Cystorrhaphy and Tube Cystostomy for Management of Obstructive Urolithiasis in a Calf

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Abstract

A male surti buffalo calf was presented with history of anuria since 2-3 days. Physical examination was carried out to check the status of urethra and urinary bladder. Based on history of anuria and physical examination the condition was diagnosed as an obstuctive urolithiasis with a ruptured urinary bladder. Analgesia was achieved with epidural administration of Lignocaine Hcl (3 ml) at lumbosacral space. Routinely post-operative antibiotic, analgesic and urinary acidifier ammonium chloride were given. The foleys catheter was removed on 12th post-operative day. The animal started normal urination and had an uneventful recovery.

Keywords: Calf; cystostomy; cystorrhaphy; Foley's catheter; urolithiasis

Introduction

Urolithiasis describes concretion of urinary calculi or organic compound, which may lodge any where in urinary system but most frequently at distal end of sigmoid flexure in ruminants and causes subsequent urine flow obstruction. Occurrence of urolithiasis is significantly more common in male ruminants compared to females due to their anatomical conformation of urethral tract. The female has short, wide and straight urethra while the male has long, narrow and tortuous urethra which makes them more prone to urethral obstruction, particularly distal aspect of sigmoid flexure in bovines and urethral process in sheep and goats. Early castration in male calves might be the reason because it causes hypoplasia of urethra and leading to reduction in bore size of urethra.The decreased urethral orifice is a major predisposing factor for obstructive urolithiasis. In addition, calculi formation usually results from a combination of nutritional, physiological, geographical, seasonal, age, sex and management factors. Treatment of obstructive urolithiasis is definitely surgical, once the obstuction is complete. Removal of calculi may be by direct or indirectly by passing the obstuction. Surgical tube cystostomy is the most commonly used treatment for long term management of urolithiasis in animals. It redirects the urine through a catheter placed from urinary bladder and existing through the abdominal wall. The present report describes clinical signs and surgical management of obstructive urolithiasis in a three months old buffalo male calf.

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History

A three months old buffalo male calf was referred with complete retention of urine since last two days at village Borsad, Gujarat

Diagnosis

Clinical signs usually recorded are intact bladder with complete anorexia or inappetance, stranguria or anuria, reluctant to walk and frequent attempt to urination due to partial or complete obstruction. But in our case on physical examination of calf, we observed bilateral distension of lower abdomen and signs of ruptured bladder.

Surgical procedure

The calf was anesthetised with local anesthetic 2% Lignocaine at lumbosacral junction by lumbosacral nerve block along with that line infiltration at surgical site. Animal was placed on right lateral recumbancy. Left side of abdomen near rudimentary teat the area was cleanly shaved and scrubbed with antiseptic solution. After scrubbing, an incision was made nearly anterior to the rudimentary teat. Bladder was located after seperating subcutaneous tissue and

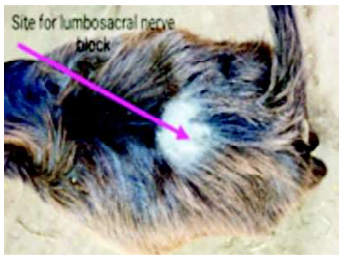

Fig. 1: Site for lumbo sacral nerve block

Fig. 2: Tube cystostomy site prepared

Fig. 3: Ruptured bladder

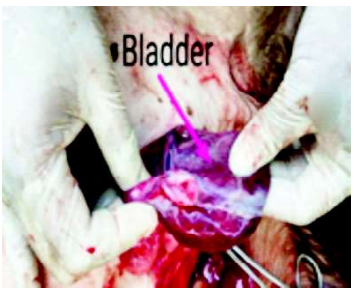

Fig. 4 : Urinary bladder

Fig. 5: Foley's catheter inserted into bladder

Fig. 6: Recovered animal - one month after surgery

muscles by blunt incision (Fig. 1). The bladder was found already ruptured (Fig. 2 and 4). Here cystorrhaphy was undertaken before using foleys catheter. After cystorrhaphy, sub-cutaneous tunnel was made parallel to prepuce by passing straight forcep through the subcutaneous tissue at the end so that where skin was incised intended for the catheter outlet (Fig. 3). Foley's catheter was passed from outside to abdominal cavity where the catheter tip was held in stillette and directly stabbed the bladder and its bulb was inflated with the normal saline for fixation. Muscles and sub-cutaneous tissue was sutured with catgut no. 2. The foley catheter was sutured at multiple sites on the ventral abdomen (Fig. 5).

Post-operative treatment, 3-4 times long acting Oxytetracycline @ 20 mg/ kg b. wt. and Dexamethasone given on every forth day along with Ammonium chloride orally daily @ 200 mg/ kg b. wt. b.i.d. for minimum 15-20 days. Application of local antiseptic dressing with Povidone iodine was advised for a week. The catheter was allowed to drain freely for minimum 10-15 days until normal urination resumed. Catheter was removed on 11th day of surgery after the confirmation of normal urination through the external urethral orifice (Fig. 6).

Results

The calf is now recovered completely. Defaecation, urination, feeding and all other activities are normal as per self observation and owners description.

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