



Fig. 5: Tube cystostomy procedure completed

Fig. 6: Phalitis subsided after tube cystostomy

The bladder was again examined for the presence of calculi and all the calculi, if present, were removed from the bladder. Utmost care was practiced to avoid the contamination of the abdominal cavity with bladder contents. Bladder incision was closed with 1-0 chromic catgut using double layer of inverting sutures. For tube cystostomy, a small skin incision was made 8-10 cm anterior to the abdominal incision. A long artery forceps was advanced from the first incision toward the second incision making a subcutaneous tunnel. A14 French Foley's catheter was caught in the jaws of the forceps and pulled through the subcutaneous tunnel and brought to the site of abdominal incision. The Foley's catheter was anchored by its eye on a 5 mm intramedullary pin. The intramedullary pin with Foley's catheter was pushed into the bladder through a new opening in the bladder wall (Fig. 4). The balloon of the Foley's catheter was filled with 20 ml saline and the intramedullary pin was pulled out. A purse string suture was applied around the Foley's catheter in the bladder wall. The abdominal wall was closed in a standard fashion. The part of cystostomy catheter remaining outside the abdomen was fixed with the body wall with the help of 4-5 stitches using non-absorbable suture material (Fig. 5). The cystostomy tube remained in place until the phalitis had subsided. It was removed by deflating its balloon when animal started urinating through normal urethral opening.

Postoperative care:

An Elizabethan collar was applied to prevent self-mutilation at the site of incision. Incision site and the exit point of the Foley's catheter were dressed daily with povidone-iodine solution until healing and removal of sutures. Antibiotic enrofloxacin 5mg/kg and meloxicam 0.2mg/kg were administered intramuscularly for 5 days. The bladder was flushed with normal saline containing enrofloxacin twice daily until recovery.

Results and Discussion

Both animals responded well to the treatment and both dogs started taking feed from the very next day. Initially they passed urine through the Foley's catheter only but after 3 days the animals started passing urine from the urethra also. The inflammation of the penis subsided rapidly and penis regained its normal colour and texture in 4 and 6 days in both dogs (Fig. 6). Sutures from the incision were

removed on 10th postoperative day and Foley's catheter was removed on 15th day in both cases. Tube cystotomy is a very simple procedure and yields very high success rate in complicated cases of cystic calculi (Amarpal et al. 2011). Tube cystostomy may be performed concurrently with cystostomy for removal of cystic calculi. Indications for cystostomy tube placement include bladder dysfunction, urinary tract rupture, obstructive urinary tract neoplasia, urinary diversion following urogenital surgery and obstructive urolithiasis (Beck et al., 2007). In the present study the purpose of tube cystostomy was urinary diversion following phalitis, which might have been caused by repeated catheterization and trauma to the penis as a result of calculi present inside the urethra. Complications related to the cystostomy tube include slight inflammation and signs of infection at the point of entry of Foley's catheter, which resolved easily (Beck et al., 2007). Tube cystostomy was found very useful in the management of urolithiasis with severe phalitis in dogs.

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