

Case Report

Surgical management of preputial prolapse in a bull- a case report

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ABSTRACT

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A 3-year-old male 400kg cross-breed bull was referred to the ambulatory service of Shahedul Alam Quadary Teaching Veterinary Hospital, Chattogram Veterinary and Animal Sciences University (CVASU) with the history of wound and laceration of the preputial region. Physical examination revealed oedema, laceration and necrosis of tissue at the prolapsed preputial sheath. Surgical removal of the affected part of the prepuce was considered as the treatment option. Standing sedation was achieved by injecting xylazine intravenously and 2% lidocaine infiltrated at the site of the incision. Following standing sedation, the affected portion of the prepuce was amputated and sutured. A polyvinyl chloride plastic pipe (PVC pipe) was placed at the preputial orifice to facilitate urination and wound healing. After placing the tube, a pressure bandage was given to stabilize the tube in the preputial orifice. In addition, antibiotic, antihistaminic and Nonsteroidal anti-inflammatory drug were prescribed. The pressure bandage and PVC pipe were removed after 3 days and dressing of the affected area by povidone-iodine was suggested. The bull was completely recovered within 21 days of treatment. The study indicated a cost-effective and simple surgical intervention to treat preputial prolapsed in bull with minimum complications and post-operative care.

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1. INTRODUCTION

Prolapse is a condition in which organs fall or slip out of place. Failure of normal extension and retraction of the penis and prepuce is called preputial prolapse. Injury to the tender preputial tissue is a common occurrence in case of cattle breeds that have a long prepuce, large preputial orifice, and bulky pendulous sheath (Arthur et al., 1996), particularly in the young male occurs during or immediately after coitus (Wolfe, 1986). When the prepuce is exposed for a long time, it may not be retracted into the sheath and cause secondary to chronic prolapse (Desrochers et al., 1995). Chronic prolapse of the prepuce of bulls often associated with an increased incidence of preputial injuries, infections, and subsequent permanent prolapse (Donaldson et al., 1960; Hofmeyr, 1968). Injury to the prepuce may cause

swelling, erosion of preputial epithelium, constriction of the preputial orifice, induration, and abscession (Walker et al., 1980) which lead to constriction of the preputial orifice and prevents retraction (Singh et al., 2017). Affected bulls feel difficulty in urination and reluctant to mate because of pain (Lagos et al., 1970; Bodh et al., 1994).

The management of the preputial prolapse depends on the condition of the injury, the presence of infection on the site and the ability to extend or retract the penis. Treatment often consists of controlling infection; lower the inflammation of the preputial site, and preventing further injury (Desrochers et al., 1995). When the site of the injury is chronically infected and consists of necrosis, abscession then surgical intervention is indicated. Circumcision (preputial

amputation) and posthioplasty (resection and anastomosis, or reefing) are two surgical techniques used to reestablish the normal function of the prepuce (Baxter et al., 1989). The surgical approach to manage the preputial prolapse is a simple and quick method and the post-operative complications are also minimum (Bodh et al., 2017). The objective of the present study was to describe a detailed surgical management of the chronic preputial prolapse in a crossbreed bull through the circumcision technique.

2. CASE HISTORY AND CLINICAL OBSERVATIONS

A 3-year-old male 400kg cross-breed bull was presented with a history of the wound and laceration of the preputial region. The owner was not sure about the cause of the wound in the preputial area of the bull and assumed that the bull got injured after natural mating. The bull was off feed for two days. The wound was previously treated with povidone-iodine gel for 7 days and treated with non-steroidal anti-inflammatory drug. Physical examination revealed edema, laceration, and necrosis of tissue at the prolapsed preputial sheath which looks a ball-like eroded mass with black in color. Severe preputial laceration with severe necrosis was diagnosed on the affected part of the prepuce. Surgical removal of the affected part of the prepuce was considered the treatment option in this case.



Figure 1. Preputial prolapse in a bull with edema and laceration. Black colored necrosis was found at the tip of the prepuce.

3. SURGICAL MANAGEMENT

The cross-breed bull was kept off feed for 24 hours and off water for 12 hours before surgery. The patient was premedicated with Xylazine hydrochloride (xylaxin®, Indian Immunologicals Limited, India) @ 0.02 mg/kg body weight and restrained in a standing condition. The site was prepared aseptically

while the site was shaved 15 cm from the orifice to the proximal part and a tourniquet (gauze bandage) was placed at the proximal to the decided area of the incision to reduce excessive bleeding during surgery. Local anesthetic 2% Lignocaine hydrochloride (Jasocaine®, Jayson Pharmaceuticals limited, Bangladesh) was infiltrated in the skin of the sheath just proximal to the preputial orifice and distal to the tourniquet as ring pattern. An incision was given at the prolapsed part of prepuce into the preputial lumen approximately one-third of its circumference. On the external and internal preputial layers along with the resection part, a row of horizontal mattress sutures of polyglactin 910 (vicryl) were placed (both layers sutured together) and the procedure was repeated for the remaining two-thirds of the circumference of the preputial prolapse. The affected part of the prepuce amputated at the distal of sutures. A simple continuous pattern was given to suture the internal and external layer of the prepuce with polyglactin 910 (vicryl). After completion of the suture, the tourniquet was removed and a PVC pipe (the PVC pipe was 12 inches long and the rough edges were made smooth with fire heat) was placed at the preputial orifice (Bodh *et al.*, 2017) which was placed with a pressure bandage (elastic and gauze bandage with micropore tape) and stay-suture for the next 3-5 days.

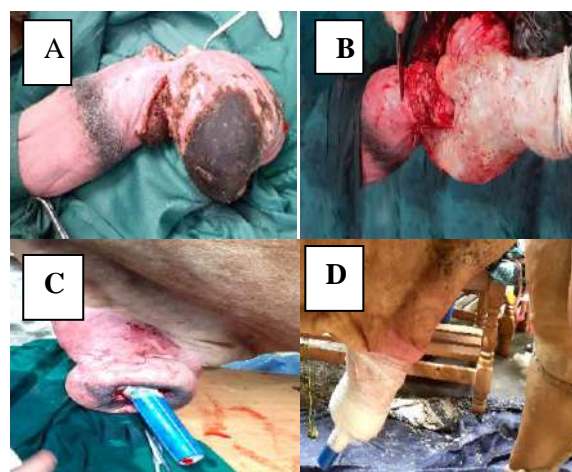


Figure 2. Surgical procedure A) Aseptic preparation of the prepuce by clipping and shaving following local anesthesia B) Excision of the prolapsed part from the prepuce and suture with absorbable suture. C) Use a suitable PVC pipe to continue urination during post-operative edema of the prepuce. D) Fixing the pipe with prepuce using surgical tape.



Figure 3. Incised prepuce with PVC pipe after surgery. The bull was calm and quiet due to the sedative effects, which urinate normally after surgery.

Postoperatively, Parenteral antibiotic streptopenicillin (streptopen®, Renata Pharmaceuticals Ltd) @ 1ml/10kg body weight intramuscularly at 24 hours interval for 7 days, antihistaminic pheniramine maleate (Alerin®, Eskayef Pharmaceuticals Ltd.) @ 0.5mg/kg body weight administered intramuscularly at 24 hours interval for 7 days and ketoprofen (kop-vet®, Square Pharmeaceuticals Ltd.) @ 3mg/kg body weight intramuscularly at 24 hours interval for 3 days as non-steroidal anti-inflammatory was prescribed. The patient urinated normally just after the surgery through the PVC pipe. PVC pipe was removed after 3 days of surgery and suggested to give 5% povidone-iodine ointment at the sutured part two to three times per day after dressing with 5% povidone-iodine. The wound was healed within 21 days of treatment (as the urination, feeding habit and physical appearance was normal) without any uneventful post-operative complications and advised to give sexual rest for 4 months after full recovery.

4. DISCUSSION

In most bulls, preputial injuries during natural breeding activity are a very common occurrence. The injuries vary in severity and the therapeutic approach necessary to return the bull to breeding soundness (Wolfe, 2014). Injuries of the reproductive tract of bulls are so significant due to the economic and genetic loss of beef and dairy cattle farmers (Anderson, 2008). Some injuries in the reproductive region need immediate surgical intervention to save the owner of the affected bulls from economic loss (Anderson, 2008). Immediate surgical management is needed in case of the chronic preputial prolapse characterized by laceration,

edema, fibrosis, and necrosis. In the present case, prolapsed necrosed and eroded preputial tissue was excised surgically through circumcision. The present surgical procedure was done to excise the necrosed prolapsed preputial part that cannot return to its normal position. Desrochers et al., (1995) also recommended the circumcision technique for resection of prolapsed part of the prepuce in *Bos indicus* breeds. Bulls should be given at least 6 weeks of sexual rest after surgery (Devi et al., 2010). In this present study, bull was given complete sexual rest for 4 months (Bodh et al., 2017). Full recovery was observed after 21 days without any complications through other studies show wound dehiscence, stricture formation (Karle et al., 2011) were few postoperative complications associated with circumcision. In the report of Baxter et al. (1989), 76% return to breeding soundness in bulls that underwent circumcision as treatment for preputial prolapse. In our study, we also observed the similar findings where the bull regain normal breeding soundness after four month of breeding rest.

To the best of authors' knowledge, this is the first report on successful surgical management and treatment of the preputial prolapse of a bull in Bangladesh.

5. CONCLUSIONS

Preputial prolapse is common in a bull in the breeding season but it becomes complicated when an external injury occurs. Medicinal therapeutic intervention can be effective in case of early detection of the preputial prolapse. If the preputial prolapse area is characterized by laceration, edema, fibrosis, and necrosis, it can be successfully removed by using this amputation procedure followed by placing PVC tube into the preputial lumen without any serious complications. After surgery, the prolapsed area recovered completely and returned to breeding soundness. This study indicated a cost-effective and simple surgical intervention through circumcision to treat the preputial prolapse in bull with minimum complications and care.

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