



## SURGICAL MANAGEMENT OF CROSSBRED COW HAVING MUMMIFIED FETUS

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### ABSTRACT

Fetal mummification is an uncommon condition in most domestic species. While most often seen in multiparous and polytocous species like swine, it is also observed in monotocous species when the fetus is retained for a long time. The low prevalence of the condition may help explain the scarcity of information in the literature. The present study was conducted on 7 year old cross-bred pregnant cow weighing 350 kg in her 4<sup>th</sup> parity of Kendrapara region, Odisha presented with mummified foetus to establish new avenues in the field of successful management of mummified fetus in cross bred cows by caesarean section. The animal was given a dose of antibiotic, fluid therapy and corticosteroids before the surgery. After appropriate post operative care, it was found that the animal recovered well subsequently after the operation. The present study could be helpful for the field Veterinary Professionals in managing the cases of mummified fetus therapeutically before caesarean section.

**KEY WORDS:** Surgical, management, crossbred cow, mummified fetus, caesarean section.

### INTRODUCTION

A farm economy depends upon a calf per year per cow. Mummified fetus is a reproductive disorder, which is responsible for farm economic loss by extending the inter calving period as well as fetal loss (Azizunnesa *et al.*, 2010). It occurs in cattle of all age and happens when fetus dies without concomitant luteolysis and adequate cervical dilation (Kumar *et al.*, 2013). This condition is said to be more common in pigs and cats carrying large litters as a consequence of uterine overcrowding and placental insufficiencies (Noakes *et al.*, 2009). The incidence of mummified fetus in cattle is low and sporadic but the incidence may be higher in some herds (Roberts, 1971). In cattle fetal mummification occurs with an incidence of 0.13-1.8% (Barth, 1986) and occurs between three and eight month of gestation (Roberts, 1986, Kumar *et al.*, 2013 and Rejean *et al.*, 2009). This paper aims to report a case of mummified fetus removed successfully by therapeutic management of caesarean section in a crossbred cow. Fetal mummification has been reported in several species, including the sheep (Halit *et al.*, 1997), goat (Tutt, 1997), horse (Meyer and Varner, 1991), pig (Christianson, 1992) and in dog and cat (Johnston and Raksil, 1987), but it is more common in cattle (Roberts, 1986). The exact outcome of early fetal mortality is unpredictable, and is influenced by several factors, including the cause of fetal mortality, differences in pregnancy between species, stage of gestation at fetal death, and number of fetuses (Lefebvre, 2015)

After fetal death the amniotic and allantoic fluids are resorbed, dehydrating the fetal tissues and annex membranes. The immature, unkeratinized skin of the fetus

may contribute to the mummification process by allowing a faster loss of body water (Hubbert, 1974). Several potential causes for this condition has been proposed: bovine viral diarrhea (BVD), leptospirosis and molds (Roberts, 1962), mechanical factors, such as compression or torsion of the umbilical cord, or both (Mahajan and Sharma, 2002); uterine torsion (Moore and Richardson, 1995); defective placentation (Irons, 1999); genetic anomalies (Stevens and King, 1968); abnormal hormonal profiles. However, a definitive etiology is rarely determined because of tissue degeneration and autolysis (Lefebvre, 2015).

### MATERIALS & METHODS

A seven year old crossbred cow weighing 350kg was presented in the Veterinary Dispensary, Badapada of Kendrapada district, Odisha suffering from extended gestation, *i.e.* of about 320 days. Apparently the pregnant cow was normal as all the clinical findings like temperature, pulse rate, heart rate, appetite, posture and gait were normal (Azizunnesa *et al.*, 2010). On rectal palpation there was no fetal movement, cervix was closed and a hard mass in the uterus without the palpation of cotyledon, fremitus and fetal fluid that revealed fetal mummification (Azizunnesa *et al.*, 2010). The condition becomes drier, firmer and more lather like tissues of the fetus with absence of cotyledon and fremitus, if the mummified fetus exists longer period in the uterus (Roberts, 1986). Most mummified fetuses will remain in the uterus until treatment is given to expel them or until their removed by caesarean section (Wenkoff and Manns, 1977). The cow was injected 5ml. of Lutalyse (Dinoprost

Tromethamine, 5mg/ml) intramuscularly and subsequently with the second dose after 48 hours, but it did not respond, which was in disagreement with the findings of Balasubramaniam *et al.* (1990), Saxena *et al.*, 2001, Srinivasan *et al.*, 2007 and Awasthi and Tiwari (2002). So, alternatively surgical approach was made in this case in order to remove the mummified fetus from the cow.

#### Treatment

##### Preoperative conditions

The case was presented in delayed conditions. The animal was having normal appetite, temperature, pulse rate, heart rate, appetite, posture and gait were normal (Azizunnesa *et al.*, 2010).

##### Preparation before surgery

Gunny bags and straw were used as bedding material to reduce stress during operation. Legs were tied in jute rope rather than plastic ropes commonly found in villages.

##### Pre-operative medication

To restore the health condition and to counteract infection during surgery in field condition the cow was administered with intravenous fluids and antibiotics. Immediately before caesarian section, 1liter of Ringer's lactate solution, 2 liters of DNS and 400ml. of metronidazole were infused to the animal. In addition, 10ml of prednisolone was given to the animal one hour before the operation in order to reduce the surgical shock.

##### Operative procedure

The caesarian operation was performed in right lateral recumbent position after proper restraining of the animal. The operation was done in the left lower flank mid ventral

region under local infiltration of anesthesia *i.e.* 2% Lignocaine hydrochloride (Krishnakumar *et al.*, 2008). The area for operation was prepared by clipping, shaving and finally sterilizing with Tr. Iodine soaked cotton (Azizunnesa *et al.*, 2010). During operation, 1 litre of 5% Dextrose saline was administered intravenously to compensate dehydration from fluid and blood loss. Following aseptic preparation of operative area, a 14 inches long incision was made to open the abdomen. The gravid uterus was pulled out through the incised opening and it was easier to lift the mummified fetus containing uterus than normal because of its light weight. Drapes and sterile gauge were used to prevent the leakage of uterine fluid to the peritoneal cavity. A longitudinal incision along the greater curvature of uterine horn was made to remove the mummified fetus. There was absence of fetal fluid and the whole fetal surface was sticky, dark chocolate colored (Fig. 1). Placental portion was dried and attached to the fetal body, so confirmed as a case of haematic type of mummification (Arthur *et al.*, 1996). The endometrium and peritoneal cavity were thoroughly flushed with the normal saline and 200ml. of metronidazole to compensate the visceral moisture and to combat anaerobic infections (Rahman *et al.*, 1994). The incised uterus was sutured by Cushing's method and the peritoneum along with abdominal muscles was sutured by simple continuous manner with catgut no.2 suture material. Finally, the skin was closed with nylon thread (extra coarse) by horizontal mattress and simple interrupted in between (Fig. 2). Tr. Iodine was applied to the suture line regularly twice a day.



FIGURE 1: Mummified fetus in a cross-bred cow



FIGURE 2: Caesarean section in buffalo

##### Post-operative care

The main concern was focused to prevent the possible toxemia, to alleviate the inflammatory pain and to check the secondary infections or complications. Dextrose saline 5% (1 lit/day) was continued intravenously for 3 days after operation to reduce the risk of toxemia. Further, 4gms. of Ceftriaxone I/M for 5 days and 30 ml. of Melonex were injected intramuscularly for 3 days to prevent the bacterial infection and pain respectively. Temperature, respiration, pulse and other related physical examinations were recorded regularly. On the 10<sup>th</sup> day, the suture of the skin was removed and it was noticed that the wound had healed completely. The appetite and general appearance of the animal was satisfactory with apparent signs of recovery. The animal came to heat after two months (Roberts, 1986; Moore and Recharadson, 1995)) and after giving sexual rest

for another one month, it was bred and subsequently conceived that was confirmed by pregnancy diagnosis after two months of Artificial Insemination.

#### DISCUSSION

The main goal when treating an abnormal pregnancy is to propose a treatment that will either save the fetus, or expel the abnormal fetus, as is most often the case, in order to have the cow pregnant again within the shortest possible time. Although spontaneous abortion of mummified fetuses can occur, expulsion of the fetuses usually requires veterinary medical intervention. The treatment of choice in cases of fetal mummification is induction of luteolysis by injection of PGF<sub>2a</sub>, which is followed by the expulsion of the fetus within 2 to 4 days ( Jackson and Cooper, 1977). In spite of having received PGF<sub>2a</sub> treatment, a certain

percentage of animals do not expel the dead fetus. So, manual extraction by caesarean section is the alternative method.

### CONCLUSION

Based on the current knowledge of natural fetal mummification events, there are a number of prerequisites for the process of fetal mummification to occur. Examining the circumstances associated with fetal mummification can help scientists better understand the etiology and clinical situation in different species. The occurrence of mummified fetus is very low and sporadic in cattle in field conditions. The adoption of aseptic surgery, use of antibiotics, hydration therapy and corticosteroids at proper doses before, during and after the caesarean section in cross bred cows having mummified fetus help in successful recovery and maintenance of reproductive health of the cattle. The present study could be helpful for the field Veterinary Professionals in managing the cases of mummified fetus in an effective way. Further, due to the absence of specific causes associated with fetal mummification, it is important to maintain good sanitary conditions and a vaccination program. A rigorous reproductive monitoring program is also important in this regard.

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