Case report

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Surgical Management of Fetal Maceration in a Goat: A Case Report

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ABSTRACT

A three years old doe of non-descript breed was presented with the complaint of blood mixed pus discharge from the vagina for four days. As per the history, animal had completed five months of gestation. Upon per-vaginal examination, cervix was partially opened with foul smelling discharge. In radiographic examination, spalding sign was noted and upon ultrasonography, skeletal remnants without any intact soft tissue were noted. The case was diagnosed as macerated fetus. Under lumbo-sacral spinal anesthesia, cesarean section was performed to remove the macerated fetus. Post-operatively animal recovered uneventfully.

Introduction

Post-mortem changes in the fetus may hamper the normal parturition process which included fetal mummification, fetal maceration and fetal emphysema in animals (Roberts, 2004). Maceration is a common sequel of fetal mummification and occurs in the event of fetal death after formation of fetal bones (after 100 days of gestation) in small ruminants (Muthuswamy *et al.,* 2026). Such animals fail to abort, although the cervix is moderately open (Purohit & Gaur, 2011). The condition may develop as a consequence of failure to expel an aborting foetus. Bacteria enter the uterus through the dilated cervix and by a combination of putrification and autolysis the soft tissues are digested, leaving a mass of foetal bones within the uterus (Noakes et al., 2001). Fetal maceration is mostly seen in case of cattle and is uncommon in the goat (Chakraborty et al., 2018). Treatment included manual removal of bony pieces through per-vaginum (Rautela et al., 2016) or C-section (Bashiru et al., 2020).

2. Case history and observation

A three years old doe of non-descript breed was presented to Referral Veterinary Polyclinic with the complaint of blood mixed pus discharge from the vagina for the last four days. Asper the history, animal had completed five months of gestation. Physiological parameters were normal as rectal temperature (101.2 °F), heart rate (67 bpm), respiration rate (35 breaths/minute) and pink conjunctival mucous membrane. Upon radiographic examination, overriding of the fetal cranial bones and shrinkage of the head with a decrease in volume (spalding sign) was noticed along with gas inside the fetus (Robert's sign) and disoriented fetal bones. Abdominal ultrasonography revealed hyperechoic skeletal bones and reverberating gas filled fetal remnants. Upon per-vaginal examination, cervix was partially opened with foul smelling discharge. Based on radiography and ultrasonography, it was diagnosed as fetal maceration.

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3. Treatment and discussion

Animal did not exhibit any discomfort upon presentation with normal physiological condition and mild vaginal blood mixed pus discharge. Initially, therapeutic management was tried with corticosteroid (inj. Dexamethasone) followed by fluid therapy. No fetal skeletal remnants were expelled in the following 24 hours with improper cervical dilation. Therefore, cesarean section was planned to be performed under local infiltration and lumbosacral spinal anesthesia using inj. Lignocaine 2%. Macerated fetus skeletal remnants and decomposed tissues (Fig. 1 and Fig. 2) were removed during the standard surgical procedure following incision at the lower left flank region and uterus was cleaned with diluted povidone iodine solution in normal saline. The uterine incision site was sutured using Catgut No. 0 with Cushing's suture pattern followed by abdominal muscles suturing using Catgut No. 1 with simple interrupted pattern. Skin was sutured using Nylon No. 1 with horizontal mattress. Post operatively animal was treated with inj. Melonex @ 1mg/kg body wt., inj. ceftriaxone @ 25mg/kg body wt. and fluid therapy for 5 consecutive days. Sutures were removed after 16 days and animal recovered un-eventfully post-operatively. Fetal maceration occurs more commonly in bovines and rarely noticed in small ruminants comparatively (Rautela et al., 2016). Bashiru et al. (2020) mentioned that fetal maceration occurs after 100 days of gestation period due to well-developed fetal bones, as in the present case animal completed 5 months of gestation period and also same case report was reported by Prabaharan et al. (2022). Dystocia occurs due to fetal and maternal factors but fetal maceration and mummification is said to be due to fetal causes (Zubair et al., 2022; Tiwari et al., 2025). Rautella et al. (2016) removed the bony pieces per-vaginally after proper lubrication, Tiwari et al. (2025) successfully managed fetal mummification therapeutically. Kumar et al. (2013) successfully managed fetal maceration with surgical approach in a bovine following un-fruitful therapeutic management due to incomplete dilation of cervix, as in case of present case.



Fig. 1: Macerated fetus with remnant fetal skeletons and tissues



Fig. 2: Macerated fetal tissue debris

4. Conclusion

Though fetal maceration is a rare condition in a doe, it affects the reproductive health of the animal and may lead to economical loss to the farmers. In fetal mummification and maceration, diagnosis plays a very important role as seen in the present case. This case report presents a rare case of fetal maceration in non-descript goat and its successful surgical management.

Conflicts of interest and financial disclosures

The authors state that there are no conflicts of interest to disclose

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