Case Report

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Incomplete Cervical Dilation with Fetal Mummification in Goat: A Case Report

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ABSTRACT

The current case details the successful management of dystocia in a goat due to incomplete cervical dilation and fetal mummification. The 'Referral Veterinary Polyclinic', ICAR-IVRI, Izatnagar received the animal, which had a history of brownish-red vaginal discharge and straining for 5 h. Per-vaginal examination revealed a fetal mass lodged in the reproductive tract with incomplete cervical dilation. Induction therapy was administered to facilitate cervical dilation, allowing for the manual extraction of the mummified fetus. After three days of postoperative treatment, the goat recovered without complications.

Introduction

Fetal mummification is an uncommon condition that occurs during the middle or last third stages of gestation with the maintenance of a corpus luteum, leading to the retention of the fetus in the uterus (Robert, 1971). This condition is characterised by the absorption of fetal and placental fluids, autolytic changes in the fetus, involution of the maternal placenta, and eventually, mummification of the fetus. The exact cause of mummification in goats is uncertain, though it is believed that pathogens such as Toxoplasmosis, *Chlamydophila, Pestivirus*, and *Coxiella burnetii* may be involved (Edmondson et al., 2012). This condition is more common in swine (Long, 2009), but also reported in cows, sheep (Alagar et al., 2016), goats (Sasidharan et al., 2023), dogs (Anusha et al., 2023), and horses (Threlfall, 2005). In the majority of cases, the papyraceous type of mummification is common. However, in cattle, a haemostatic type of mummification occurs in which a chocolate brown sticky substance envelopes the entire mummified fetus. In contrast, in the papyraceous type, the fetus shrivels like dry paper (Long, 2009). It affects single and twin fetuses in sheep and goats, and it is more common in primiparous females than pluriparous animals.

History and clinical observation

The 'Referral Veterinary Polyclinic' ICAR-Indian Veterinary Research Institute, Izatnagar received a report of a four-year-old, unremarkable goat that had been suf-

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fering from brownish-red vaginal discharge for two days and straining for five hours. The goat had a history of mating with a buck two months earlier. During the clinical examination, the animal exhibited signs of lethargy and depression. The goat had a congested conjunctival mucous membrane and a rectal temperature of 102.1°F. The goat's vaginal examination revealed a fetal mass lodged in the birth canal, with incomplete dilation of the cervix. Therefore, we initiated induction therapy to facilitate complete cervical dilation and fetal expulsion.

Treatment and discussion

The induction therapy was given to the goat to induce abortion, which included an inj. (Cloprostenol) 1 ml IM, inj. Pregheat (Oestradiol benzoate) 1 ml IM, inj. Dexona (Dexamethasone) 2 ml IM, and inj. Epidosin (Valethamate bromide) 2 ml IV with 250 ml of DNS. The cervix fully dilated after 4 h, and we manually extracted the mummified fetus (Fig. 1). Following the fetal extraction, we administered postoperative treatment to the goat, which included intrauterine injections of Quintas (Enrofloxacin) at 5 mg/kg body weight IM and Melonex (Meloxicam) at 0.5 mg/kg body weight IM for three days. Also, two Furea boluses were kept intrauterine after removing all debris, and a uterine toner was advised. We advised the farmer to continue the treatment for three days, after which the goat recovered uneventfully.

Fig. 1: Mummified fetus

Fetal mummification, a condition observed more frequently in polytocous species compared to monotocous species, occurs when a specific sequence of events occurs within a certain time frame (2^{nd} to 3^{rd} gestation period). It results in a combination of factors that lead to the dehydration and preservation of the fetal remains within the uterus (Lefebvre, 2015). Fetal mummification results in financial losses for farmers due to the loss of fetuses and the associated treatment expenses. It is more common in twin pregnancies than in single pregnancies and is uncommon in goats (Tutt, 1991). Early diagnosis of fetal mummification often relies on radiographic or ultrasonography techniques. The presence of any infectious agents in placental membranes and their isolation, which is responsible for the condition, established the definitive diagnosis. We can employ serological examinations and PCR techniques for confirmatory diagnosis, which provide additional evidence to support the initial findings (Lefebvre, 2015). However, in this specific case, we administered induction therapy and then manually delivered a single mummified fetus by traction. Srinivas et al. (2007) suggested a cervical dilator (valethamate bromide) and PGF2α for the expulsion of a mummified fetus. The exact causes of incomplete cervical dilation remain unclear (Gahlot et al., 2017). However, factors such as hypocalcemia, hormonal imbalances, mineral deficiencies, abnormal enzymatic processes, the number of fetuses, uterine inertia, as well as the season and breed of the animal may contribute to this condition in goats (Palliser et al., 2006). The medical removal of a mummified fetus generally does not impact future fertility, as the fetal contents and uterine cavity are sterile. However, surgical removal may affect fertility if the fetus deeply embeds and lodges against the uterine wall. Currently, improved preventive measures like vaccination, along with proper nutrition, stress management, and reproductive monitoring, help reduce disease incidence and maintain herd fertility.

Conclusion

We diagnosed the present case as fetal mummification and successfully managed it with induction and antibiotic therapy. After three days of postoperative treatment, the goat recovered without any complications.

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Conflict of interest

No conflict of interest to declare.

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