Fetal Mummification Secondary to Rumen Impaction in a three Year-Old Ouda-Yankasa Cross Ewe: A Case Study

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ABSTRACT
A 3-year-old Ouda- Yankasa cross ewe weighing 40kg was presented to the large animal clinic of the Veterinary Teaching Hospital, Usmanu Danfodiyo University, Sokoto, with the chief complaint of reduced feed intake, weight loss and abnormal swelling on the central part of the abdomen. On presentation, the rectal temperature was 39.10C, pulse rate was 84 beats per minute, and respiratory rate was 60 cycles per minute. The case was diagnosed as fetal mummification and rumen impaction following radiograph and abdominal ultrasound scan. The case was surgically managed via abdominal laparatomy.

KEY WORDS: Fetal Mummification, Rumen Impaction, Ouda-Yankasa Cross Ewe.

1. INTRODUCTION
Fetal mummification has been reported in many domestic species, including the cow, sheep (Alagar et al., 2016), goat (Anil et al., 2017), horse (Threlfall,2005), swine, dog, and cat, with the highest prevalence occurring in the swine (Arthur, 2001). The condition is said to be more common in swine, dogs and cats that carry large litters which results in uterine overcrowding and placental insufficiency (Arthur, 2001). In sheep and goats, fetal mummification is uncommon, and affects both single and twin fetuses. The exact cause of fetal mummification is not known, but it has been associated with four major infectious conditions including toxoplasmosis, chlamydophila, border disease, and coxiella infections (Edmondson et al., 2012). Other potential causes for this conditions may include mechanical factors, such as compression and/or torsion of the umbilical cord;( Mahajan et al., 2002) uterine torsion;( Moore and Richardson, 1995) defective placentation;(Irons, 1999) genetic anomalies;(Roberts, 1962) abnormal hormonal profiles; and chromosomal abnormalities(Roberts, 1986). The aim of this paper is to report a case of fetal mummification concurrent with rumen impactions managed using abdominal laparatomy.

2. CASE HISTORY AND CLINICAL OBSERVATIONS
A 3-year-old Ouda- Yankasa cross ewe weighing 40kg was presented to the large animal clinic of the Veterinary Teaching Hospital, Usmanu Danfodiyo University, Sokoto, with chief complaint of reduced feed intake, weight loss and abnormal swelling on the ventral part of the abdomen. The ewe was managed intensively and was being fed on hay and bean husk. On physical
examination, the rectal temperature was 39.1°C, pulse rate was 84 beats per minute, and respiratory rate was 60 cycles per minute. There was enlargement of the ventrolateral abdomen which was more to the right and was hard on palpation. A hard mass was also felt bilaterally from the paralumbar fossa following palpation. The mammary gland was flabby, soft and no milk was expressed. The ocular mucous membrane was normal, the capillary refill time was 3 seconds. Obstetrical assessment via the vagina revealed a closed cervix.

Blood was collected through the jugular vein for PCV and complete blood count and haemoparasite investigations. Fecal sample was taken per rectum for routine parasitological investigations. Radiograph and ultrasound were also conducted to confirm the presence and assess the viability of the fetus.

3. LABORATORY INVESTIGATION REPORTS

Fecal analysis showed Eimeria Oocyst (++), thin blood smear showed no haemoparasites. The packed cell volume (PCV) was 27%, and neutrophilia was observed. Abdominal radiograph revealed the presence of a fetus in the uterus (Plate 1). Abdominal scan revealed absence of normal gestational fluid, fetal heart beat was not picked and no fetal movement noticed. Fetal mummification and rumen impactions were tentatively diagnosed. Abdominal laparotomy was then planned via the left paralumbar fossa.

3.1 MANAGEMENT

The anaesthesia was achieved using 2% xylazine and 5% ketamine combinations and inverted L block was achieved using 2% lignocaine given to effect.

The left paralumbar fossa was prepared for sterile procedure and a linear skin incision was made, the incision was extended through the abdominal muscle to the peritoneum. The rumen was exteriorized after reflecting the omentum, rumenotomy was carried out and the impacted materials that weighed 5kg were evacuated (Plate 2). The rumenotomy incision was closed with lambert over sown with cushing using chromic catgut size 0. The uterus was exteriorized and was found to be hard with no placental fluid (Plate 3). A hysterotomy incision was then made and a well developed mummified fetus dark brown in colour that weighed 5kg was removed (Plate 4). The hysterotomy incision was also closed with lambert over sown with cushing using chromic catgut size 0. Closure of muscles and skin was done using chromic catgut size 2 and nylon size 0 (for interlocking) respectively. Post surgically, Procaine penicilline and streptomycine injection were administer intramuscularly for five days at dose rate of 20,000 I.U/kg and 12.5mg/kg respectively. Diclofenac Sodium injection at 3mg/kg and Multivitamin 1ml/10kg were administered intramuscularly for three days. Daily dressing of the wound and post operative monitoring of vital parameters was also carried out until sutures were removed at day 14 post surgery.

4. DISCUSSIONS

In sheep and goat fetal mummification is uncommon, and affects both single and twin fetuses. It is associated with four major conditions: toxoplasmosis, Chlamyphila, border disease, and Coxiella (ToxChBCox) infection (Edmondson et al., 2012). In this case only single fetus was found mummified and rumen impaction was suspected to have resulted in the death and mummification due to compression of the uterus. Mahajan et al.,( 2002) reported among the potential causes for this conditions may include mechanical factors, such as compression and/or torsion of the umbilical cord. The ewe was recently purchased from an open market a month prior to presentations with no history of previous pregnancy and medications. Although, fetal mummification occurs in all species, in the ewe, mummified foetuses are occasionally diagnosed when the members of the flock that have either passed their prospective lambing date or do not look as heavily pregnant as her dates suggest are checked or examined (Kisani and Wachida 2012). Fetal death in domestic animals occurring in middle or last third of gestation that does not result in luteolysis and abortion causes autolytic changes in the fetus, absorption of fetal fluids and mummification (Roberts 1971). In the present case no uterine and fetal fluid was seen or observed and a dead dark brownish colour fetus covered with sticky charcoal colour fluid was removed. The limbs were flexed, there were no eye balls and the crown rump length was 15.5cm. Rao (2002) reported fetal mummification in a non-Descript ewe and observed that the fetuses were brownish in colour and were covered with sticky exudates and fetal membranes were thick in consistency.
5. CONCLUSION

This paper describes an unusual case of both fetal mummification and rumen impaction occurring together. It is possible that the fetal death and mummification occur secondary to pressure on the uterus by the impacted materials.

Plate 1: Radiograph with arrow indicating presence of the fetal skeleton
Plate 2: Evacuation of the impacted materials
Plate 3: Exteriorized uterus
Plate 4: Fully developed mummified fetus covered with brownish and sticky exudates

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