



Management of Mummification by Cervicotomy in Holstein Friesian Crossbred Cow

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ABSTRACT

A mummified foetus was delivered by cervicotomy after the failure of hormonal therapy in a six-year-old, pluriparous, Holstein Friesian crossbred cow.

Key words: Mummification, Cervicotomy, Gestation, Cervix,

How to cite: Arunpandian, J., Kumar, B., Nawab, K., Kohli, K., & Srivastava, N. (2024). Management of Mummification by Cervicotomy in Holstein Friesian Crossbred Cow.

The Indian Journal of Animal Reproduction, 45(1), 76–78. 10.48165/ijar.2024.45.01.19

INTRODUCTION

The reported incidence rate of foetal mummification is 0.13-1.8% in cows (Kumar and Saxena, 2018). Mummification is a condition that mostly occurs during 3-8 months of gestation in cattle characterized by failure of cervical dilatation, intact corpus luteum and presence of only foetal bones in uterus, with absence of infections (Kumar and Saxena, 2018). Also, there is failure on the part of dam to expel the dead foetus. The condition involves maternal caruncle and foetal cotyledon with the presence of hard foetal body within uterine horns with no apparent clinical signs (Krishan, 2015). The causative agents can be classified into infectious and non-infectious ones. The environmental factors like extreme weather, drought and hypoxia (Kumar *et al.*, 2018) also contribute to this. The drug of choice for foetal mummification cases is anti-lu-

teotropic or luteolytic agents like a PGF₂α. In case of failure of medicinal treatment, the case must be approached surgically (hysterectomy through colostomy or caesarean section; Hopper *et al.*, 2006).

CASE HISTORY AND OBSERVATIONS

A six-year-old, 3rd parity pluriparous Holstein Friesian crossbred cow was presented with a history of confirmed pregnancy at 3rd month of gestation approximately before seven months. Thus, it indicated that the animal had exceeded its normal gestational period without any progressive signs for parturition. The animal had good body condition, with normal body temperature of 38.6 °C. On clinical examination, the heart rate and respiratory rate

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Received 07-07-2023; Accepted 17-03-2024;

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were found to be under normal range, with pink and moist conjunctival mucous membrane. On rectal examination, foetal fluids, foetal movements, fremitus and placentomes were found absent and hard mass like rounded structure was palpated. The corpus luteum was present on right ovary. On vaginal examination, the cervix was tightly closed and no discharge was observed.



Fig. 1: The mummified fetus delivered by cervicotomy

TREATMENT AND DISCUSSION

The cow was physically normal, with no apparent emergency. The first line of treatment was focused on dilating the cervix. The cow was administered with injection Cloprostenol (PGF₂α analogue; 2 mL Cloprestenol, Vetcare India), Valethamate bromide (Epidosin, 8mg/mL, 70 mg dose, TTK Healthcare Ltd) and antibiotic - ceftriaxone 4g as a supportive therapy by intramuscular route. Also, intravenous fluid therapy (Normal saline, Ringer's lactate) and calcium borogluconate (350mL) was administered (prewarmed, and slow administration). Later, cervical massage was done by mixing of Carboxy Methyl Cellulose (CMC) powder with tepid water three times in day. The above protocol (fluid therapy, antibiotics, supportive therapy and cervical massage) was followed for three days. However, there were no signs of cervical dilatation. Dabas and Chaudhari (2011) reported failure to expel mummified foetus because of incomplete dilatation of cervix following treatment with PGF₂α. The vaginal examination was done every twelve hours. Since there was no improvement in cervical dilation for three days of treatment, cervicotomy was considered as Second line of treatment. A cervicotomy was performed under caudal epidural anaesthesia with injection of Lignocaine hydrochloride (4 mL) between the sacro-coccygeal vertebrae. The incision was made on the dorso-lateral part of cervix at the right side for 8-10 cm with help of the BP (Bard Parker) blade (blade No. 50, BP handle number 3). Carboxy Methyl Cellulose powder with warm water was infused into the uterus, to prevent the damage of the reproductive tract and facilitate

lubrication while pulling the foetus outside. It is required because mummified foetus is predominantly composed of bone without any musculature. The surgical area of cervix was sutured with the help of suture material (Polyglycolic Acid Suture – universal suture (PGA) of size 2 and simple continuous suture pattern was applied. The post-surgical treatment consisting of intravenous fluids, antibiotic, anti-inflammatory and supportive medication was followed for one week. The animal recovered uneventfully after 10 days.

Foetal mummification occurs commonly in exotic and indigenous cows (Jana and Ghosh, 2014). After placentation and ossification, the mummified foetus remains even beyond the gestation period in uterus (Kumar *et al.*, 2017). The causative agent for foetal mummification can be broadly classified into infectious and non-infectious ones. The infectious agents include leptospirosis, Bovine Viral Diarrhoea (BVD) and *Neospora Caninum* in bovines (Ghanem *et al.*, 2009). Non-infectious agents include twisting of the umbilical cord, disturbed hormonal levels and chromosomal abnormalities, uterine torsion (Azizunnesa *et al.*, 2010), and defective placentation. The favourable environmental factors contributing to foetal mummification is foetal death causing ossification of foetus. This escalates dehydration of uterine environment, anaerobic condition inhabits that the foetus followed by closure of the cervix with intact endometrium (Drost, 2007). The mummified foetus can be classified into two types based on appearance: haematic and papyraceous. The haematic type is reported in cattle and buffalo (Krishnan, 2015) in which the chocolate colour material surrounds the foetus, whereas the papyraceous type is commonly seen in non-ruminants, in which the foetal skin appears like parchment paper with the absence of exudate. The clinical signs of foetal mummification are prolonged gestation without any signs of parturition. During a vaginal examination, the cervix might be closed. An ultrasonographic examination would reveal a compact, immobile, and firm uterus without fluid and placentome. The conservative treatment for foetal mummification cases is combination therapy of estradiol with PGF₂α as it gives better result (Kumar *et al.*, 2018). Surgical approach can be used in cases where medicinal treatment is unsuccessful. Thereafter hysterectomy via colostomy (Hopper *et al.*, 2006) and caesarean operation using caudal flank laparotomy should be opted.

CONCLUSION

Foetal mummification is an obstetrical condition of bovines that hampers successful gestation. The present case

of mummification was managed with corrective surgical interventions and therapeutic measures that were effective and resulted in an uneventful recovery of the animal.

CONFLICT OF INTEREST

None

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