

Management of Dystocia Due to Fetal Mummification in Non Descript Doe

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Abstract: Fetal mummification is shriveling or shrinkage of fetus due to absorption of all fetal fluids in the uterus. It is encountered as an occasional cause for dystocia and rarely found in goat. A three-year-old non-descript doe was presented to Madras Veterinary College Teaching Hospital with the history of straining and reddish brown vaginal discharge. Clinical examination revealed that the goat was dull and depressed, subnormal temperature with increased heart rate, pulse rate and congested mucous membrane. Vaginal examination revealed presence of one dead fetus which was found to be in posterior presentation and both hind limbs were visible outside the vulva. By applying gentle traction, a dead male fetus was delivered per-vaginum. Further vaginal examination revealed the presence of a mummified fetus which was removed manually. The doe was treated with fluids, antibiotics and anti-inflammatory drugs for five consecutive days and it had an uneventful recovery.

Key Words: Dystocia, Fetal Mummification, Goat

1. INTRODUCTION

The exact outcome of early fetal mortality is unpredictable and is influenced by several factors, such as species differences, stage of gestation at fetal death, and number of fetuses. One possible outcome of fetal death is mummification. Fetal mummification is an uncommon condition in most domestic species (Tutt *et al.*, 1997). It is most commonly found in multiparous and polytocous species, although it is also observed in monotocous species when the fetus is retained for a long time. When the tissue water content drops below a critical threshold, bacterial putrefaction is inhibited, tissues become desiccated and the body shrivels to a dry leathery mass of skin, tendons, and bones (Janaway *et al.*, 2008). The following events must be present for fetal mummification to

occur: 1) fetus must die after the development of bones is complete (otherwise autolysis occurs rapidly, and soft tissues are reduced to their basic elements before being absorbed through the endometrium), 2) uterine and fetal fluids must be resorbed relatively rapidly, 3) there must be no oxygen in the uterus until the mummification process is complete, and 4) there must be no bacterial invasion in the uterus (Drost, 2007). The entire process of mummification takes several weeks, depending on the age of the fetus at the time of death. Once all fluids are completely resorbed, the fetal membranes and uterine wall adhere closely to the fetus, and the whole mass becomes brownish black, leathery in appearance, and odorless. Mummification that produces a dry, stiff fetoplacental unit with no exudate is called papyraceous mummification, and has been reported in multiparous (dog,

swine) and biparous species (sheep and goat) (Arthur and Noakes, 1996). Fetal mummification is to be differentiated from fetal maceration, in which the fetus putrefies, in the uterine cavity, in the presence of bacteria and oxygen originating from the open cervix. At least at the beginning of the process, mummification requires the continued presence of progesterone from a persistent corpus luteum (CL). Fetal mummification associated with a persistent CL is observed mainly in cattle and goats (Roberts, 1986).

The low prevalence of the mummified fetus in goat may explain the scarcity of information in the literature. The present report highlights a case of dystocia due to fetal mummification and a prompt diagnosis and early intervention for restoring the future fertility of the dam.

Case history and Clinical Findings

A three-year-old non-descript doe was presented to Madras Veterinary College Teaching Hospital with the history of straining and reddish brown vaginal discharge from past two days. On general physical examination, dam appears lethargic with reduced milk production. Clinical examination revealed that the goat was dull and depressed, subnormal temperature (100.8 °F) with increased heart rate (100 bpm), pulse rate and congested mucous membrane. Per vaginal examination revealed presence of one dead foetus which was found to be in posterior presentation and both hind limbs were visible outside the vulva. By applying gentle traction, dead fetus was relieved. After relieving dead fetus, lateral abdominal radiograph was taken, which showed the presence of radiodense mass in the uterus. Abdominal ultrasound examination showed the presence of immobile non-viable fetus. Based on the above findings, the case was diagnosed as dystocia due to fetal mummification.

Treatment

Based on clinical findings, one dead fetus in posterior presentation was relieved by applying gentle traction to the fetal limbs. Further examination revealed presence of compact and firm mass, which was diagnosed as mummified fetus. A brownish red coloured dead fetus with placentomes attached was removed manually (Figure 1). Uterine lavage was performed with metronidazole and povidone iodine to remove fetal and placental debris. The treatment was continued for five days with administration of antibiotic (Ceftiofur @ 1.1 mg/kg I/M), analgesic

(meloxicam @ 0.05 mg/kg I/M) and ecboolic (Involon; herbal preparation @ 100 ml loading dose, followed by 50 ml P/O). After one week, the animal showed uneventful recovery with normal clinical parameters and normal appetite.

2. DISCUSSION

In does and ewes, fetal mummification is uncommon and affects both single and twin fetuses. Mummified fetuses in small ruminants are spontaneously aborted. Abortion, stillbirth, fetal maceration and mummification are usually observed when infection occurs at the end of the second trimester and during the third trimester of gestation (East *et al.*, 1986). It is associated with four major conditions: toxoplasmosis, Chlamydomphila, border disease and Coxiella infection (Roberts, 1986). Of these infectious agents, Coxiella infection is at the top of the differential diagnosis list. Energy and protein deficiencies, particularly on days 90–120 of gestation, have also been implicated in causing mummification (Braun *et al.*, 2007). In most cases, primiparous females are more susceptible than multiparous animals. Demonstration of placental lesions and isolation of the infectious agents are the principal requirements for making a definitive diagnosis (Moeller, 2001). Serological studies and PCR detection of the organism in the placenta may also be used as diagnostic tool. There is no effective treatment available, except hormonal treatment like PgF₂α and treating the infectious cause (Wenkoff and Manns, 1977). Preventive measures includes culling does and ewes that have previously aborted, along with quarantining new animals before introducing them back into the herd. It is also important to maintain good sanitary conditions and a monitoring program (Lefebvre, 2015).

3. CONCLUSION

Fetal mummification is occasionally seen in domestic species. The exact mechanism responsible for intrauterine mummification is not known, both infectious and non-infectious causes have been associated with fetal mummification. The case reports are rare and the long-term fertility of dams following fetal mummification is difficult to evaluate. More scientific knowledge is needed to increase diagnostic efficiency and precision for better treatment and the establishment of preventive programs aimed at preserving overall fertility.

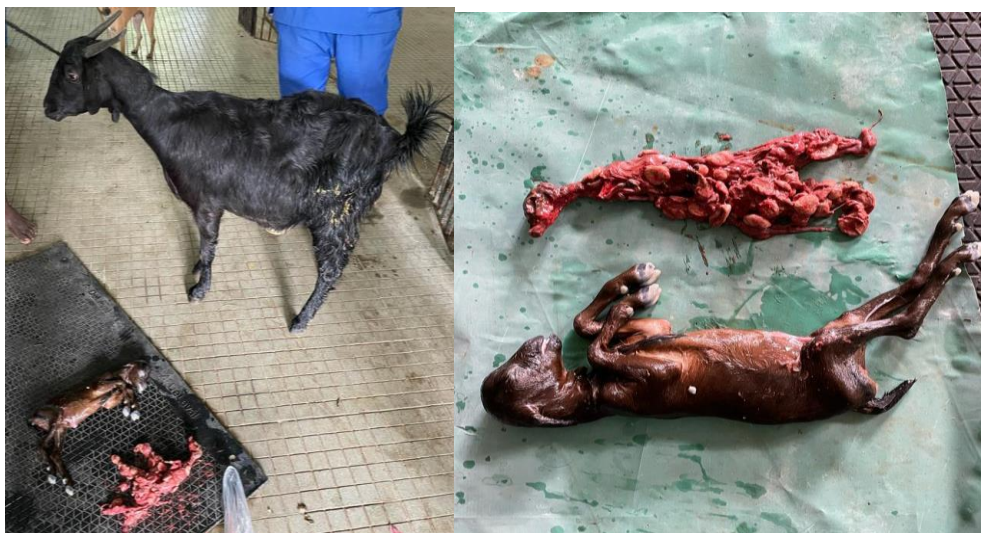


Figure 1. Dry, brownish red, shriveled and leathery fetus

REFERENCES

- [1] Tutt CL. Postpartum mummification of a co-twin fetus in a Cameroon dwarf goat doe. *Vet Rec.* 1997;140:229–231
- [2] Janaway RC, Wilson AS, Caprio Díaz G, Guillen S. Taphonomic changes to the buried body in arid environments: an experimental case study in Peru. In: Ritz K, Dawson L, Miller D, editors. *Criminal and Environmental Soil Forensics*. New York: Springer; 2008:341–356
- [3] Drost M. Complications during gestation in the cow. *Theriogenology*. 2007;68:487–491
- [4] Arthur GH, Noakes DE, Pearson H, Parkinson TJ. Infertility in the sow and gilt. In: Noakes AD, editor. *Veterinary Reproduction and Obstetrics*. 7th ed. London: WB Saunders; 1996:468–496
- [5] Roberts SJ. Disease and accidents of the gestation period. In: *Veterinary Obstetric and Genital Diseases*. 3rd ed. Newton Abbot, UK: David and Charles; 1986:123–144
- [6] Braun WF Jr. Noninfectious prenatal pregnancy loss in the doe. In: Youngquist RS, Threlfall WR, editors. *Current Therapy in Large Animal Theriogenology*. 2nd ed. Philadelphia: WB Saunders; 2007: 555–561
- [7] East E. Chlamydiosis. In: Morrow DA, editor. *Current Therapy in Theriogenology*. 2nd ed. Philadelphia: WB Saunders; 1986: 609–610
- [8] Moeller RB. Cause of caprine abortion: diagnosis assessment of 211 cases (1919–1998). *J Vet Diagn Invest*. 2001;13:265–275
- [9] Wenkoff MS, Manns JG. Prostaglandin-induced expulsion of bovine fetal mummies. *Can Vet J*. 1977;18:44–45
- [10] Lefebvre, Réjean. (2015). Fetal mummification in the major domestic species: current perspectives on causes and management. *Veterinary Medicine: Research and Reports*. 2015. 233. 10.2147/VMRR.S59520

Citation: Akhter Rasool, et.al., “Management of Dystocia Due to Fetal Mummification in Non Descript Doe” *ARC Journal of Animal and Veterinary Sciences (AJAVS)*, 2022; 8(1), pp. 9-11, DOI: <https://doi.org/10.20431/2455-2518.0801002>

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