Surgical Management of Prepucial Prolapse in 6 – Male Breeding Bulls

Abstract

6 - Malebreeding bulls were presented to VCC of CVAS Bikaner with the history of preputial prolapse and its hardening and paraphemosis. All the six breeding bulls under study had similar anatomical injury and had IV degree prolapse. Initially medicinal treatment was carried out in all bulls to reduce the swelling and infection. In all the animals antibiotic injection Streptopenicillin 5.0 g IM was given for 5 days and ; injection Meloxicam @ 0.2 mg/kg IM for 3 days and antiseptic dressing of the prepuce was done with Povidone iodine solution for 5 days to reduce the infection and thereafter surgery was performed. Preputial prolapse was repaired successfully via circumcision technique. After the surgery all bulls were given 60 days of sexual rest.No post-operative complications and recurrence were recorded.

Keywords: Breeding bulls, Prolapse, Prepuce, Treatment

Introduction

Prolapse of the prepuce is a serious condition in the breeding bull. These preputial injuries occures more frequently in indigenous and cross bred bulls because of their longerpendulous preputial sheath and excessive preputial skin that predisposes them to injury. There are four categories of pruputial prolapse; Grade I includes simple preputial prolapse with slight to moderate edema, Grade II incliuds moderate to severe edemathat may have superficial laceration or slight necrosis, but no fibrosis, Grade III includes severe edema with deep laceration, moderate necrosis, and slight fibrosis and Grade IV includes severe injuries of prepuce with severe edema, severe necrosis and fibrosis with or without abscessation (Prado and Morgan, 2002). The traumatic injury to prepuce and its contamination are the main cause for the preputial prolapse in breeding bulls (Vadalia et al., 2020).

Chronic prolapse of prepuce leadsto infections, necrosis and in final stage permanent prolapse, induration and constriction the orifice of prepuce (Donaldson and Aubrey, 1960). There are various techniques for surgical correction of the prolapsed prepuce have been developed (Hofmeyr, 1968). The surgical repair includes, resection and anastomosis of the damaged tissues and apposition of healthy skin margins. After the surgery breeding bulls should have at least 60 days sexual rest prior to resuming breeding (C. Armstrong 2021).

Materials and method

All the six breeding bulls presented had similar anatomical injury and had IV degree prolapse.Initially medicinal treatment was carried out in all bulls to reduce the swelling and infection. In all the animals antibiotic injection Streptopenicillin 5.0 g IM was given for 5 days and ; injection Meloxicam @ 0.2 mg/kg IM for 3 days and antiseptic dressing of the prepuce was done with Povidone iodine solution for 5 days to reduce the infection and thereafter surgery was performed. Before surgery all bulls were kept off-fed and water for 24 hrs. All were sedated with xylazine @ 0.2 mg/kg body weight and epidural anaesthesia was done by using 10 ml Lignocaine HCL. All the bulls were restrained in lateral recumbency and then close clipping of prepucial hairs was done, and the preputial cavity was irrigated with antiseptic solution (5 % Povidone iodine solution). The external layer of the prepuce was thoroughly scrubbed in the same solution to remove the necrotic debris from the ulcerated areas. A snuggly Intravenous (IV) set tube was placed inside the lumen of prolapsed prepuce and then a tourniquet was then tied around the prepuce just proximal to proposed area of incision. 10-15 mL of 2% Lignocaine hydrochloride was infiltrated around the prepuce. The external and internal preputial layers were sutured with the help of no. 1 polygalactin 910 (vicryl) along the intended resection line by simple interrupted sutures then after ligation of blood vessels, a circumferential was made around the base of prolapsed prepuce and prepuce was amputated distal to the sutures. Both the internal and external layers of prepuce were sutured together with the help of no. 1 polygalactin 910 (vicryl) by simple continuous pattern. Tourniquet and IV tube were removed. Post-operatively, In all the animals antibiotic injection Streptopenicillin 5.0 g IM was given 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 12th post-operative day and the bull was given complete sexual rest for 2 months. Recovery was uneventful in all the cases with no post-operative complications.

Result and Discussion

In present study all the cases were recovered without any complication. Preputial problem is one of the most common abnormal conditionwhich adversely affects

penileprotrusion and copulation (Arthur et al., 1996). The most common cause of preputial prolapse is its pendulous and loosely attached sheath and loose attachment of the preputial sheath to the animal body, similar findings were also observed by Karle (2010) and Padaliya et al. (2019), they also stated that anatomical deformities of the preputial sheath predisposes prepuce to get prolapse. The Grade I and II prepucial prolapse does ot requires the surgical intervention as Vadalia et al. (2021) stated in study that breeding bulls suffering with II degree preputial prolapse with acute inflammation and prepucial oedema does not need the surgical intervention. Koziol J (2023) also said in study that lower grade preputial prolapse can be treated by medicinal treatment. Chronic IV grade preputial prolapse with edema, fibrosis and necrosis requires immediate surgical intervention. In this study, in all the cases the prolapsed preputial tissue was removed surgically through circumcision with no any post-operative complication. Baxter et al. (1989) also reported 76% return to breeding soundness in bulls which were treated by circumcision method. Similar findings were reported in present case where the bull resumed normal breeding soundness after four months sexual rest.

Conclusions

The chronic prepucial prolapsed can be surgically repaired by circumcision method. Postoperatively at least 2 month sexual rest should be given to breeding bulls for complete recovery.

References

Donaldson, J. E. and J. N. Aubrey. 1960. Posthifis and prolapse of the prepuce in cattle. Australian Vet. J. 36:380.

Zemjanis, R. 1962. Diagnostic and Therapeutic Techniques in Animal Reproduction. The William~ and Wilkins Co., Baltimore, Md.

Hofmeyr, C. F. B. 1968. Surgery of bovine impotentiacoeundi. V. Surgical conditions of the preputial skin and prolapsed lining. J.S. Afr. Vet. Med. Ass. 39 (2):93.

Arthur, G.H., Noakes, D.E., Pearson, H., and Parkinson, T.J. (1996). The male animals. In: Veterinary Reproduction and Obstetrics. 7th edn. W. B. Saunders Co., Philadelphia, USA. Pp. 594-599. Baxter, G.M., Allen, D., and Wallace, C.E. (1989). Breeding soundness of beef bulls after circumcision: 33 cases (1980-1986). J. Am. Vet. Med. Assoc., 194(7): 948-952.

Prado, T.M. and Morgan, G. L. (2002). Management of preputial prolapse. Oklahoma State University (c.f. www.cvm. okstate.edu/publications/ animalhealthupdate).

Karle, A.S. (2010). Clinical studies on preputial prolapse and its management in Gir bulls. M.V.Sc. Thesis, Anand Agricultural University, Anand, Gujarat, India.

Padaliya, N. R., Vadalia, J. V., Kalariya, V. A. and Parmar, V. L. (2019). Preputial prolapse in six Gir bulls - A report. Indian Vet. J., 96(1): 64-65.

Vadalia, J.V., Tank, P.H., Dodia, V.D., Talekar, S.H., Padaliya, N.R. and Bhatt, R.H. (2020). Clinical survey on preputial prolapse in Gir bulls. Indian J. Vet. Sci. &Biotechnol., 15(3), 66-68.: 10.21887/ijvsbt.15.3.17.

Jignesh V. Vadalia, Prafulchandra H. Tank, Jayesh S. Patel, Dhaval T. Fefar and Nilesh R. Padaliya (2021). Therapeutic Management of Preputial Prolapse in Gir Bulls. The Indian Journal of Animal Reproduction, 42(2), 22–25. https://doi.org/10.48165/ijar.2021.42.2.4

C. Armstrong (2021). Management of preputial injuries in bulls. The american association of bovine practitioners. Vol 54:2 Pp. 213-214.

Koziol J (2023). Practical review of diagnosis, treatment, and prognostic indicators of acquired conditions of the penis and prepuce in the bull. : Clinical Theriogenology 2023, 15, 9642, Pp 11-17. http://dx.doi.org/10.58292/CT.v15.9642

Fig 1 Showing placement of Circumcision for removal of fibrosed prolapsed prepuce

Fig 2 completely healed prepuce on 2nd post-operative week