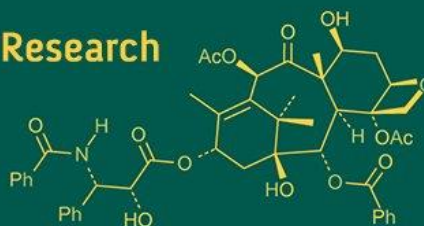


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Successful correction of foetal anasarca in buffalo through caesarean section: A case report

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Abstract

A case of dystocia in a non-descript buffalo was presented to the Veterinary Clinical Complex, Parbhani, with a history of prolonged gestation and continuous straining for the past two days without successful parturition. Per-vaginal examination revealed a fully dilated cervix and the fetus in anterior presentation with extended forelimbs. The absence of fetal reflexes confirmed fetal death. The fetus exhibited marked subcutaneous edema, excessive fluid accumulation, and a bloated appearance, characteristic of fetal anasarca—a rare congenital anomaly leading to dystocia. Despite multiple attempts at gentle traction, delivery was unsuccessful owing to the increased fetal size and edematous condition. Therefore, a cesarean section was performed to relieve the dystocia and successfully remove the dead fetus. Fetal anasarca results from abnormal accumulation of serous fluid within fetal tissues and body cavities, often associated with placental dysfunction, genetic abnormalities, or lymphatic obstruction. It is reported more frequently in buffaloes and crossbred cattle, with hydropic changes making vaginal delivery nearly impossible. The etiology may involve infectious agents, maternal nutritional deficiencies, or inherited metabolic disorders affecting fluid homeostasis. Early diagnosis through clinical and ultrasonographic examination and timely surgical intervention are crucial to prevent maternal exhaustion, uterine rupture, and septic complications. Post-operative management with broad-spectrum antibiotics, fluid therapy, and uterine tonics ensures better recovery and minimizes reproductive complications. Prompt and skilled surgical intervention thus remains the key to successful management of dystocia due to fetal anasarca in bovines.

Keywords: Dystocia, fetal anasarca, non-descript breed, cesarean section

Introduction

Fetal anasarca is a congenital disorder characterized by excessive accumulation of fluid within the fetal tissues, resulting in marked subcutaneous edema and enlargement of the fetus. The condition is most frequently observed in buffalo and occasionally in sheep (Sloss and Dufty, 1980) [4]. It is primarily attributed to abnormalities in fetal circulation or obstruction of the lymphatic system, leading to impaired fluid drainage.

Fetal anasarca is recognized as a significant cause of dystocia in domestic animals, as the pronounced edema markedly increases fetal size, hindering its passage through the pelvic canal (Noakes *et al.*, 2001) [2]. In certain cases, mild hydrops of the fetal membranes or placental edema may contribute to its development (Arthur *et al.*, 2001) [2]. The present report documents a case of fetal anasarca in a buffalo, emphasizing its clinical relevance and obstetrical implications.

History and clinical observation

A non-descript buffalo, approximately six years of age, was presented to the Veterinary Teaching Complex, Parbhani, with a history of three previous parities. The animal had completed its gestation period and was showing signs of continuous straining for the past two days, indicating difficulty in parturition. Upon per-vaginal examination, the cervix was found to be fully dilated, and the fetus was in anterior presentation and dorso-sacral position with extended forelimbs. Traction applied to both forelimbs failed to deliver the fetus due to marked fetal anasarca. Therefore, the case was successfully relieved by performing a caesarean section.

Treatment

The affected buffalo was initially stabilized with intravenous fluid therapy consisting of Dextrose Normal Saline and Normal Saline (3 L each), along with Calcium borogluconate (250 mL, I/V). Supportive medication included an antibiotic (Ceftiofur @ 1.1 mg/kg b.w., I/M) and an anti-inflammatory (Flunixin meglumine @ 1.1 mg/kg b.w., I/M). Per-vaginal examination revealed the fetus in anterior presentation, dorso-sacral position, with extended forelimbs. Manual traction using obstetrical snares on both forelimbs failed to deliver the fetus due to severe fetal anasarca. Consequently, a caesarean section was performed to relieve the dystocia.

The surgery was conducted under local infiltration anaesthesia using 90 mL of 2% lignocaine hydrochloride, with the animal positioned in right lateral recumbency. A paramedian incision parallel to the milk vein was made, as described by Roberts *et al.*. After separating the subcutaneous tissues and muscles, the gravid uterus was exteriorized aseptically. A linear incision was made on the uterine body to deliver the markedly edematous fetus. The uterine cavity was then flushed with lukewarm normal saline mixed with 7.5% povidone-iodine, followed by metronidazole and strepto-penicillin solution to minimize infection. The uterine incision was closed using a double-layer continuous suture pattern (Cushing followed by Lembert) with chromic catgut No. 0. The abdominal wall was sutured following standard aseptic procedures, with intermittent flushing using metronidazole solution to maintain sterility.

Postoperatively, the 350 kg dam received ceftriaxone and tazobactam (3 g + 0.375 g, I/V) for five days, flunixin meglumine (2.2 mg/kg b.w., I/M) for five days, and chlorpheniramine maleate (0.5 mg/kg b.w., I/M) for seven days. The surgical site was dressed daily with 7.5% povidone-iodine and a herbal fly-repellent spray; sutures were removed on the 15th postoperative day. Supportive therapy included IV dextrose saline (2 L/day) and multivitamin injection (15 mL, I/V) for five consecutive days. The management protocol followed the recommendations of Verma *et al.* (2018) [6], resulting in an uneventful recovery of the dam.



Fig 1: Site of Caesarean Section

Discussion

Foetal anasarca is the result of a disturbance of fluid exchange and may be of placental origin. In mild cases the foetus may be delivered by traction. Multiple incisions into the oedematous parts of foetus to drain the liquid or the removal of limbs is recommended whenever traction failed (Roberts, 1971) [3]. In the present case Cesarean section was performed by the obstetrician since the condition was severe. The probable causes of foetal anasarca are hereditary predisposition due to autosomal recessive genes (Arthur *et al.*, 1996) [1] especially affecting normal embryonic lymph node development (Tamizharasan *et al.*, 2008) [5].



Fig 2: Fetal Anasarca

Conclusion

The present case highlights the successful management of dystocia in a non-descript buffalo caused by severe fetal anasarca through timely surgical intervention. Fetal anasarca, though rare, poses a significant threat to both dam and fetus due to excessive edema and increased fetal size, which make vaginal delivery nearly impossible. Prompt diagnosis, careful obstetrical evaluation, and the decision to perform a caesarean section were critical in ensuring the survival and uneventful recovery of the dam. Effective perioperative management, including antibiotic coverage, anti-inflammatory therapy, fluid supplementation, and proper postoperative care, contributed to favorable outcomes. This case emphasizes that early recognition of fetal anomalies and timely cesarean intervention are essential to prevent maternal complications and ensure reproductive health in future lactations.

Disclaimer (Artificial Intelligence)

Author(s) hereby declares that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Conflict of interest

There is no conflict of interest regarding the present study among the authors.

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