A RARE OCCURRENCE OF TWIN MUMMIFICATION IN MURRAH BUFFALO: CASE REPORT

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ABSTRACT

Twin mummified fetus is a rare phenomenon diagnosed in the buffalo presented to RVP, IVRI for pregnancy confirmation with the history of six-month gestation, free from any abdominal enlargement as per gestational age. Per rectal examination revealed tumor like hard mass while ultrasonographic picture disclosed hyperechoic fetal skeleton around hypoechoic or anechoic structures in uterus with the active CL on the right ovary. Erstwhile placentomes, foetal fluids and foetal heartbeat was absent. Cervical dilation was achieved through combination of drugs, hot fomentation and manual massage of cervix and fetuses were pulled out after 30 h of induction.

Keywords: *Bubalus bubalis*, buffaloes, twin mummification, ultrasonography, PCL, cervical dilation

INTRODUCTION

The exact outcome of early fetal mortality is unpredictable. Foetal death may precede abortion, maceration, or mummification. Endocrine support of pregnancy is lost in Abortion and maceration. In mummification, maternal recognition of fetal death is rarely apparent as animal fails to show neither external signs of pregnancy nor discharge or signs of return to estrus, unless intervened. Mummification is exceptional in monotocous species like sheep, goat and cattle, often observed in polytocous species like swine, bitch and cat wherein single or multiple fetuses can undergo mummification without much effect on developing fetuses. (Roberts, 2004). Mummification can be manifested as papyraceous type with dry, stiff feto-placental unit without any exudates as reported in dogs, cats, cattle, buffalo, and sharks (Barder, 1996; Windsor *et al*., 2018) or can be haematic or chocolate type characterized by presence of viscous adhesive material over fetal mummy perceived in cattle, buffalo, and dogs (Sandoval *et al*., 2008).

The incidence of mummification ranges 0.13% to 0.18% (Barth, 1986) can occur anywhere between third to eight months of gestation i.e. After Foetal skeleton growth. Fetal mum-mification is occasionally diagnosed in cattle (Shah *et al*., 2018), buffalo (Yadav *et al*., 2019) goat (Bisla *et al*., 2018), sheep (Hailat *et al*., 1997), horse (Meyer and Varner, 1991), pig (Christianson, 1992), dog

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and cat (Johnston, 1987). Twin mummification has been reported in mare and delivery of a live foal along with a foetal mummy (Barber *et al*., 1996; Robinson *et al*., 2011). Mari *et al*. (2004) reported unilateral twin pregnancy reduction between 16 to 25 d of gestation by transvaginal ultrasound-guided aspiration to reduce occurrence of mummification in mare, nonetheless twin calving is not a clinical emergency in bovine. To the best of our knowledge, no case of typical twin mummification has been reported in buffalo. The present case put on record about twin mummification in buffalo and its medicinal management.

CASE HISTORY AND CLINICAL OBSERVATION

A four years primiparous Murrah buffalo was presented to Referral Veterinary Polyclinic (RVP), Indian Veterinary Research Institute (IVRI) with history of mating eight month back for pregnancy reconfirmation with suspicion of pregnancy loss as animal failed to display any positive signs of pregnancy. Buffalo was in good body condition with normal temperature, pulse and respiratory rate. Vaginal examination revealed closed cervix. Per rectal palpation pronounced hard mass resembling tumor on pelvic floor with projecting fetal extremities in right uterine horn, no evidence of fetal membrane slips and fetal fluid over the structures were felt. As a confirmative diagnosis Ultrasonography was performed using linear rectal probe revealed well developed fetal skeleton deprived of fetal fluid, fetal heartbeat and Placentomes (Figure 1). CL though improminent during palpation found to be active through USG. (Figure 2).

TREATMENT AND DISCUSSION

Animal was subjected to induction and dilation therapy using Inj. Cloprostenol Sodium-2 ml I/M (Estrumate ™- MSD Animal Health India), Inj. Valethamate bromide- 96 mg (Epidosin™- TTK, health care Ltd. India), Inj. Dexamethasone- 40 mg (Dexona™- Zydus Animal Health Ltd. India) Inj Estradiol benzoate-2 mg I/M (Pregheat™- Virbac Animal Health Pvt Ltd.) Periodic per-vaginal examination was performed at 10 h interval. Cervical feathering and fanning along with hot fomentation with lukewarm water and liquid paraffin resulted in sufficient cervical dilatation. 30 h after treatment cervix was 3-finger dilated with palpable fetal parts. Traction was applied to remove foetal mummy found juxtaposed with tissue mass which was misjudged to be fetal membranes (Figure 3 and 4). Upon dissection, the mass found to be another fetal mummy encased with fetal membranes (Figure 5). Fetus and fetal membranes weighed 200 and 150 gms each respectively. Sex of both foetuses were female with CRL 20.2 cm and 20 cm suggesting fetal death at third month of gestation. As a Post-operative care, Povidone iodine and distilled water 150 ml was flushed into uterus and massaged then followed by intrauterine douching with Lenovo AP (Levofloxacin + Ornidazole) 60 ml. Along with Antibiotic Inj. Ceftriaxone 10 mg/kg I/M, Inj. Meloxicam 0.1 mg/kg I/M and an ecbolic syrup Uterotone 100 ml/day P.O. for five days.

Mummification is sterile, odorless with cervix closed and persistent CL almost always present. Hence goes unnoticed as fetal death being rarely apparent without any imminent signs of discharge and return to estrus. While fetal death results in resorption of amniotic and allantoic fluids, dehydration of fetal tissues and annex

Figure 1. USG image of mummy vertebrae and spine of the fetus.

Figure 2. Right ovary presence of CL and a large follicle.

Figure 3. Fetal membrane, mummified fetus and a unique mass as extracted from buffalo uterus.

Figure 4. Shrunken, degenerated fetal cotyledon on fetal membrane.

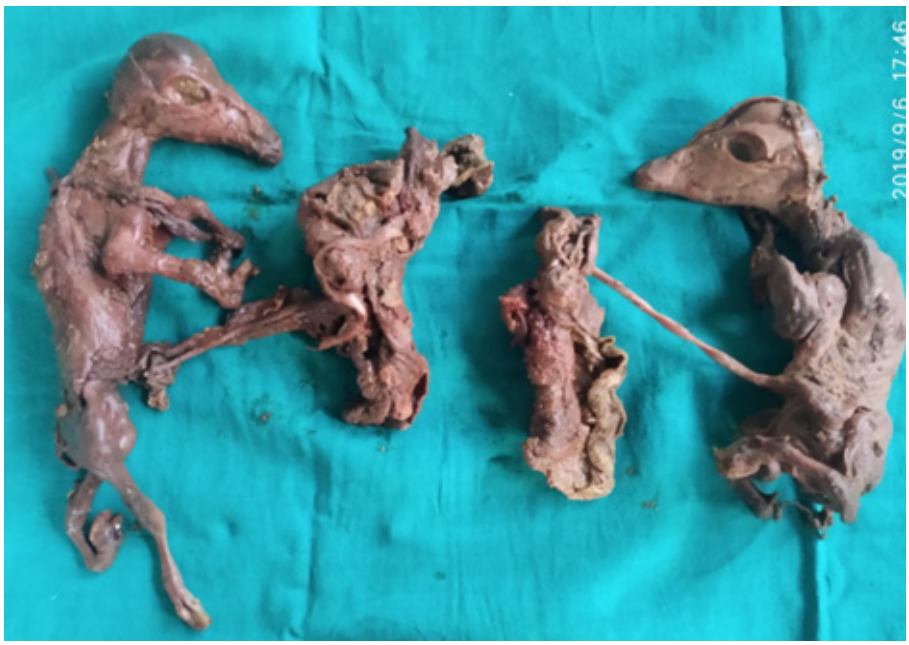

Figure 5. Twin mummified fetus along with the fetal membranes extracted after induction therapy.

membranes, finally disappearance of placentomes leaving fetal membranes and uterine wall adhered to the fetus. Whole mass discolorates to brownish black, leathery in appearance. It may or may not have exudate formed as a result of red blood cells degeneration however this case is of haematic type with fetal mummies entrapped in brownish fetal membranes and chocolate color exudates.

Causative factors include, bovine viral diarrhea (BVD), leptospirosis, and molds (Roberts, 1962), Compression or torsion of the umbilical cord, or both (Mahajan *et al*., 2002), uterine torsion (Moore *et al*., 1995), defective placentation (Irons *et al*., 1999), genetic anomalies, abnormal hormonal profiles and chromosomal abnormalities (Stevens *et al*., 1968). Nevertheless, the exact etiology in this present case was not established. The diagnosis of fetal mummification is generally uncomplicated by transrectal palpation, but confirmative diagnosis obligates ultrasonography examination

Prostaglandin F2α (PGF2α) considered most effective in fetus expulsion (Lefebvre, 2015), Uterine lavage may necessitate removal of fetal and placental debris. In the absence of a treatment response, the most cost-effective option is then to proceed with a second injection of PGF2α, however in present case single dose PGF2α, was sufficient and uterine lavage was done with diluted Povidone Iodine

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