

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

Ahmad, U.S¹., Buhari S²., Shehu Z¹., Abubakar A.A²., Garba S¹., Jibril A³., Bello A⁴.

1. Veterinary Teaching Hospital,

2. Department of Veterinary Surgery and Radiology

3. Department of Theriogenology and animal Production

4. Department of Veterinary Anatomy

Faculty of Veterinary Medicine

Usmanu Danfodiyo University,

Sokoto, Sokoto State

Nigeria

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 laparotomy. **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, chlamydia, 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 laparotomy.

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 39.1⁰C, 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% xyalazine 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 cushioning 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 cushioning using chromic catgut size 0. Closure of muscles and skin was done using chromic catgut size 2 and nylon size 0 (ford interlocking) respectively. Post surgically, Procaine penicilline and streptomycine injection were administered 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, *Chlamydoiphila*, 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 charcolate 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.

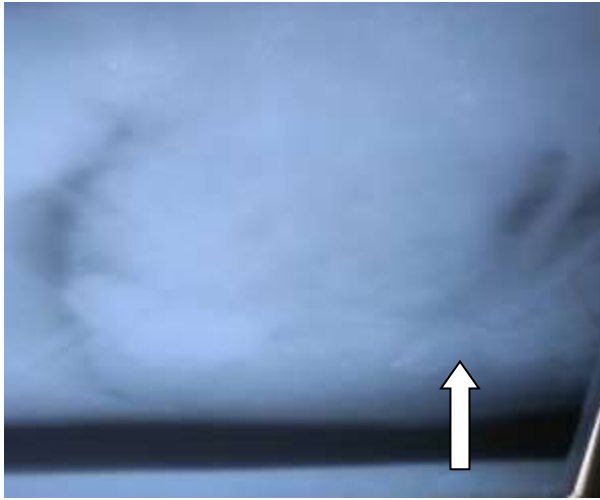


Plate 1: Radiograph with arrow indicating presence of the fetal skeleton



Plate 2: Evacuation of the impacted materials



Plate 3: Exteriorized uterus



Plate 4: Fully developed mummified fetus covered with brownish and sticky

REFERENCES

- [1]. S. Alagar, "Papyraceous mummification leading to dystocia of a normal fetus in a mecheri ewe", *Ind. J. Anim. Repr.*, 2017, 38(1): pp 62-63
- [2]. Anil "Fetal mummification in non-descript doe" a case report", *Intern.J.Science Env. & Tech*, 2017, 6 (4): 2335-2338
- [3]. S.J. ,Roberts, "Disease and accidents of the gestation period". In: *Veterinary Obstetric and Genital Diseases*. 3rd ed. Newton Abbot, UK: David and Charles, 1986, pp123–144

- [4]. W.H. Johnson, J.G. Manns, W.N. Adams, R.J. Mapletoft. "Termination of pregnancy with cloprostenol and dexamethasone in intact or ovariectomized cows". *Can. Vet. J.* 1981;22:288–290.
- [5]. S.J. Roberts "The enigma of fetal mummification". *Journal of American Veterinary Medical Association*, 1962,140:691–698.
- [6] M.E., Ghanem, T., Suzuki, M., Akita, Nishibori M. *Neospora caninum* and complex vertebral malformation as possible causes of bovine fetal mummification. *Can Vet J.* 2009;50:389–392.
- [7]. M. Mahajan, A.Sharma , "Haematic mummification due to umbilical cord torsion in a cow": a case report. *Indian Veterinary Journal*, 2002, 79:1186–1187.
- [8]. A.A., Moore ., and G.F., Richardson, "Uterine torsion and fetal mummification in a cow" *Canadian Veterinary Journal*, 1995, 36:705–706.
- [9]. P.C., Irons, "Hysterotomy by a colpotomy approach for treatment of foetal mummification in a cow: *Journal of South African Veterinary Association*, 1999,70:127–129.
- [10]. Stevens RW, King GJ. "Genetic evidence for a lethal mutation in Holstein-Friesian cattle", *J. Hered.* 1968;59:366–368.
- [11]. M.A., Edmondson, J.F., Roberts, A.N., Baird, S. Bychawski, D.G. Pugh, "Theriogenology of sheep and goats". In: Pugh DG, Baird AN, editors. *Sheep and Goat Medicine*. 2nd ed. Maryland Heights (MO): Elsevier Saunders; 2012:150–230.
- [12]. G.H. Arthur, D.E., Noakes, T.J. Parkinson, and G.C.W England,." *Veterinary Reproduction and Obstetrics*", 8th ed. W.B. Saunders Company Ltd., London, England 2001
- [13]. K., Rao Sadasiva, K.G.S. Raju and S. Bharath "Fetal Mummification In a Non-Descript Ewe" *Indian J. Anim. Res.*, 2002,36 (1): 76 - 77,
- [14]. A.I., Kisani , and N.Wachida "Dystocia Due to Mummified Foetal Monster in a Yankasa Ewe" A Case Report, *International Journal of Animal and Veterinary Advances*, 2012, 4(3): 167-169, ISSN: 2041-2908
- [15]. S.J. Roberts, (1971). "Veterinary obstetrics and genital diseases", (2nd edition). CBS Publishers and Distributors.
- [16]. W.R., Threlfall, "Singleton mummified fetus in a standard bred mare". *Equine Veterinary Education*, 2005, 17(5): 235-239