



SURGICAL MANAGEMENT OF PREPUTIAL CALCULUS IN ZEBU CATTLE

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ABSTRACT

A six years old zebu cattle was presented with a complaint of not passing urine and discomfort since last 24 hrs. Animal showed uneasiness and abdominal pain manifested by straining, kicking at the belly, twitching of the penis and frequently attempt to urination. A hard mass was palpated inside the preputial sheath blocking the external urethral orifice and thereby causing difficulty in urination. The calculus was subsequently removed followed by proper postoperative care led to complete recovery of the animal with restoration of normal urination.

KEY WORDS: Surgical, management, preputial calculus, zebu cattle.

INTRODUCTION

Urinary calculi, or uroliths, are concretions of solid mineral and organic compounds that cause disease through direct trauma to the urinary tract and obstruction of urinary outflow. Urinary calculi formation usually results from a combination of physiologic, nutritional and management factors. It is mainly attributed to excessive or imbalanced intake of minerals (Larson, 1996, Radostits *et al.*, 2000). Obstructive urolithiasis means the formation of calculi in the urinary tract with subsequent urinary blockage by uroliths (Payne, 1989, Radostits *et al.*, 2000). It is a common and frustrating problem in small and large ruminants for owners and Veterinarians. It appears to affect equally both sexes, but urinary blockage is an important problem only in males because of the anatomical conformation of their urinary tract (Larson, 1996). In cattle, urethral obstruction typically occurs at the level of the sigmoid flexure. Mortality rate of obstructive urolithiasis in suffering animals due to rupture of the urethra or urinary bladder is very high (Gasthuys *et al.*, 1993). The surgical management of obstructive urolithiasis in male cow calves and buck includes urethrotomy, cystostomy or urethrostomy. The present study place on record, a typical case of preputial calculus in zebu cattle and its surgical management.

Case history and observations

A six years old zebu cattle was presented with a complaint of not passing urine and discomfort since last 24 hrs. Animal showed uneasiness and abdominal pain manifested by straining, kicking at the belly, twitching of the penis and frequently attempt to urination. The animal showed urination by dribbling, elevated body temperature, increased heart rate and respiration rate. A hard mass was felt during palpation

of the preputial sheath after putting the animal in lateral recumbancy for examination. Further, A calculi was found to be attached inside the preputial sheath. It blocked the external urethral orifice and thereby causing difficulty in urination. So, it was decided to perform the surgical operation in the prepuce over the blocked site.

TREATMENT & DISCUSSION

The animal was anaesthetized locally with 2% Lignocaine hydrochloride at the operation site. After aseptic preparation, the preputial skin over the calculus was incised and the attached calculus was subsequently removed (Fig. 1). The blocked site was then washed with lukewarm water and normal saline solution. The skin was then sutured with vertical mattress suturing pattern with chromic catgut no. 1. The sutured area was dressed regularly with Povidone iodine. Post operative care included infusion of fluids and parenteral antibiotics (Ceftiofur – 1mg/kgb.wt.) for 5 days and NSAID (Meloxicam –0.5 mg/kg b.wt) for 2 days. The skin sutures were removed after 10 days post-operative. After proper postoperative care the animal recovered completely with restoration of normal urination.

The treatment of obstructive urolithiasis is primarily surgical (Larson, 1996 and Van Metre *et al.*, 1996). The animal recovered completely after removal of the calculi and normal flow of the urine was re-established. The healing was uneventful in a time span of 10 days. Urolithiasis occurs especially in cattle receiving rations high in cereal grains, oil meals or grazed in pastures containing large quantities of oxalate, estrogen of silica (Radostits *et al.*, 2000). In present case, the bullock was solely fed with paddy straw, rice bran besides grazing in the field. Paddy straw is very rich source

of oxalates if it is given without urea treatment. The owner of the animal was giving paddy straw without urea treatment which might be responsible for causation of urolithiasis.

Further, no mineral supplementation was done in the diet of the animal leading to calcium-phosphorus imbalance in the feed (Larson, 1996).



FIGURE 1: Showing the preputial stone after its removal in Zebu cattle

CONCLUSION

Urolithiasis in India presents an important economic repercussion where cattle-based agriculture is strongly linked with the livelihood of an important segment of the population. In India, urolithiasis has been commonly reported in zebu cattle. Treatment of obstructive urolithiasis has been found to vary depending upon clinical status of the animal and duration of obstruction. Medical treatment has been described with marginal success in relieving the obstruction during early stages of the disease. However, once urethral obstruction is complete, surgical intervention becomes warranted. The different surgical interventions employed for the management of obstructive urolithiasis in cattle are aimed either at urolith removal for normal urine flow establishment or for urinary diversion to allow the time for the urinary tract to restore patency. The choice of procedure depends on the extent of tissue damage secondary to the obstruction, the value of the animal, and the owner's expectations for continued use of the animal.

ACKNOWLEDGEMENT

The author is very much thankful to the Faculties of Department of Veterinary Anatomy and Histology, C.V.Sc. & A.H. and KVK, Bhanjanagar, OUAT, for their kind cooperation throughout the surgery and treatment period.

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