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Pre-Partum Cervico-Vaginal prolapse in a gir cow

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Abstract
A Gir cow of 13 years old and 8.5 months pregnant was presented to Cattle Breeding Farm with cervico-vaginal prolapse. In this case, exposed part was swollen, reddish pink and lacerated. The cow was restrained on sternal recumbancy and epidural anaesthesia (2% lignocaine hydrochloride) was administered. The prolapsed mass was made aseptic by washing with 2% potassium permanganate solution and was set *in-situ* in the pelvic cavity. The animal was kept on antibiotic, anti-inflammatory and anti-histaminic drugs besides fluid therapy for three days. The prolapsed mass was repositioned following the standard procedure and a modified Buhner's technique, using sterile cotton thread as a suture material, was applied parallel to vulval apart from vagina beneath the skin to keep it in position. In the cow, following treatment no complications and disfigurement of the vulvar area was noticed. A successful therapeutic management of prepartum cervico-vaginal prolapse in a Gir cow is discussed.

Keywords: Gir cow, Pre-partum, Prolapse, Therapeutic management.

Introduction
Saurashtra region of Gujarat state is famous for Gir cows. The Gir cows are well known for their dairy characteristics and resistance to tropical diseases. In dairy cows, reproductive disorders negatively affect their productive and reproductive performances. Among the reproductive disorders in dairy cows, cervico-vaginal prolapse has been considered as one of the major problems. The cervico-vaginal prolapse is most common in dairy cows (Wachida and Kisani, 2011) [20], however rectovaginal prolapse in the cow is also reported by some researchers (Patel *et al.*, 2018) [3]. Moreover, recto-cervico-vaginal prolapse in buffalo is also reported occasionally (Rajesh *et al.*, 2018) [3]. The case should be treated as soon as possible; otherwise the prognosis will be grave. In cervico-vaginal prolapse, there is eversion of vagina and cervix over caudal attachment, then from the vulvar commissure protrude outside and finally the inside layer remains out (Whittier, 2007) [21]. Higher circulating estrogen during last trimester of pregnancy has been considered as key predisposing factor for prepartum cervico-vaginal prolaps, but the exact reason is unclear. Elevated circulating estrogen enhances relaxin hormone production which causes relaxation of the pelvic ligaments as well as surrounding soft tissue structures (Wolfe, 2009) [22]. Additionally, gravid uterus increases intra-abdominal pressure which may further predispose vaginal prolapse. Other less known predisposing factors are intra-abdominal fat accumulation, rumen distension, larger fetus, twins and hilly habitat. Dietary factors such as hypocalcemia, food containing estrogenic substance (clover, soybean meals etc.) are also associated with this disorder (Miesner and Anderson, 2008) [13]. This study highlights the successful therapeutic management of pre-partum cervico-vaginal prolapse in a Gir cow.

History and Clinical observations
A pluriparous advanced pregnant Gir cow was presented with the history of cervico-vaginal prolapse at Cattle Breeding Farm, Junagadh Agricultural University, Junagadh. On physical examination, it was found that cow was lying in sternal recumbency and the prolapsed mass was hanging through the vulva and resting on the ground (Fig.1).The cow was observed to be apparently healthy on clinical examination and the physiological parameters (temperature, respiration and pulse) were also within the normal range. After examination, the prolapsed

mass was found swollen, oedematous and mild laceration in the exposed part. Cervical seal was intact. The cow could not pass urine due to prepartum prolapse and at frequent intervals exhibited intermittent straining.

Fig. 1 **Fig. 2** **Fig. 3**

Cervico-vaginal prolapse in a Gir cow Application of Rope Truss Complete recovered animal

Therapeutic Management

The animal was restrained on sternal recumbancy and analgesia was induced using 2% lignocaine hydrochloride (5 ml) as a caudal epidural block. The prolapsed mass was cleaned thoroughly with clean water to remove dung and dirt. The mass was further washed with potassium permanganate solution (2% solution) to avoid contamination and lubricated with liquid paraffin. Then the mass was lifted above is chial arch to drain out urine from bladder and replaced to its normal anatomical position with gentle push and meticulous pressure with half closed hand. Buhner's suture was applied over vulvar lips and rope truss was fitted to prevent further complications (Fig.2). After complete repositioning of the prolapsed mass, the cow was treated with fluid therapy viz. inj. 5% Dextrose normal saline @ 1000ml once. Inj. Ceftriaxone @ 4gm was given intramuscularly for three successive days to prevent further secondary bacterial infection. The supportive treatment was given by Inj. Meloxicam @ 0.5 mg/kg b. wt., Inj. Clade-12 @ 15ml and Inj. Chlorphenaramine maleate@ 10ml total dose intramuscularly for 3 successive days to reduce histamine release and inflammation. The cow stopped tenesmus and started eating and drinking normally within 12hrs. The sutured area was dressed daily for one week with Betadineointment. The animal recovered successfully (Fig.3) and suture was removed on 7th day of incidence.

Results and Discussions

Genital prolapse leads to septicemic condition, hence considered as a life threatening (Bhattacharya *et al.*, 2007) [5].The genital prolaps commonly occurs during last trimester of pregnancy particularly in pluriparous animal as compared to heifer (Hasan *et al.*, 2017) [9]. Our finding is inconsonance with earlier report where the maximum number of such cases was noticed in the last 2 months of gestation (Noakes *et al.*, 2001) [14]. Alteration of circulating estrogen hormone during last trimester of pregnancy may lead to cervico-vaginal prolapse by enhancing relaxation of sacro-sciatic ligament including other adjacent ligaments (Wolfe, 2009) [22]. Epidural anaesthesia is mandatory before handling of prolapse mass as it leads to tenesmus. In such case, caudal epidural block using lignocaine hydrochloride (2%) provides satisfactory regional analgesia which prevents straining. Epidural analgesia also helps easy return of protruding organs (Noakes *et al.*, 2009). Although, xylazine is contra indicated during pregnancy, low dose is recommended for easy restrainingof animal (Fazili and Bhattacharyya, 2008). Miesner and Anderson (2008) reported that lifting of the uterus results straightening of urethra for easy urination, which also improve cow comfort and subsequently reduce straining. Vaginal prolaps has been successfully managed by administration of exogenous progesterone (Bhattacharya *et al*., 2012) [4]. However, during late gestation, as progesterone prolongs pregnancy so, generally not recommended (Roberts, 2004) [18].

In this study, rope truss was used for successful management of cervico-vaginal prolapse. In a similar line, others reported that rope truss is very effective, non-invasive, easy and economic method for successful management of prepartum vaginal prolapsed in dairy bovines (Sharma *et al*., 2017 and Lakde *et al.*, 2014) [19, 12]. It has been reported that for successful management of cervico-vaginal prolapse various authors used surgical or nonsurgical techniques (Kumar, 2015) and medicines (Dhillon *et al*., 2006) [6], but the results varied among the studies. Moreover, cervico-vaginal prolapse was successfully managed by Patra *et al.* (2014) [16] using retention suture or Buhner's suture technique. Buhner's sutures are also recommended for repair of prolapse of genitalia in buffaloes as it does not cause cicatrization at vulvar region (Jyothi *et al.*, 2015). Bhattacharya *et al.* (2012) [4] used modified Buhner's technique with sterile infusion set tubing as suture material for the treatment of 26 crossbred cows suffered from genital prolapse and observed permanent retention of prolapsed mass in all cows. In another case, Ahmed and Jena (2015) successfully managed prepartum recurrent recto-vaginal prolapse by using hidden vertical mattress suture of cotton material (Umbilical Tape) in a dairy cow. Further, modified mint chews method was used by Ezakial *et al.* (2018) to control chronic cervico vaginal prolapse in a post-partum Gir cow. Abdisa (2018) observed that modified Buhner's technique, using infusion set tubing as suture material resulted satisfactory result in preventing recurrence of the prolapse. Parental administration of antibiotic helps to control secondary bacterial infection; whereas, anti-inflammatory and antihistaminic drugs help to correct pain and inflammation.

Conclusion

In this case study, successful therapeutic management of prepartum cervico-vaginal prolapse in a Gir cow was reported. Buhner's suture technique and rope truss method can be successfully used for management of cervico-vaginal prolapse in dairy cows. Along with that administration of supportive treatment with antibiotics, analgesics and fluids to prevent secondary bacterial infection to the prolapsed mass under field conditions should be followed. The cervico-vaginal prolapse case should be intervened as early as possible for better prognosis.

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