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SUCCESSFUL MANAGEMENT OF FETAL MUMMIFICATION IN NON-DESCRIPT BUFFALO HEIFER BY MEDICAL TERMINATION AND EPISIOTOMY OPERATION

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ABSTRACT

A 9-month pregnant non-descript buffalo heifer was presented with the history of vaginal discharge. The case was diagnosed as fetal mummification during clinical and ultrasound examination. The parturition was induced with $PGF_2\alpha$. The animal was not responded to and hence the second dose of $PGF_2\alpha$ was given 72 h later. The cervix was fully dilated forty-eight hours after second $PGF_2\alpha$ injection but due to vulval constriction it was unable to deliver the fetus. Hence an episiotomy was performed and the mummified fetus was delivered.

Keywords: *Bubalus bubalis*, buffaloes, non-descript buffalo heifer, mummification, $PGF_2\alpha$, vulval constriction, episiotomy

INTRODUCTION

In domestic animals, fetal mummification is an important gestational disorder where the fetus dies inside the uterus and remains inside along with fetal debris beyond the normal gestation period (Vikram *et al*., 2020). After the death of fetus, the fetal fluids collected in the amniotic and allantoic cavity are reabsorbed and hence the foetal tissues and membranes are dehydrated. The unkeratinized, immature fetal skin further accelerates the process of mummification, and it may lead to loss of body tissues (Kamalakar *et al*., 2015). While most often found in multiparous species, the incidence (0.43 to 1.8%) of fetal mummification is less common in bovines (Roberts, 1971; Lefebvre, 2015; Palanisamy *et al*., 2018). Modi *et al*. (2011) reported an incidence of 0.01% fetal mummification in buffaloes. Due to the low prevalence of this condition in buffaloes, there is a scarcity of information about mummification in buffaloes. Considering the above, the present report records a case of fetal mummification in a non-descript buffalo heifer successfully managed by medical termination by prostaglandin $F_2\alpha$ and subsequent removal of fetus following episiotomy operation.

CASE HISTORY AND OBSERVATIONS

A non-descript buffalo heifer on its first gestation was presented with the history of scanty and cloudy vaginal discharge, anorexia and watery

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diarrhoea since last two days. The animal was inseminated 9 months back and confirmed as pregnant by a practicing veterinarian at third month of gestation. On rectal examination, the cervix and uterus were located at pelvic brim and abdominal cavity, respectively. On palpation, the cervix was rigid, and the uterus was tightly

contracted over hard and firm mass of fetus. The fremitus was absent and the placentomes were not palpable. On ultrasound examination, an empty eyeball over fetal head was noticed. Further the fetal fluids and movement were absent (Figure 1). Based on the history, clinical and ultrasound examination, it was diagnosed as a case of fetal mummification.

TREATMENT AND DISCUSSION

In order to deliver the mummified fetus, the animal was given 500 µg of $PGF_2\alpha$ intramuscularly (inj. Pragma, Intas pharmaceuticals Ltd.,). The animal was examined at 12 h interval. Seventy-two hours after $PGF_2\alpha$ injection, mild brownish mucoid vaginal discharge was observed. On vaginal examination the cervix was only one finger dilated. A second dose of $PGF_2\alpha$ was administered 72 h after first injection. The cervix was fully dilated enough to pass a hand at 48 h after the second injection. The fetus was near the cervical canal. After lubricating the vaginal passage, forced traction was applied on the fetus but it was unable to deliver per vaginum due to vulval constriction in the heifer. Hence, the episiotomy was performed to create the space. The vulval lips were washed with 1% potassium permanganate solution. The episiotomy was performed on the dorsolateral aspect of the vulval lips on either side. Approximately 5 cm incision was made using BP blade on either side. The mummified fetus was removed by mutation and manual traction. After delivery of the fetus, the vulval lips were cleaned with 1% potassium permanganate solution and the incision was closed with horizontal mattress suture using No.2 catgut.

The mummified fetus delivered was reddish brown in color with empty orbit. The fetal fluids were completely absorbed. The placental membrane was parchment like and firmly adhered over the dehydrated fetus (Figure 2). After the removal of the fetus, the buffalo was clinically treated with inj. Enrofloxacin (1500 mg), inj. Chlorpheniramine maleate (100 mg) and inj. Oxytocin (30 IU) intramuscularly. The antibiotic and antihistamine were given for 3 more days. It was advised to supplement the animal with mineral mixture (50 gm/day) for one month. The animal was brought to AI unit 60 days after treatment with estrus signs. It was inseminated and confirmed as pregnant on 45th day post insemination by ultrasound examination.

Mummification usually occurs between 3 to 8th month of gestation in bovines. The dead fetus is retained inside the uterus due to persistent corpus luteum. The dead fetus usually shrivels up and the amniotic and allantoic fluids are resorbed, dehydrating the fetal tissues and membranes (Selvaraju *et al*., 2004; Manokaran *et al*., 2011). The cause of fetal death and mummification are manifold (Vikram *et al*., 2020). Torsion or compression of the umbilical cord, genetic or chromosomal abnormalities, placental defects, abnormal hormonal concentrations and rarely infectious agents are the usual suspect causes for mummification in cattle (Noakes *et al*., 2001). Most of these causes have been reported in buffaloes and might induce a similar fatal outcome to the fetus in buffaloes (Martuciello *et al*., 2009). Prostaglandin

Figure 1. Ultrasound image showing mummified fetus with empty eyeball and lack of fetal fluid and placentomes.

Figure 2. Mummified fetus removed.

$F_2\alpha$ is the therapeutic agent of choice to expel the mummified fetus, with an excellent prognosis for return to fertility within 1 to 3 months (Dabas and Chaudhari, 2011). In few cases the combination of $PGF_2\alpha$ and PGE_2 was effective whereas the $PGF_2\alpha$ alone was not effective in single or two doses (Hirsbrunner *et al*., 2003). In circumstances where the $PGF_2\alpha$ is failed, surgical treatments may be followed to remove the fetus (Hopper *et al*., 2006). Gopal *et al*. (2015) performed episiotomy operation to deliver mummified fetus in Holstein Friesian heifer affected with labial narrowness to prevent vulval tear during the delivery. In the reported case, 120 hours after the first $PGF_2\alpha$ injection, the cervical dilatation to pass the full hand occurred. But due to constriction of vulva of heifer, it was unable to deliver the mummified fetus on its own. Hence an episiotomy was performed, and the mummified fetus was delivered by traction.

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