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Case Report

Therapeutic Management of Pre-Partum Vaginal Prolapse in a Crossbred Cow: A Case Report

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Abstract

A pluriparous crossbred cow presented at Veterinary Clinical Complex, C.V.Sc. & A.H., ANDUAT, Kumarganj, Ayodhya with the history of last week of gestation. On the basis of history and gynaeco-clinical examination, the case is diagnosed as Grade I vaginal prolapse and managed with calcium and phosphorus therapy along with adoption of other management measures. The case was recovered uneventfully. Only few reports are available which suggest deficiency of calcium and phosphorus as a cause of vaginal prolapse in crossbred cows. Therefore, the present case placed on the record.

Keywords: Crossbred Cow, Prepartum, Therapeutic Management, Vaginal Prolapse

Introduction

Eversion and prolapse of vagina, with or without prolapse of cervix can occur in all domestic animals but most commonly in cattle and sheep (Roberts, 1971; Aiellon and Moses, 2016). Vaginal prolapse in bovines most commonly occur in last 2-3 month of gestation (Roberts, 1971), but in majority of cases during last two weeks of pregnancy (Sloss and Dufty, 1980). Moreover, it can occur during postpartum period (Roberts, 1971), during oestrus (Youngquist, 1997) and post-oestrus period (Yotov *et al.*, 2013) in non-pregnant cows. Classification of vaginal prolapse is based on genital and other tissue involvement and persistence of prolapse. On the basis of this criteria, different workers (Youngquist, 1997; Meisner and Anderson, 2008; Aiellon and Moses, 2016) classified vaginal prolapse as grade I (intermittent prolapse, especially when recumbent), II (continuous prolapse), III (continuous prolapse of vagina, bladder and cervix) and IV (grade II or III with tissue damage by trauma, infection, or necrosis. Grade I or first-degree prolapse may go unnoticed but continued exposure to sun light, wind and fecal contamination lead to the next stage.

The cause of vaginal prolapse is unclear (Noakes *et al.*, 2019) but the common denominator in virtually every instance of vaginal prolapse is incompetence of the constrictor vestibule and constrictor vulvae muscles (Morrow, 1986). In addition to genetic predisposition, endogenous estrogen is primarily blamed as the condition most commonly occur in last 2-3 month of gestation when large amount of placental estrogen is secreted which causes relaxation of pelvic ligaments, perineum, adjacent structures and edema and relaxation of vulva and vulvar sphincter muscles. Moreover, increased intra-abdominal pressure (pressure transmitted to the flaccid pelvic structures tending to force the relaxed and loosely attached vaginal floor and walls through the vulva) due to gravid uterus, high roughage feeding, intra-abdominal pressure also increased in recumbent animals; poor conformation, previous obstetric damage to birth passage, close confinement and hypocalcaemia play a part. Occasionally, vaginal prolapse is associated with the cystic ovaries (excessive estrogen production). Vaginal prolapse may be attributed to deficiency of certain macro or micromineral in general, calcium and phosphorus in particular (Akhtar *et al.*, 2008; Kumar, 2015 and Hasan *et al.*, 2017). In addition to atony of skeletal and smooth muscle and other physiologic effect of hypocalcemia are ruminal stasis and secondary bloat, constipation, relaxation of anus and loss of anal reflex as well as fully dilated cervix and normal presentation of fetus (Radostits *et al.*, 2009).

Case History and Clinical Observation

A pluriparous crossbred cow presented at Veterinary Clinical Complex, C.V.Sc. & A.H., ANDUAT, Kumarganj, Ayodhya with the history of last week of gestation. Owner stated that small pink mass is protruding from vulva when cow is in recumbent position but disappears when cow standing up, however cow is feeding, defecating and urinating normally. Clinical examination reveals normal vital parameters, relaxed pelvic ligaments and perineum. Examination of vagina revealed that mucus is discharged from relaxed vulva and protruding part is the portion of vagina; further examination confirmed that vagina is patent with one finger cervical dilation. There is loss of anal reflex and relaxation of anus was noticed. On trans-rectal palpation, the fetus was found live and in anterior longitudinal presentation and dorso-sacral position. On the basis of history and gynaeco-clinical examination the case is diagnosed as Grade I vaginal prolapse (Fig.1).

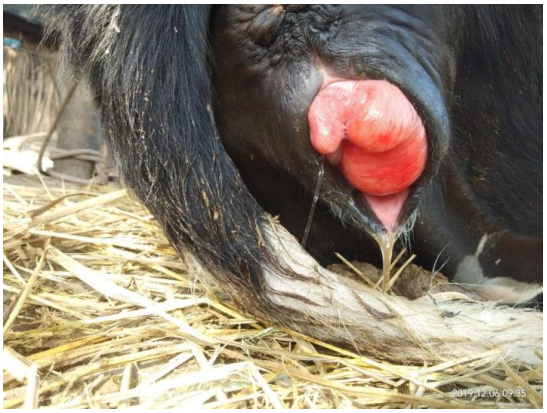

Figure 1: Grade I vaginal prolapse

Figure 2: Photograph showing vulva after correction of grade I vaginal prolapse

Treatment and Discussion

As the case was diagnosed as grade one vaginal prolapse and keeping the view of near parturition, conservative method was adopted to manage the case. First of all, perineal region of cow was washed with clean water then low epidural anaesthesia was given at first intercoccygeal space using lignocaine hydrochloride (2%) 5ml to abolish pelvic sensation, prevent restraining, defecation and to facilitate easy manipulation of vagina for reposition at its original anatomic location. The prolapsus was made aseptic by washing with mild potassium permagnate solution (2%) followed by warm physiologyical saline solution. Then prolapse mass was lubricated with liquid paraffin and lifted with both hands then replaced to its original position using thumb fist. To abolish pain and swelling, if any, a course of anti-infalmatory drug (Injection Melonex 15 ml, intramuscularly) was given once in a day for three occasions. Moreover, on assumption that calcium and phosphorus deficiency may be the cause of vaginal prolapse, calcium and magnesium borogluconate (inj Mifex 450 ml by slow i.v. route) was administered once and Injection Tonophosphan 10 ml given intramuscularly once daily for three days. Simultaneously, owner was advised to place the cow in a stall with elevated rear quarter and to feed the cow in divided doses along with reduction in roughage content of diet. The cow recovered uneventfully (Fig. 2), delivered a healthy calf at full term and no vaginal prolapse was observed after parturition.

Severity and extent of damage of prolapsus is use to assess treatment options. In some cases of vaginal prolapse, irritation of vagina causes tenesmus and secondary prolapse of the rectum (Kumar *et al.,* 2018). Moreover, vaginal prolapse concomitant with rectal prolapse has been recorded in some case reports in cattle (Patel *et al.*, 2018) and buffaloes (Chaudhary and Dabas, 2013; Kumar *et al.,* 2018). Vaginal prolapse might be confused with vaginal cystocele (Kumar *et al.*, 2018) and vaginal neoplasia (Singh *et al.*, 2018). The favorable response of calcium and phosphorus therapy in our case is also in agreement with earlier reports which suggest that calcium and phosphorus deficiency may cause vaginal prolapse (Akhtar *et al.*, 2008; Kumar, 2015 and Hasan *et al.*, 2017). Depending on severity and extent of damage three methods may be use to manage vaginal prolapse in cow viz. conservative methods, suturing methods or truss (Parikh *et al.*, 2018) and surgical techniques (Caslick's operation, Farquarson's operation and Winkler's operation) are use to manage vaginal prolapse (Jackson, 2004). Like in our case, Noakes *et al.*, (2019) also suggested that if prompt attention is given simple measures often succeed.

Thus, on the basis of present findings and previous available reports it may be concluded that grade I vaginal prolapse in advanced pregnant cow can be managed well with use of calcium and phosphorus therapy along with adoption simple management measures. Moreover, to manage the case successfully on economic and welfare ground early diagnosis and adoption of appropriate corrective measures are important.

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Conflict of Interests

There is no conflict of interest.

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