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R Nithyashree
Under Graduate Student, Fourth Professional Year (B.V.Sc., & AH), Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Science University, Tamil Nadu, India

S Vigneshwara
Under Graduate Student, Fourth Professional Year (B.V.Sc., & AH), Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Science University, Tamil Nadu, India

M Murugan
Assistant Professor, Department of Clinics, Veterinary, College and Research Institute, Namakkal, Tamil Nadu, India

K Senthilkumar
Assistant Professor, Department of Veterinary Gynaecology and Obstetrics, Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Science University, Tamil Nadu, India

R Ezakial Napolean
Professor and Head, Department of Veterinary Gynaecology and Obstetrics, Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Science University, Tamil Nadu, India

M Selvaraju
Dean, Veterinary College and Research Institute, Namakkal, Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Science University, Tamil Nadu, India

Corresponding Author:
M Murugan
Assistant Professor, Department of Clinics, Veterinary, College and Research Institute, Namakkal, Tamil Nadu, India

Successful management of Fetal maceration in a crossbred Holstein Friesian cow

R Nithyashree, S Vigneshwara, M Murugan, K Senthilkumar, R Ezakial Napolean and M Selvaraju

Abstract
A 5-Year-old crossbred Holstein Friesian in her second parity was presented to Veterinary Clinical Complex, Namakkal with the complaint of straining noticed along with foul smelling purulent vaginal discharge for past three days. As per history, animal had completed 9 months of gestation. On obstetrical examination, cervix was partially dilated and foetal bony parts were palpated in the vaginal passage as well as in uterus. Foetal bones were removed after complete cervical dilatation per-vaginally after proper lubrication with carboxy methyl cellulose. Post obstetrical ultrasonography revealed the absence of remnants and bony structures in uterus.

Keywords: Holstein friesian cow, foetal maceration, per-vaginal delivery, douching

Introduction
Foetal maceration is a rare clinical condition in cows they typically occurs following retention of a dead foetus during mid-gestation in contrast to foetal mummification which usually accompanied by closure of cervix, presence of active functional CL and the uterus will be apparently sterile, however, maceration is usually characterized by septic process, suppuration, putrefaction and softening of foetus and foetal tissues (Burns and Card, 2000) [2]. The foetal maceration occurs as a result of exposure to bacteria that are responsible for the foetal death or arrive ascending through a dilated cervical os (Drolst, 2007; Chaudhari and Dabas, 2018) [4, 3] or due to imperfect cervical dilatation (Manikandan *et al.*, 2020) [6] or due to uterine torsion (Senthil Kumar *et al.*, 2022) [12] with foul smelling reddish grey discharge (Prabaharan *et al*, 2022) [8]. The protracted cases of foetal maceration will lead to compromised fertility leading to reproductive culling of affected cows. Hence, immediate surgical or medical intervention will reduce the odds of pregnancy failure and preserves fertility in dairy cows (Robert, 1971) [11]. The present case describes the medical management of foetal maceration in a cross bred Holstein Friesian cow.

Clinical examination
A five years old pluriparous crossbred Holstein Friesian cow presented to large animal Obstetrics unit with the history of full-term pregnancy associated with purulent vaginal discharge for three days. Animal had normal temperature and pulse rate with off-fed and dehydration. Per-rectal examination revealed presence of distinct crepitating sound among the foetal bones in the left uterine horn with passing of foul-smelling purulent discharge through the vagina. Per-vaginal examination found that the dilated os of cervix and presence of foetal bones could be appreciated (Fig.1).

Treatment and Discussion
Based on the anamnesis, clinical observation and signs the case was diagnosed as foetal maceration. Initially the animal was treated with intravenous administration of fluid therapy (Inj. Ringers lactate @ 3 L) and (Inj. 20% Dextrose) with multivitamins (Tribivet @ 10 ml), antibiotics (Inj. Oxytetracycline @ 20 mg/kg BW), antihistaminics (Inj. Chlorpheniramine Maleate @ 100 mg IM). After sufficient lubrication (using diluted carboxy methyl cellulose) followed by obstetrical manipulation (Transcervical removal) was performed under epidural anaesthesia (2% Lignocaine hydrochloride @ 5 ml) (Fig.2.) the foetal bones were delivered manually (Fig.3). Douching was performed by using 1% $KMnO_4$ solution. Post obstetrical ultrasonography performed to confirm that no foetal bony remnants retained in the uterus.

As a post-operative therapy the antibiotics, antihistaminics and non steroidal anti-inflammatory drugs (Inj. Flunixin Meglumine @ 2.2 mg/kg BW IM) were followed for five days and animal recovered uneventfully without much complications.

Foetal maceration is classical clinical disorder wherein the failure to expel and retention of the foetus after foetal death has been postulated to occur as a result of cervical incompetence, malpositioning of the foetus and uterine inertia also occurs (Noakes *et al.*, 2009) [7]. Routine therapeutic strategies like transcervical removal of fetal bones either manually (Burns and Card, 2000) or through serial uterine lavage (Ajitkumar *et al.*, 2007) [1] and by surgical procedure like colpotomy and laprohystrotomy (Kumar, 2009; Prakash *et al.*, 2017; Rajkumar *et al.*, 2022) [5, 10, 9]. Taken together early medical or surgical interventions to preserve the future fertility and thus reduces the morbidity in dairy cows.

Conclusion

Foetal maceration is considered to be one of the serious compromising factor among foetal losses in dairy cows. They reduce the reproductive performance by causing infertility and sterility. Hence, timely medical or surgical intervention may preserve the future fertility and optimises the reproductive performance and prevents the opportunity cost in dairy cows.

Fig 1: Obstetrical examination of cow

Fig 2: Transcervical removal of macerated foetal bones

Fig 3: Transcervically recovered macerated fetal bones

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