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Management of preputial prolapse in a gir bull: Posthioplasty-a successful surgical approach

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Abstract
A 5-year-old Gir bull (400 kg) was presented with a protruding mass from the preputial cavity. Clinical examination revealed oedematous, lacerated, and necrotic areas of the preputial mucosa, indicating chronic preputial prolapse. The condition likely developed due to chronic inflammation from smegma accumulation and preputial hair following recent natural service. Under epidural analgesia using 2% lignocaine hydrochloride, along with local infiltration, the prolapsed tissue was surgically excised. A purse-string suture was used to close the incision. Postoperative management included antibiotics, antihistamines, and NSAIDs to control infection, inflammation, and pain. The bull recovered uneventfully and returned to normal function within 28 days.

Keywords: Prepuce, prolapse, bull, purse string suture, posthioplasty

Introduction
Preputial prolapse is a condition characterized by the eversion and persistent exposure of the preputial lining, commonly seen in Bos indicus breeds like Gir due to their anatomical features elongated prepuce, pendulous sheath, and large preputial orifice (Arthur *et al.*, 1996) [1]. These traits predispose bulls to trauma, especially during mating. Chronic exposure of the prolapsed tissue increases susceptibility to lacerations, infection, fibrosis, and permanent damage, impairing reproductive performance (Wolfe., 1986; Desrochers *et al.*, 1995) [2, 3]. Gir, Sahiwal, and other Indian zebu breeds show higher incidence due to conformation and environmental exposure (Karle, 2010) [4]. If left untreated, this condition results in significant economic loss due to reduced fertility, repeated veterinary care, and poor semen quality.

Materials and Methods
A 5-year-old Gir bull weighing ~400 kg was presented to the Department of Veterinary Gynaecology and Obstetrics, Veterinary College, Bengaluru, with a complaint of a protruding preputial mass (Figure 1). The problem appeared after natural service, and examination showed swelling, lacerations, and necrotic areas on the prolapsed mucosa, suggesting chronic inflammation with secondary infection. Given the severity, surgical excision was chosen to restore normal structure and prevent further complications. The bull was fasted for 12 hours, prepared aseptically (Figure 2) by restraining into right lateral recumbency, and administered epidural anaesthesia using 12 ml of 2% lignocaine hydrochloride. An additional 20 ml was infiltrated around the preputial ring (Figure 3). The necrotic tissue was surgically excised proximal to the healthy mucosa. Hemostasis was maintained by ligating preputial vessels, and the mucosa and skin were sutured using a purse-string pattern (Figure 4 and 5). Adequate preputial opening was preserved to allow normal urination and erection. The technique, known as posthioplasty, is well-documented for reducing complications and promoting faster recovery.

Results and Discussion
Post-operatively, the bull received antibiotic injection Streptopenicillin 5.0 g IM for 5 days.

and; injection Meloxicam @ 0.2 mg/kg IM for 3 days. Antiseptic dressing of the prepuce and daily flushing of preputial cavity was done with Povidone iodine solution. Skin sutures were removed on the 17th postoperative day, and the bull was given complete sexual rest for two months. Recovery was uneventful in all cases, with complete healing achieved within 28 days (Figure 6).

Fig 1: Preputial prolapse in a bull

Fig 2: Preparation of surgical site

Fig 3: Infiltration of local anesthesia

Fig 4: Circumscribed incision and suturing of mucosa and serosal layer of prepuce

Fig 5: Purse string suturing technique

Fig 6: Post-operative follow up after 28 days

Preputial prolapse is a common issue in zebu bulls, especially Gir, where anatomical conformation, trauma during mating, and poor environmental hygiene contribute to its development. Chronic exposure of the preputial mucosa can result in necrosis, fibrosis, and dysfunction, severely affecting breeding soundness. Prior reports (Rabelo *et al.*, 2008; Padaliya *et al.*, 2019) [5, 6] have linked these structural predispositions to increased prolapse incidence. Moreover, environmental factors such as muddy floors, fly irritation, and barbed wire exacerbate tissue damage.

There also appears to be a hereditary tendency, which points to the importance of selective breeding to achieve better sheath conformation. Early diagnosis and intervention, as demonstrated in this case, are critical. The use of regional anaesthesia, precise tissue excision, and layered suturing facilitated an excellent outcome without general anaesthesia. This outcome is consistent with earlier reports (Arthur *et al.*, 1996; Desrochers *et al.*, 1995) [1, 3], which highlight the value of careful surgical technique, proper postoperative care, and good management practices to prevent recurrence of preputial prolapse. Baxter *et al.* (1989) [7] noted that 76% of bulls treated with circumcision regained breeding soundness.

Conclusion

The present report emphasizes that early surgical correction of preputial prolapse through posthioplasty can successfully restore reproductive soundness in Gir bulls. Prompt intervention, coupled with careful operative planning and systematic postoperative management, facilitated a complete and complication-free recovery. Considering the economic and fertility-related consequences of this condition, priority should be given to preventive measures such as improved housing hygiene, proper management, and genetic selection for desirable sheath conformation. This case underscores the role of posthioplasty as a dependable and welfare-oriented approach for sustaining breeding efficiency in indigenous zebu cattle.

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Conflict of Interest

Not available

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