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Dystocia due to incomplete cervical dilatation and its successful management through cervicotomy in a non-descript cow

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Abstract

The present case study reports a case of dystocia due to incomplete dilatation of cervix in a non-descript cow and its successful management through cervicotomy under epidural anaesthesia resulting into delivery of a live male calf.

Keywords: Cervicotomy, cow, dystocia, epidural anaesthesia, incomplete dilatation of cervix

Introduction

Cervix is an important protective physical barrier for uterus during gestation. Before parturition, several hormonal changes take place influencing the physio-chemical echotexture of the cervix. In bovines, the incidence of dystocia is quite higher than other domestic animals (Dutt *et al.*, 2021) [1]. Dystocia due to incomplete cervical dilatation (ICD) has been associated with the hormonal aberrations at term (Das *et al.*, 2008) [2]. As bovine cervix being more fibromuscular and tightly closed during gestation, may lead to severe dystocia if not properly relaxed and dilated. Failure of cervical dilatation includes cervical induration, primary uterine inertia, insufficient pre-calving oestrogen concentration, elevated cortisol to progesterone ratio, hypocalcaemia, disturbed echotexture of cervix due to uterine torsion (cervical ischaemia) and inadequate preparation with estrogen and relaxin (Sloss and Duffy, 1980) [6]. The present case study reports a case of dystocia due to ICD in a non-descript cow and its successful management through cervicotomy under epidural anaesthesia resulting into delivery of a live male calf,

Case history and Observations: A non-descript cow from local gaushala was brought to clinics of the university with the history of vaginal prolapse of grade 2 on previous day which was managed by local para veterinarian staff at gaushala. Consequently, animal was straining continuously and rupture of both the water bags took place 4 hours back (Fig. 1). Anamnesis revealed no attempt of obstetrical manoeuvres but the animal was recumbent due continuous straining and exhaustion. The physiological parameters recorded were rectal temperature (98.6°F) and respiratory rate (15 per minute). The superficial necrosis of cervical mucosa due to ischemia around external cervical os was observed. Per-vaginal examination revealed live fetus in anterior longitudinal presentation (Fig. 1) and hard ring of external cervical os. It was decided to perform cervicotomy rather than for induction or caesarean section.

Treatment: The vulvar lips, exposed cervix and perineal area was cleaned with KMnO₄ solution (1:1000). Then, caudal epidural anaesthesia (Inj. LOX 2%) between C1-C2 coccygeal vertebrae @ 1ml/100 kg body weight was given. The povidone iodine solution was applied over the cervix and the surrounding area. After that, two longitudinal surgical incisions were given on lateral aspect of cervix at 3 (6-inch-long) and 9 O'clock position (4-inch-long). A live male calf was delivered by gentle traction (Fig. 2).



Fig 1: Clinical presentation of case



Fig 2: Live male calf delivered after cervicotomy

During this procedure, Inj. Normal saline solution 3 litres IV, Inj. Metronidazole 3500 mg IV, Inj. Dexamethasone 40 mg IM, Inj. Ceftriaxone with Sulbactam 4.5 gm IM, Inj. Tribvet® (Intas Pharmaceuticals Ltd) 10 ml IV and Inj. Maclote KT® (Macnor Life Sciences Pvt Ltd,) 20 ml IM were administered. This treatment was prescribed for next 5 days except Inj. Maclote KT® and Inj. Calcium-borogluconate 450 ml IV were administered once only. After delivery of the calf, cervix was sutured in continuous pattern by using Polygalactin 910 (vicryl) No. 2 (Fig. 3) which was followed by topical application of Soframycin cream plus xylocaine jelly over the cervico-vaginal region and same was advised for next 3 days. Buhner's sutures were applied on vulvar mucosa to prevent reoccurrence of prolapse. The animal had an uneventful recovery.



Fig 3: Cervix after suturing of cervical mucosa

Discussion

Attempts could be made to dilate the cervix manually if possible using sponge tents and local anaesthetics (Kodagali, 2003) [3], but this option would result into unnecessary delay as fetus was live, water bags were not intact and the external ring of cervix was quite hard. In case of dead fetus, the obstetrician should opt hormonal therapy including cloprostenol, estrogens and valemthamate bromide along with calcium therapy. Caesarean section appears to be the last resort when all attempts at cervical dilation had failed. Cervicotomy as a managemental technique in ICD was reported earlier in cattle (Sathiamoorthy *et al.* 2011) [5]. Cervicotomy is contraindicated if cervix is thick, indurated as it might lead to uterine tear (Noakes *et al.*, 2009) [4]. In brief, cervicotomy is quite, simple and effective method for managing a case of incomplete cervical dilatation and to avoid the risk of caesarean section. Secondly, the treatment is also cost-effective with more chances of dam's survival.

Conflict of Interest: None to declare

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