Short Communication

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Preputial Reconstructive Surgery to Correct Traumatic Balanoposthitis Induced Paraphimosis in A Bull

Ankit Ahuja[1*], Arvind Kumar[2], Sachin[2], Mishul Chauhan[2], Pankaj Sood[2], Amit Sharma[2]

[1]Department of Veterinary Clinical Complex, DGCN College of Veterinary and Animal Sciences, CSK Himachal Pradesh Krishi, Vishvavidyala, Palampur, Himachal Pradesh, India-176062.
[2]Department of Veterinary Gynaecology and Obstetrics, DGCN College of Veterinary and Animal Sciences, CSK Himachal Pradesh Krishi, Vishvavidyala, Palampur, Himachal Pradesh, India-176062.

ABSTRACT

A non-descript bull was presented with paraphimosis. Penile examination revealed severely edematous preputial sheath leading to preputial prolapse and a severely inflamed penis having single traumatic region in the middle of the shaft. After providing necessary medication, the bull was restrained and laid down in left lateral recumbency. The local infiltration of lignocaine hydrochloride and adrenaline was done around the proximal preputial sheath along with the orifice. A 1.2 cm long equilateral triangular portion (contralateral to the side of recumbency) on the free area of prepuce was carefully dissected, preventing the injury to peri-penile elastic layers. The apex of the dissected triangular portion pointed towards the root of the penis. Similar procedure was repeated on the other preputial side (left lateral) by laying the bull in right lateral recumbency. The sutures were removed two weeks after the surgery and bull recovered uneventfully.

Key words: Balanoposthitis, Paraphimosis, Preputial reconstruction, Bull, Preputial prolapse.

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INTRODUCTION

Paraphimosis is inability to retract the penis back into the prepuce resulting due to congenital or acquired preputial strictures, penile paralysis and, occasionally, balanoposthitis (Parkinson and McGowan, 2010). In large animals, preferably bull and stallion, it usually occurs as a sequel to the various injuries like preputial laceration, damage to penile innervation, severe systemic illness, sexual exhaustion and castration during the act of natural mating or while semen collection using artificial vagina (AV) due to mis-handling of AV (Parkinson and Mcgowan, 2010). In the cases of paraphimosis, earlier the treatment is instigated, greater is the chance of obtaining a satisfactory outcome. Perhaps the preliminary treatment is done to reduce the inflammation and provide adequate support to the penis for repositioning and retaining it inside the prepuce. However, surgical intervention is indicated in cases where the penis cannot be

*Corresponding author.
E-mail address: ankit.ahuja1947@gmail.com (Ankit Ahuja)
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Fig. 1: (a) A 1.2 cm inverted equilateral triangular incision on the penile prepuce preventing the peri-penile elastic layers; (b) Incised preputial segment; (c) Sutured incised preputial segment; and, (d) Bull presented at day 7 post-operatively for follow up.

pulled back into the prepuce or in cases of penile necrosis. The perusal of the literature revealed that majority of the cases of paraphimosis in bulls were managed by therapeutic treatment (Chutia et al., 2020) whereas, some were treated with anti-inflammatory management and re-positioning glans penis in the preputial cavity using the retention suture using purse string suture pattern (Kumaresan *et al.*, 2014, Mahesh *et al.,* 2016, Mallesh *et al.*, 2017 and Ravikumar *et al.,* 2019). Furthermore, phallopexy via creating a permanent surgical scar between dorsal mucosa of penile shaft and skin of dorso-lateral preputial mucosa was attempted in dogs by Wasik and Wallace (2014). In chronic cases where penile necrosis due to strangulation has occurred, partial penile amputation is the only salvage procedure (Wasik and Wallace, 2014). The specific procedure for the surgical management of the paraphimosis in bulls varies in response to the clinical presentation. In the present case a novel preputial reconstruction technique to achieve stenosis for retention of repositioned penis in a bull with paraphimosis due to traumatic balanoposthitis is presented.

CASE HISTORY AND OBSERVATIONS

A non-descript stray bull was presented to Advanced Veterinary Multispecialty Clinics of the Veterinary College, Palampur, India with paraphimosis. At the time of presentation, the protruded penis was severely mutilated. On visual examination, the preputial area was highly inflamed and hyperemic. For careful examination, the bull was laid down in left lateral recumbency using Reuff's method of casting. Penile examination revealed severely edematous preputial sheath, both internal and external lamina at the free part of penis indicating preputial prolapse. Additionally, severely inflamed glans penis having one traumatic region in the middle of the shaft was hanging outside the preputial cavity which depicted paraphimosis due to traumatic balanoposthitis. Although, the urination was normal but due to the traumatic middle penile shaft, the bull urinated in the form of multiple jets.

TREATMENT AND DISCUSSION

After examination, it was decided to surgically correct the paraphimosis using preputial reconstruction technique. Bull was provided with 40 mg dexamethasone (Dexona®, Zenex, India), 600 mg tofenamic acid (Tolfine®, Vet Mankind, India) and 5 gm of streptopenicillin (Dicrystine®, Zenex, India) before the surgery. Bull being laid down in left lateral recumbency, the surgical area was properly cleaned and prepared. Proximal preputial sheath

along with the orifice was anaesthetized with superficial and deep infiltration of 20 ml lignocaine hydrochloride and adrenaline (Xylocaine 2% Adrenaline®; AstraZeneca, India) containing 21.3 mg lignocaine hydrochloride and 0.005 mg adrenaline per ml. Now, in order to retain the penis back inside the preputial sheath, a 1.2 cm long equilateral triangular portion, contra-lateral to the side of recumbency, on the free area of prepuce was dissected. The apex of the dissected triangle portion pointed towards the root of the penis. Similar procedure was repeated on the other preputial side (left lateral). Adequate amount of ointment, containing 20 % each zinc oxide and boric acid in lignocaine jelly was applied on the penis before its repositioning and preputial suturing. Using a # 2 non-absorbable black braided silk suture, the incised ends on both the lateral sides were sutured via simple interrupted sutures in order to appose the incised ends. Post-operatively, the bull was administered 600 mg tofenamic acid (Tolfine®, Vet Mankind, India) and 5 gm of streptopenicillin (Dicrystine®, Zenex, India) once a day for five days. Seven days after the surgery, the bull showed normal urination with no straining and penile protrusion. The sutures were removed two weeks after the surgery and bull recovered uneventfully. A follow-up telephonic conversation with the owner one month after the surgery was done and it was observed that no recurrent paraphimosis occurred.

As per the previous reports published in veterinary literature, the trauma induced to penis during the covering was considered to be the most common cause of paraphimosis leading further damage to penile innervation leading to penile paralysis (Nevi *et al*., 2015). This case report describes the novel preputial reconstruction technique to carry out the stenosis of preputial ostium as a surgical treatment for paraphimosis which was induced by traumatic balanoposthitis. In dogs, combined preputial advancement along with phallopexy was considered as the treatment strategy for treating paraphimosis (Wasik and Wallace, 2014). Much work has been done in canine regarding the usefulness of phallopexy, however the exposed glans penis length was not documented for any of the dogs. Similarly, the use of purse string suture as a method of retention has been commonly used by many clinicians (Kumaresan *et al.*, 2014, Mahesh *et al.,* 2016, Mallesh *et al*., 2017 and Ravikumar *et al.,* 2019), however subjecting to the prevailing condition of penis and prepuce in the present case, the preputial reconstructive surgery was preferred technique for repositioning and retention of the penis inside the preputial cavity. In contrary to the phallopexy technique used in dogs, fixation of the penis within the prepuce was not attempted in this case as it might lead to urine retention within the preputial cavity, urine scalding and further balanoposthitis as previously reported in stallions (Schumacher, 1999).

CONCLUSIONS

Thus, in this case report a novel preputial reconstruction technique for successful surgical correction of paraphimosis induced due to traumatic balanopothitis in a bull was described.

CONFLICT OF INTEREST

None.

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