



The Indian Journal of Animal Reproduction

The official journal of the Indian Society
for Study of Animal Reproduction
Year 2025, Volume-46, Issue-1 (March)



ISSN 0970-2997 (Print)

ISSN 2583-7583 (Online)

Management of Dystocia due to Fetal Ascites in a Non-Descript Doe

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ABSTRACT

Fetal ascites, characterized by an abnormal accumulation of fluid in the fetal peritoneal cavity, is a rare but significant cause of dystocia in small ruminants. The present paper describes the successful management of dystocia due to fetal ascites in a four-year-old pluriparous non-descript doe using minimally invasive obstetrical procedure *i.e.*, puncture of the fetal abdomen to reduce its size and facilitate per-vaginal delivery which was effectively utilized as an alternative approach to cesarean section. This approach minimized risks and ensured favorable outcomes. Routine antenatal ultrasonographic monitoring is recommended to detect fetal anomalies early and optimize the management of high-risk pregnancies in small ruminants.

Key words: Dystocia, Fetal ascites, Non-descript doe, Obstetrical management

How to cite: Manivannan, N., Rasool, A., Thulasiraman, S., Rangaswamy, B. G., & Narayanasamy, A. (2025). Management of dystocia due to fetal ascites in a non-descript doe.

The Indian Journal of Animal Reproduction, 46(1),81-83.10.48165/ijar.2025.46.01.14

INTRODUCTION

Fetal ascites, a condition characterized by the pathological accumulation of fluid within the fetal peritoneal cavity, arises due to an imbalance between fluid production and drainage. This may result from impaired lymphatic function, obstruction of drainage pathways, or reduced urinary excretion (Purohit *et al.*, 2012; Sheetal *et al.*, 2017). Although fetal ascites is recognized as a potential cause of dystocia in farm animals, it is uncommon in goats (Hanie, 2006). Sporadic cases have been reported in

Malabari goats from the Kerala region (Philip *et al.*, 2012; Sarangom *et al.*, 2020). The etiology of fetal ascites is multifactorial and has been linked to uterine dropsical conditions, mesotheliomas of the fetal abdomen, and infections such as brucellosis (Honparkhe *et al.*, 2003). Other potential contributing factors include prenatal exposure to viral infections, physical trauma, toxicity, and vitamin deficiencies (Baumgartner, 2021). Clinically, pregnant does carrying fetuses with ascites may exhibit symptoms such as abdominal distension, anorexia, lethargy, dyspnea, and continuous straining during labor (Sarangom *et al.*, 2020).

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Received ; 04.01.2025; Accepted 25.01.2025

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The rarity of this condition, coupled with its diverse etiologies, makes it a diagnostic and therapeutic challenge. The present paper documents a case of dystocia caused by fetal ascites in a nondescript doe and highlights its successful resolution.

CASE HISTORY AND OBSERVATIONS

A four-year-old pluriparous non-descript doe was presented to the Emergency Unit at Madras Veterinary College with a history of full-term pregnancy accompanied by persistent straining for the past four hours, without any observable progression in the parturition. The animal appeared dull and depressed, with clinical parameters within normal physiological limits: body temperature of 102.4°F, respiratory rate of 27 breaths per minute, and heart rate of 76 beats per minute. Per-vaginal examination revealed a relaxed vulva, serosanguineous vaginal discharge, and complete cervical dilation. The fetus was positioned in a posterior longitudinal presentation with dorso-pubic orientation, and its hind limbs were extended into the birth canal (Fig. 1). A thorough per-vaginal examination of the fetus revealed marked abdominal distension, presenting a fluid-filled, fluctuating mass that obstructed the normal parturition process. Based on these findings, the case was diagnosed as dystocia due to fetal ascites.



Fig. 1. Per-vaginal delivery of fetus with enlarged abdomen

TREATMENT AND DISCUSSION

Medical management of the case began with the administration of epidural anesthesia, using 1 mL of 2% lignocaine hydrochloride injected into the lumbosacral space to facilitate obstetrical intervention. As the fetus was confirmed

to be non-viable, the fetal abdomen was punctured using a sharp eye hook to decompress the abdominal cavity and reduce its size, enabling manual extraction. Following successful reduction of the abdominal distension, the fetal mal-presentation was corrected, and the fetus was delivered per vaginally via forced traction.

Examination of the delivered fetus revealed gross abnormalities, including an enlarged abdomen, shortened limbs, thin skin, and the presence of amber-colored peritoneal fluid (Fig. 2). Necropsy of the fetus confirmed the accumulation of approximately 3 liters of fluid within the peritoneal cavity, which was identified as the primary cause of the dystocia.



Fig. 2. Abdominal enlargement of fetus due to ascites

The doe received comprehensive post-operative care, including an intramuscular injection of oxytocin (5 IU, I/M) to stimulate uterine involution and promote expulsion of any retained fetal membranes. Antibiotic ceftiofur (xyrofur® @ 2.2 mg/kg, I/M) was administered once daily for three days to prevent secondary infections. Anti-inflammatory treatment with meloxicam (melonex® @ 0.5 mg/kg, I/M) was given as a single dose to manage pain and inflammation. Supportive care included intravenous administration of 25% dextrose solution (@ 10 mL/kg, I/V) and calcium borogluconate (mifex® @ 1 mL/kg, I/V) for three consecutive days. The doe showed a marked improvement and made a complete recovery within five days, demonstrating the efficacy of the timely intervention and therapeutic approach employed in the case.

The incidence of dystocia in small ruminants is relatively low, reported to be less than 5% (Bhattacharyya *et al.*, 2015). Among the potential causes of dystocia in goats, fetal ascites is an uncommon yet significant contributor. Fetal ascites could result from hepatic lesions, general venous congestion, or urinary obstruction, which may or

may not be accompanied by bladder rupture (Simoes, *et al.*, 2021). Other factors such as hereditary predispositions, uterine pathologies, or placental dysfunction due to maternal-fetal incompatibility can also contribute to fetal ascites (Noakes *et al.*, 2018; Windsor, 2018).

In the present case, the ascitic condition likely stemmed from an impaired urinary system, leading to fluid accumulation within the peritoneal cavity. Alternatively, the overproduction or insufficient drainage of peritoneal fluid could have exacerbated the condition. The successful resolution of dystocia in this instance was achieved through puncture of the fetal abdomen, allowing decompression and subsequent delivery of the anomalous fetus. This approach eliminated the need for a cesarean section, which is often considered the final resort in cases involving a narrow birth canal and significant fetal abdominal distension (Purohit and Gaur, 2011).

Although cesarean section can effectively resolve such cases, it is associated with increased risks, including postoperative complications and prolonged recovery for the dam. Thus, techniques that avoid surgical intervention are preferable when feasible. Antenatal monitoring through ultrasonography plays a critical role in detecting fetal anomalies early in gestation, facilitating timely clinical decisions to prevent peripartum complications (Suguna *et al.*, 2008).

CONCLUSION

Fetal ascites, though a rare cause of dystocia in small ruminants, poses significant challenges requiring prompt and effective management. The present case demonstrated the successful resolution of dystocia in a nondescript doe, avoiding the need for cesarean section. Early diagnosis using advanced imaging techniques, such as ultrasonography, is crucial for identifying fetal anomalies and planning appropriate interventions.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ACKNOWLEDGEMENT

The authors express their sincere gratitude to the Director of Clinics and the Head of the Department of Veterinary Gynaecology and Obstetrics for their invaluable support and for providing the necessary facilities to carry out this work.

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