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Therapeutic Management of Preputial Prolapse in Gir Bulls

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ABSTRACT

Traumatic injury to prepuce followed by its contamination and infection are the main etiologies for the preputial prolapse in Gir bulls. All the six breeding Gir bulls under study had common anatomical/structural deformities of the preputial sheath. The medical/clinical management was carried out in bulls affected with 2nd degree preputial prolapse. The animals were instituted injection Streptopenicillin 5.0 g IM; injection Ceftriaxone and Tazobactam @ 5 mg/kg IM; injection Meloxicam @ 0.2 mg/kg IM and antiseptic dressing of the prepuce was done with 5 % solution of Povidone iodine. All the bulls recovered uneventfully within a week after treatment and were given sixty days of sexual rest after treatments to prevent further injury and reoccurrence of the preputial prolapsed condition. The outcome of present study suggests that the acute cases of 2nd degree preputial prolapse may recover with medical management and do not need surgical intervention.
Key words: Bull, Gir, Preputial prolapse, Fibrinous reaction, Therapeutic management.

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INTRODUCTION

Population of Gir breed cattle is more commonly seen in the Saurashtra area of the Gujarat, India. Though female animals of this breed are elite milch animals, however male animals are prone to first degree preputial prolapse due to the anatomical confirmation of prepuce (Vadalia *et al.*, 2020). Preputial injuries tend to occur more frequently in *Bos indicus* or *Bos indicus* cross bulls because of their tendency to have a longer sheath and excessive preputial skin which predisposes them to injury. Preputial injuries could be classified into four categories; (I) simple prolapse with slight to moderate edema without laceration, necrosis or fibrosis, (ii) moderate to severe edema may have superficial laceration or slight necrosis, but no evidence of fibrosis, (III) severe edema with deep laceration, moderate necrosis, and slight fibrosis and (IV) chronic prolapse with severe edema, deep laceration, severe necrosis and fibrosis with or without abscessation (Prado and Morgan, 2002).

According to (Vadalia *et al.*, 2020), traumatic injury to prepuce followed by its contamination is the main cause for the preputial prolapse in Gir bulls. Vadalia *et al.* (2020) carried out the clinical survey to study the preputial prolapse

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in 202 Gir bulls at different 41 gaushalas of the Saurashtra region, of which thirty bulls (14.85%) had pathological preputial prolapse, which varied between 2nd and 4th stages. However, Karle (2010) reported that the prevalence of preputial prolapse between 2nd and 4th stages was around 22 % in Gir bulls. In view of the above facts, a therapeutic management of the preputial prolapse in Gir bulls was made to resolve the 2nd degree pathological preputial prolapsed clinical cases.

MATERIALS AND METHODS

The etiopathology of preputial prolapse was studied by taking detailed history regarding age, cause, occurrence, degree of prolapse, appearance of prolapsed mass, history of any trauma to prepuce etc. The medicinal management of acute inflammatory cases of preputial prolapse was carried out in six Gir bulls suffering with 2nd degree preputial prolapse where inflammatory edema was marked and fibrinous reaction was minimal to prevent further damage of preputial prolapse. The animals were instituted injection Streptopenicillin 5.0 g IM; injection Ceftriaxone and Tazobactam @ 5 mg/kg IM; injection Meloxicam @ 0.2 mg/kg IM and antiseptic dressing of the prepuce was done with 5 % solution of Povidone iodine to the merit of the case for therapeutic managements of prolapsed preputial. The reduction of the swelling was attempted by therapeutic care and management for functional recovery of prolapsed prepuce without surgery in Gir bulls.

RESULTS AND DISCUSSION

In the present study, traumatic injury to prepuce followed by its contamination and infection were the main etiology for the preputial prolapse in all the animals. These findings were in accordance with the observations of Karle (2010) and Padaliya *et al*. (2019). All the six breeding Gir bulls had common anatomical/structural deformities of the preputial sheath. Too pendulous and loosely attached sheath (prepuce below the carpus), poor attachment of the sheath to the body in the navel region (low preputial angle), wide preputial orifice and agenesis or atrophy of the preputial retractor muscles were the main predisposing factors for chronic preputial prolapse. Karle (2010) and Padaliya *et al*. (2019) have also reported similar anatomical deformities of preputial sheath, which predisposes prepuce to prolapse. Gir bulls are docile with pendulous external genitalia which predispose the everted prepuce for the trauma at the time of walking, standing and grazing.

The medical/clinical management was carried out to prevent further damage of preputial prolapse in breeding bulls affected with 2nd degree preputial prolapse where inflammatory edema was marked but the was minimal (Table 1). All the six bulls recovered uneventfully within a week after treatment (Fig. 1). All these bulls were given 60 days of sexual rest after treatments to prevent further injury and reoccurrence of the preputial prolapse in the bulls. A comparable medical/clinical management for acute preputial prolapse without necrosis and fibrosis have also been described by Sangeeta *et al*. (2010), whereas, Memon *et al*. (1988) and Anderson (2008) reported medical management in combination with physiotherapy for acute preputial prolapse in bulls. Similarly, Prado *et al*. (2016) reported a medical management in combination with physiotherapy and other management for acute fresh cases of preputial prolapse in bulls.

In the present study, all the bulls recovered uneventfully from acute 2nd degree preputial prolapse following medical treatments. This suggests that the acute cases of 2nd degree preputial prolapse may recover with medical management and do not need surgical intervention. During the therapeutic management, the bull should be kept loose in the pen with kachcha floor which may reduce the chances of physical trauma to prepuce. Moreover, bulls did not prefer to sit on the pakka floor due to wetness of floor due to urination and defecation. The kachcha floor absorbs the urine and floor dries earlier, and this will also help to prevent the secondary contamination and infections. In stall feeding, bull does not have any choice to move on the dry floor and then sitting on the wet floor during night time predisposes the secondary contamination and infection of the porly comformed prepuce. During therapeutic management, the kachcha floor hastens the recovery in bull as compared to the bull kept on the stall feeding with pakka floor.

CONCLUSIONS

From the present study, it was concluded that in Gir bulls suffering with 2nd degree preputial prolapse with acute inflammation the medicinal management is possible without the need of surgical intervention.

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Fig. 1: Gir bull with 2nd degree preputial prolapse before and after medical management

Table 1: Clinical observations of six bulls with 2nd degree of preputial prolapse in which therapeutic management was used

Case No.	Age (yrs)	Cause	Signs and Symptoms	Nature of prolapse	Consistency and reducibility	Retraction	Medicinal management	Return to service
1	4	Trauma	Laceration, mucosal damage, inflammatory changes, tonic, vascular, no fibrosis	Moderate, no adhesions, phimosis	Soft, mild reducible	Moderate	Inj. DCR 5.0 g IM, Inj. Intacef Tazo @ 5 mg/kg IM, Inj. Melonex @ 0.2 mg/kg IM and ASD	60 days
2	7	Trauma	Laceration, mucosal damage, inflammatory changes, tonic, vascular, no fibrosis	Moderate, no adhesions, phimosis	Soft, non-reducible	Mild	Inj. DCR 5.0 g IM, Inj. Intacef Tazo @ 5 mg/kg IM, Inj. Melonex @ 0.2 mg/kg IM and ASD	60 days
3	2.5	Trauma due to mounting	Mucosal damage, inflammatory changes, tonic, vascular, no fibrosis	Moderate, no adhesions, phimosis	Soft, non- reducible	Mild	Inj. DCR 5.0 g IM, Inj. Intacef Tazo @ 5 mg/kg IM, Inj. Melonex @ 0.2 mg/kg IM and ASD	60 days
4	3.5	Trauma during mating	Laceration, mucosal damage, inflammatory changes, tonic, vascular, no fibrosis	Moderate, no adhesions, phimosis	Soft, moderate reducible	Moderate	Inj. DCR 5.0 g IM, Inj. Intacef Tazo @ 5 mg/kg IM, Inj. Melonex @ 0.2 mg/kg IM and ASD	60 days
5	3.5	Trauma during mating	Laceration, mucosal damage, inflammatory changes, tonic, vascular, no fibrosis	Moderate, no adhesions, phimosis	Soft, non-reducible	Mild	Inj. DCR 5.0 g IM, Inj. Intacef Tazo @ 5 mg/kg IM, Inj. Melonex @ 0.2 mg/kg IM and ASD	60 days
6	6	Trauma	Laceration, mucosal damage, inflammatory changes, mild tonic, mild vascular, no fibrosis	Moderate, no adhesions, phimosis	Soft, non-reducible	Mild	Inj. DCR 5.0 g IM, Inj. Intacef Tazo @ 5 mg/kg IM, Inj. Melonex @ 0.2 mg/kg IM and ASD	60 days

CONFLICT OF INTEREST

None.

REFERENCES

Anderson, D.E. (2008). Surgery of the prepuce and penis. *Vet. Clinics of Food Animals,* **24**(2): 245-251.

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

Memon, M.A., Dawson, L.J., Usenik, E.A. and Rice, L.E. (1988). Preputial injuries in bulls: 172 cases (1980-1985). *J. Am. Vet. Med. Assoc.,* **193**(4): 481-485.

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

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

Prado, T.M., Lionel, J.D. and Schumacher, J. (2016). Surgical procedures of the genital organs of bulls. *Vet. Clinics of Food Anim.,* **32**(3): 701-725.

Sangeeta, D., Gangwar, A.K., Waghaye, J.Y. and Singh, H.N. (2010). Preputial prolapse and its surgical correction in a crossbred bull. *Intas Polivet*, **11**(I): 46-47.

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.