Short Communication

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# Simultaneous Occurrence of Partial and Complete Fetal Mummification in a Goat with Prolonged Gestation

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## ABSTRACT

A four-year-old non-descript goat in her 5th parity was presented to Veterinary Clinical Complex, Bihar Veterinary College, Bihar Animal Science University, Patna, Bihar. Owner complained that the animal was pregnant but even after 6 months, the animal did not show any signs of parturition however, the abdomen still showed enlargement. Kidding was induced by synthetic PGF2 alpha analogue and estradiol benzoate. Among three fetuses delivered, one was completely and two were partially mummified.

***Keywords*:** Goat, Partial and complete mummification, Prolonged gestation.

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## INTRODUCTION

Parturition related problems are less common in small ruminants (Gupta *et al.,* 2010) compared to large ruminants like buffalo (Singhal *et al.,* 2011) or in cow (Ahuja *et al.,* 2016) and canine (Singhal *et al.,* 2017). In small ruminants fetal mummification is an uncommon and sporadic condition which affects the single as well as multiple fetuses. The two types of mummification in ruminants are hematic and papyraceous. Hematic mummification is found in cattle whereas small ruminants are mostly affected by papyraceous mummification, in which fetal death occurs in middle or last third of gestation and causes abortion. A persistent corpus luteum is a cardinal feature of this condition (Roberts, 1986). In sheep and goat, usually the mummified fetus is not responsible for prolongation of gestation period and abort spontaneously, however, the present case is unique wherein the fetal mummification in goat is not followed by abortion and is accompanied by prolonged gestation.

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## CASE HISTORY AND OBSERVATIONS

A four-year-old doe in her 5th parity was presented to Veterinary Clinical Complex, Bihar Veterinary College, Bihar Animal Science University, Patna, Bihar. According to history, the natural mating by buck was done six months ago, but not proceeds with the external signs of kidding in doe after 5 months of pregnancy.

Clinical examination revealed closed cervix, abdominal ballottement revealed presence of still, fetal skeletons, clinical parameters *viz.* rectal temperature, heart rate, respiration rate were within normal range along with pinkish conjunctival mucus membrane. Radiography revealed presence of three fetal skeletons with almost no fetal fluids in the uterus (Fig. 1). Ultrasonography was carried out to confirm the fetal viability and revealed presence of multiple dead foetuses with no visible heart beats, cotyledons and fetal fluids.


**Fig. 1:** Radiograph showing fetal skeletons with almost no fetal fluid in uterus

## TREATMENT AND DISCUSSION

Presence of still fetal skeletons during abdominal ballottement followed by scanty fluid in X- ray examination and finally the USG showed multiple dead foetuses with no visible heart beats, cotyledons and fetal fluids confirmed the case as fetal mummification along with prolonged gestation in goat.

To treat the case it was decided to induce kidding in the goat, for which synthetic PGF2 alpha analogue (Cloprostenol @ 250mcg), and 0.2 ml of estradiol benzoate both intra-muscular were administered in the goat. Later after 24 h the vaginal examination revealed the dilatation of cervix wherein 4 fingers could pass easily. Extraction of fetuses was done by vaginal maneuvering and forced traction. Three dead fetuses were removed per-vaginally, in which one fetus was completely mummified and two fetuses were partially mummified (Fig. 2). In order to prevent any infection, the doe was treated Inj. Enrofloxacin @ 5 mg/kg Bwt for 5 days. Inj. Melonex @ 0.5 mg/kg Bwt I/M OD for 3 days, Susp. Uterotone® @ 30 ml P.O BID for 5 days, Cleanex® @ 1bolus in each uterine horn for 3 days was put intra-uterine.

**Fig. 2:** One completely mummified and two partially mummified goat fetuses extracted vaginally

Fetal mummification is less common in goat and is usually accompanied by spontaneous abortion or is represented as a cause of dystocia (Lefebvre, 2015). Contrarily, the present case reported the fetal mummification in goat alongwith the prolonged gestation likewise in large ruminants (Singhal *et al.*, 2012). The most common infectious causes of fetal mummification include toxoplasma, Chlamydophila and Coxiella infection (LeFebre, 2015). Other etiology may be the energy and protein deficiency (Pugh and Baird, 2012), however, mostly the cases are reported with unidentified etiology as in the present case. In species with multiple offspring the mummification may

involve one or few fetuses (Roberts, 1986) but in this study all the three kids delivered were mummified. In goats with twin or triplet fetus, the incidence of fetal mummification is more due to inadequate nutrition (Mahajan *et al*., 2022). Partial as well as complete mummification of fetus(es) in this case study suggest that fetal mummification in all the three fetuses occurred at different stages (Rautela *et al*., 2018). Prolongation of gestation period due to lack of stimulation of the hypothalamic pituitary adrenal axis may also take place (Singhal *et al.,* 2016). Although the mummified cases are sterile in nature yet the antibiotics, ecbolics, and other supportive medicaments were given to overcome the chances of any sort of infection.

## CONCLUSION

Fetal mummification is uncommonly observed in goat; moreover, in this case mummification of three fetuses occurred at different time interval. The successful treatment was done by using synthetic PGF2 alpha analogue, estradiol benzoate along with supportive medication.

## CONFLICT OF INTEREST

None

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