

## SUCCESSFUL MANAGEMENT OF FETAL MUMMIFICATION IN A CROSS-BRED COW

ALOK KUMAR,\* S.K. SHEETAL, BHAVNA and GYAN DEV SINGH<sup>1</sup>Department of Veterinary Gynaecology and Obstetrics, <sup>1</sup>Department of Veterinary Surgery and Radiology, Bihar Veterinary College, Bihar Animal Science University, Patna- 800014, India

Received: 18.12.2019; Accepted: 27.01.2020

## SUMMARY

The present clinical article reports pervaginal delivery of mummified fetus in a cross-bred cow. Diagnosis of the case was made on the basis of the clinical signs, per vaginal and per rectal examination followed by dilation therapy.

**Keywords:** Cross-bred cow, Mummified fetus, Per-vaginal delivery

Mummification of fetus is a rare gestational accident that occurs in majority of animals including cows with occurrence rate ranging 0.13-1.8% (Barth, 1986). Process of fetal mummification takes place at post placentation and fetal ossification stage i.e. around 70 days of gestation (Kumar *et al.*, 2018a). However, most frequent occurrences were reported during 3<sup>rd</sup> to 8<sup>th</sup> month of gestation (Dutt *et al.*, 2018a; Kumar *et al.*, 2019). Fetal mummies are classified as papyraceous where fetal surface remains dry with stiff fetoplacental unit which is reported in canines (Baruti *et al.*, 2018). However, in hematic mummification, a viscous brown coloured adhesive material covers the mummified fetus, therefore, sometimes termed as chocolate mummification. This type has been reported in bovines (Shivhare *et al.*, 2016; Kumar and Saxena 2018). In the cases of fetal mummification, pregnancy remains undisturbed as the fetal signal for induction of parturition remains absent (Kumar and Saxena, 2018; Kumar *et al.*, 2018a; Noakes *et al.*, 2019).

A five year old cross bred cow in its second parity was presented to Department of Veterinary Gynaecology and Obstetrics, Bihar Veterinary College, BASU, Patna with the history of prolonged gestation period. Upon clinical examination, clinical parameters were observed within normal physiological range i.e. temperature 101 °F, respiratory rate 46/minute and pulse rate 66/minute. Moreover, per-rectal palpation revealed fetus as a compact, firm, and immobile mass without placental fluid or placentomes. During per-vaginal examination, cervix was found closed. Ultrasonographic examination revealed compact, dense and static mass without fetal fluid and placentomes. The case was diagnosed as fetal mummification.

The therapeutic management was decided to induce parturition by providing dilation therapy and therefore, animal was given synthetic prostaglandin (PGF2 $\alpha$ ) i.e. Cloprostenol sodium @ 500  $\mu$ g, Valethamate bromide @ 48 mg, Dexamethasone @ 40 mg and Estradiol valerate @

30 mg intramuscularly and kept under observation. Vaginal examination was carried at every 06 hour interval to observe the progress in cervical dilation. After 24 hours of treatment, progress was observed in cervical dilation. Therefore, manual dilation of cervix using lubricated gloved hand with ample amount of liquid paraffin was also practiced which resulted in further dilation of cervix. After providing proper lubrication using liquid paraffin, mild traction was applied on the approaching parts of fetus which resulted in delivery of entire fetal mass wrapped in thick brown coloured membrane (Fig. 1). Crown-rump (CR) length was measured as 32 cm. Animal was kept under observation for 12 subsequent hours with routine symptomatic treatment i.e. broad spectrum antibiotic, enrofloxacin @ 10 mg/kg body weight, non steroidal anti inflammatory drug Meloxicam @ 0.5 mg/kg body weight, probiotics alongwith vitamin E and Selenium supplement were administered. Finally, the cow was discharged after successful recovery.

Difficulty in parturition termed as dystocia which may arise due to maternal or fetal factors (Kumar *et al.*, 2018b). Fetal mummification is one of the examples of fetal cause of dystocia (Kumar *et al.*, 2018a). Etiology of fetal mummification in bovines includes infectious and non-infectious causes. Several diseases like leptospirosis,



Fig. 1. Mummified fetus wrapped in brown coloured membrane.

\*Corresponding author: dr.alokshukla.vet@gmail.com

bovine viral diarrhoea (BVD) and *Neospora caninum* have been reported to be associated with mummification (Roberts, 1962; Ghanem *et al.*, 2009). However, non-infectious causes include altered hormone level and chromosomal abnormality (Roberts, 1962), umbilical cord twisting (Mahajan and Sharma, 2002), uterine torsion (Moore and Richardson, 1995), improper placentation (Irons, 1999), moreover, recently deficiency of uridine monophosphate synthase (DUMPS) from the deoxyribonucleic acid (DNA) extract of larger fraction of mummified foetuses further indicates malfunctioning at genetic level alongwith aforesaid factors. (Ghanem *et al.*, 2009).

Therapeutic management includes dilation of cervix using PGF2 $\alpha$  through luteolysis of CL, however in non responsive cases, surgical correction i.e. laparohysterotomy is advised (Dutt *et al.*, 2018b). Finally, the animal delivered mummified fetus per-vaginally with little assistance.

## REFERENCES

- Barth, A.D. (1986). Induced abortion in cattle. In: Morrow D.A. (Edt.) Current Therapy in Theriogenology. (2<sup>nd</sup> Edn.), Philadelphia. WB Saunders, pp. 205–208.
- Baruti, M., Ahuja, A., Singh, R., Dhindsa, S.S. and Singh, P. (2018). Fetal mummification in german spitz bitch: case report. *Int. J. Sci. Env. Technol.* **7**(4): 130-1305.
- Dutt, R., Dalal, J., Singh, G. Gahalot, S.C. (2018a). Management of fetal mummification/maceration through left flank caesarean section in cows- study of four cases. *Adv. Anim. Vet. Sci.* **6**(1): 12-16.
- Dutt, R., Singh, G., Gahalot, S.C., Yadav, V., Patil, S.S. and Sharma, K. (2018b). Fetal maceration in a cross-bred Holstein Friesian cow- a case report. *Int. J. Pure App. Biosci.* **6**(1): 1288-1290.
- Ghanem, M.E., Suzuki, T., Akita, M. and Nishibori, M. (2009). Neosporacanium and complex vertebral malformation as possible causes of bovine fetal mummification. *Can. Vet. J.* **50**: 389–392.
- Irons, P.C. (1999). Hysterotomy by a colpotomy approach for treatment of foetal mummification in a cow. *J. S. Afr. Vet. Assoc.* **70**: 127–129.
- Kumar, A. and Saxena, A. (2018). Clinical management of fetal mummification in a cow—a case report. *Indian. Vet. J.* **95**(11): 81-82.
- Kumar, A., Saxena, A. and Anand, M. (2018a). Fetal mummification in cattle: current approach on its management—a review. *Int. J. Sci. Env. Technol.* **7**(3): 1079–1083.
- Kumar, A., Saxena, A. and Yadav, A.K. (2019). Per-vaginal delivery of a Schistosomus reflexus monster in a Murrah buffalo— a case report. *Haryana Vet.* **58**(1): 142-143.
- Kumar, A., Saxena, A., Asre, R. and Mishra, K.K. (2018b). A rare case of hydramnios in cattle and its successful management. *J. Entomol. Zoology Stud.* **6**(4): 1764-1766.
- Mahajan, M. and Sharma, A. (2002). Haematic mummification due to umbilical cord torsion in a cow: a case report. *Indian. Vet. J.* **79**: 1186–1187.
- Moore, A.A. and Richardson, G.F. (1995). Uterine torsion and fetal mummification in a cow. *Can. Vet. J.* **36**: 705–706.
- Noakes, D.E., England, G.C.W. and Parkinson, T.J. (2019). Veterinary Reproduction and obstetrics, (9<sup>th</sup> Edn.), W.B. Saunders Company Limited, London. p. 143.
- Roberts, S.J. (1962). The enigma of fetal mummification. *J. Am. Vet. Med. Assoc.* **140**: 691–698.
- Shivhare, M., Kumar, S., Thakur, M.S. and Shukla, S.P. (2016). Management of mummification of fetus in a murrah buffalo— a case report. *Buffalo Bull.* **35**(4): 507-509.