Case Report

MANAGEMENT OF FOETAL BONE REMNANTS OF A RETAINED MACERATED FOETUS BY PARALUMBAR LAPAROHYSTEROTOMY IN A KANKREJ COW

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ABSTRACT

A Kankrej cow was presented to the Large Animal Obstetrical Unit of the Veterinary Clinical Complex, Veterinary College and Research Institute, Theni, with a history of foul-smelling vaginal discharge persisting for past one month and the cow had been previously treated for fetal maceration six months earlier during gestation. Per-vaginal examination revealed that the external os of the cervix was dilated to one finger width, with mucoid, foul-smelling discharge and per rectal examination revealed a hard mass in left uterine horn. Ultrasound examination confirmed the presence of hyperechoic mass in the left uterine horn. Based on the case history, rectal examination and ultrasound findings, the case was diagnosed as foetal bone remnants due to incomplete evacuation of macerated foetus. Despite administering prostaglandin (500 µg IM) to induce cervical dilation, the cervix did not sufficiently dilate. Therefore, laparo-hysterotomy was planned to remove the foetal bone remnants under local and paravertebral nerve block using 2 per cent lignocaine hydrochloride. Post-operative care included antibiotics, anti-inflammatory, antihistamine and supportive therapy for five days along with wound management. The cow had an uneventful recovery, with complete wound healing. Skin sutures were removed 14 days post-operation. The cow exhibited normal estrous cycle after a month of surgery.

Key words: Kankrej cow, foetal maceration, ultrasound, hormonal therapy and laparo-hysterotomy.

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INTRODUCTION

Foetal maceration is commonly observed in cows and buffaloes (Sood, *et al.,* 2009) but may rarely occur in mares (Burns and Card, 2000), small ruminants (Mehta *et al.,* 2005) and companion animals. In large ruminants, foetal maceration typically occurs after the third month of gestation, when foetal bones are sufficiently developed (Roberts, 2004). Incomplete abortion after the third month of gestation is the primary cause of retained foetal bony masses in the uterus of cows and buffaloes (Sood, *et al.,* 2009). The main factors leading to foetal maceration are an open cervix and a deceased foetus at body temperature. After foetal death and cervical dilation, bacteria enters the uterus through the dilated cervix and through a combination of putrefaction and autolysis, the soft tissues are digested, leaving a mass of foetal bones within the uterus (Drost, 2007). The prognosis for future fertility is generally poor following the manual removal of foetal bones per vaginum through a dilated cervix or via surgical intervention (Roberts, 2004; Drost, 2007). This case report describes the surgical removal of retained foetal bony parts in a Kankrej cow.

CASE HISTORY AND OBERVATION

A four-time calved Kankrej cow was presented with a history of continuous foul-smelling vaginal discharge for the past one month and previously was treated locally for maceration. On per-vaginal examination, copious amounts of yellowish, foul-smelling mucoid discharge was observed (Fig.1), with the external os of the cervix dilated to one finger width. Per-rectal examination revealed a hard mass at the tip of the left uterine horn along with increased uterine wall thickness. Ultrasound examination confirmed the presence of a hyperechoic mass in the left uterine horn lumen and increased endometrial thickness. An injection of Prostaglandin @ 500 µg I/M was administered, but after 48 and 72 hours, no improvement in cervical dilation was noted. All other vital parameters were within normal limits, though hematological findings indicated leucocytosis.

In standing position, a left flank incision (Fig.3) was made under local and paravertebral nerve block (Fig.2) using 2 per cent lignocaine hydrochloride. The foetal remnants were found lodged near the tip of the left uterine horn, with noticeable thickening of the uterine endometrium. Approximately 200 grams of foetal bone remnants were surgically removed through incision on the lateral aspect of the left uterine horn (Fig. 4,5 and 6). Upon incising the uterus, a hypertrophied endometrium was observed. The uterus was closed using a two-layer inversion suture pattern of Cushing followed by Lambert with Poly glycolic acid (PGA) 1/0 (Fig.7). The muscle layer was closed with a Ford interlocking suture using Poly glycolic acid 1 and the skin was closed with interrupted sutures using silk.

Postoperative treatment included intravenous fluid therapy, inj. enrofloxacin at 7.5 mg/kg body weight for 7 days, inj. meloxicam at 0.2 mg/kg body weight for 5

days, and inj. chlorpheniramine maleate (10 ml) administered intramuscularly for 5 days. The animal showed an uneventful recovery in 7 days. Skin sutures were removed 14 days post-operation. The cow exhibited normal estrous cycle after a month of surgery.

The histopathological examination of the endometrium (Fig. 9) revealed several key findings such as endometrial wall with notable proliferation of stromal cells, accompanied by lymphocytic infiltration, as well as infiltration by plasma cells and histiocytes. The endometrial glands showed atrophy with decreased granularity and the tissue exhibited reduced thickness. Significant fibrosis was observed with increased collagen deposition. Multifocal, Vascular and necrotic lesions vascular congestion and areas of petechial to ecchymotic hemorrhage were present throughout the endometrial tissue. The myometrium demonstrated atrophy with reduced wall thickness and decreased cellularity. There was also increased collagen deposition, indicating fibrosis with scar tissue formation. Additionally, focal areas of necrosis were identified with evidence of karyorrhexis and karyolysis suggesting advanced cellular breakdown. These findings collectively indicate severe degenerative and inflammatory changes of the uterine tissue, likely secondary to prolonged infection or trauma, contributing to the overall compromised uterine integrity.

RESULTS AND DISCUSSION

Fetal maceration is a pregnancy complication due to fetal death which may occur at any stage of gestation. However, it is more common after the fourth month. In domestic animals, pregnancy loss is possible at any stage of gestation. Fetal maceration has been documented in cattle, sheep and mares, but is most commonly seen in cattle and buffaloes (Purohit and Gaur, 2011). When fetal death occurs in the second or third trimester and is accompanied by a purulent discharge through the vulva, the condition is termed maceration (Arthur *et al.,* 1989). Phogat *et al.,* (1994) reported attempts to expel the fetus using drugs such as estrogen, prostaglandins, and valethamate bromide, noting that treatment may fail if the cervix is hard and indurated (Roberts, 2004) or if the fetus is structure less. Caesarean section is recommended as a last remedy for removing a macerated fetus when hormonal treatment is ineffective (Kumar *et al.,* 2013). In this case, inj. prostaglandin was initially administered, but due to lack of improvement, a surgical procedure was performed to remove the fetal remnants from the uterus, consistent with the approaches suggested by Kumar *et al.* (2013). In cases unresponsive to hormonal therapy, surgical removal remains the last option.

The longer the maceration persists, the more severe the damage to the endometrium and the poorer the prognosis (Bhattacharyya *et al.,* 2015). However, in this case, the cow made a full recovery without further complications, likely due to timely surgical intervention and immediate removal of the macerated fetal bones. Successful surgical management of fetal maceration in cattle has also been reported by Rangasamy et al. (2015) and Prabaharan *et al.* (2020).

Fig.1 Foul smelling vaginal discharge

Fig. 2 Local inverted L block anaesthesia

Fig. 3. Left upper flank skin incision

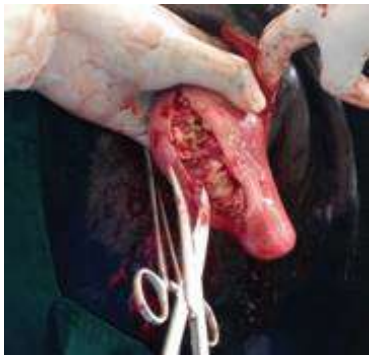

Fig.4 Exposure of uterine horn through incision

Fig. 5 Removal of foetal remnant bone

Fig. 6 Removed foetal bones 200gms)

Fig. 7 Uterine suture
(Double suture pattern)

Fig. 8 Post-operative recovered animal

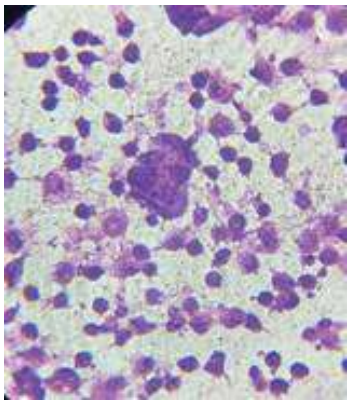

Fig. 9 Histopathology of uterus with macerated foetus

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