Short Communication

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Dystocia in Jersey Crossbred Cow due to Schistosoma Reflexus Foetus

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ABSTRACT

Dystocia or difficult birth in cattle demands urgent action due to life-threatening risks. Schistosomus reflexus (SR), a severe fetal anomaly, results in dystocia and contributes to economic losses. A case study involving a crossbred Jersey cow highlights prompt intervention to extract a non-viable calf with SR, emphasizing the need for careful breeding practices and further research to manage its impact on cattle production.

Keywords: Calf, Cattle, Fetal, Manual Traction, Monstrosity.

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INTRODUCTION

Dystocia requires immediate intervention due to fetal or maternal factors. Delayed action risks fatal complications such as necrotic metritis. Stable cases can be managed medically, but cesarean section is necessary if instability persists (Parkinson et al., 2019). Fetal monstrosities, stemming from developmental anomalies, often lead to dystocia for the dam (Patel et al., 2015; Varudharajan et al., 2019). These include diverse functional and morphological abnormalities (Malik et al., 2022). Schistosomus reflexus (SR) is a rare fetal abnormality in ruminants, resulting from severe genetic and developmental issues, leading to fetal mortality. While common in cattle, SR can also affect other animals like goats, sheep, and horses, causing economic losses due to reduced offspring viability and production (Yadav et al., 2017). The malformation's exact cause remains unclear, but it's likely influenced by genetic factors, including recessive genes, mutations, chromosomal abnormalities, and environmental exposure (Munif et al., 2023). SR diagnosis involves visible exposure of visceral organs and spinal inversion. "Schistosomus"

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refers to abdominal exposure, while "reflexus" indicates vertebral column angulation (Parkinson et al., 2019). Assisted delivery, often required for SR, involves per-vaginal traction with lubrication and anesthesia for small-sized fetuses. Fully developed cases may need surgical interventions like fetotomy or cesarean section (CS) (Munif et al., 2023). Prognosis remains unclear in such cases due to the possible occurrence of toxemia (Rashid et al., 2022). In this study, we discuss a field case of dystocia in a Jersey cow and characterize Schistosoma reflexus in a dead calf after successful management by manual traction.

CASE HISTORY AND OBSERVATIONS

A 5.5-year-old, pluriparous, full-term pregnant crossbred Jersey cow was attended by veterinarians stationed at ICD and MVU, Handwara, in the Kupwara district of Jammu and Kashmir. The cow had a history of full-term gestation, labor, and difficulty in parturition for the past 13 hours. Upon examination, the animal appeared dull and depressed, lying in lateral recumbency. Clinical assessment revealed tachycardia, pale mucous membranes and edematous vulva. A per vaginal examination revealed a completely dilated cervix and protrusion of fetal abdominal contents via the vulva. Examination of the fetus revealed ventral curvature of the vertebral column, along with other visceral organs, and the hind limbs were present in the birth canal. The diagnosis was a fetal monster due to Schistosomus reflexus. It was further determined that the visceral organs belonged to the fetus, and obstetrical maneuvers were considered necessary to extract the fetus from the birth canal.

TREATMENT AND DISCUSSION

The treatment plan for this case involved manually extracting the deceased fetus through traction. To prevent shock during fetal removal and address dehydration, 3 liters of 5% Dextrose fluid were administered intravenously. Flunixin meglumine, at a dose of 0.5 mg/kg BW, was initially given intramuscularly for its analgesic and anti-inflammatory properties. Caudal epidural anesthesia was performed between the first and second intercoccygeal spaces using 5 mL of 2% Lignocaine hydrochloride. The birth passage was lubricated with obstetrical gel. Traction was applied to the head and two limbs, while one limb was gently pushed back inside the uterus. This facilitated the delivery of the monster fetus along with its fetal membranes (Fig. 1). Subsequently, a female fetus was delivered along with its exposed viscera. After fetal delivery, the dam received 1500 mg of enrofloxacin, intravenous fluids, and anti-inflammatory medication for 3 days. The dam's recovery was uneventful.

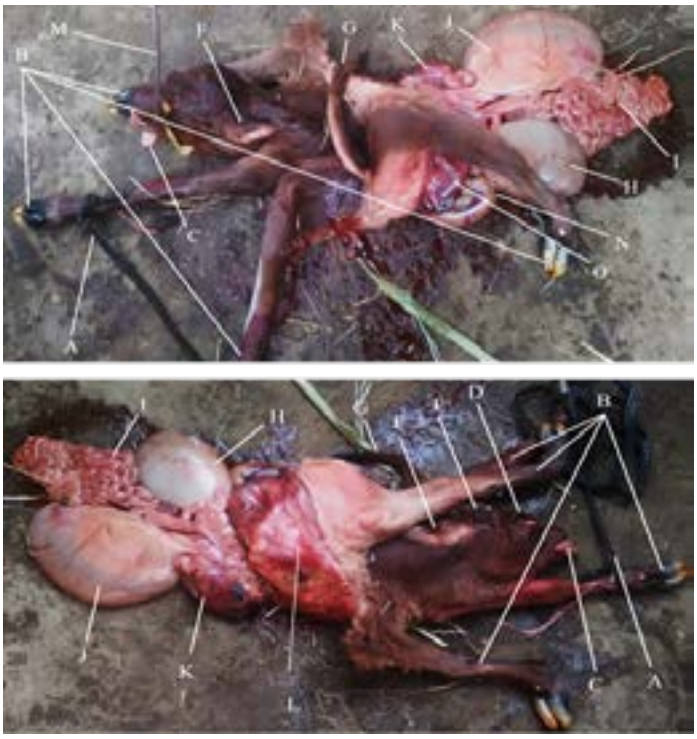

Fig. 1: Abnormal visceral organs and defective appendicular skeleton in dead calf with Schistosomus reflexus: (A) Traction rope (B) Ankylosed limbs (C) Protruded tongue (D) Eye (E) Head (F) Ear (G) Tail (H) Rumen (I) Small intestine (J) Abomasum (K) Omasum (L) Hypoplasia of right lung (M) Long flexible cane hook (N) Large intestine (O) Liver

Congenital defects are prevalent in cattle and often have economic implications. Dystocia in cattle is associated with various fetal malformations, including conditions like SR and Perosomus Elumbis, which are common in both cattle and buffaloes (Sitali et al., 2014). SR occurs sporadically in several breeds (Citek et al., 2012; Sitali et al., 2014; Patel et al., 2015; Varudharajan et al., 2019; Munif et al., 2023). This study observed true SR in a non-viable calf after dystocia correction in a crossbred Jersey cow, consistent with previous findings (Sitali et al., 2014; Varudharajan et al., 2019; Munif et al., 2023). Genetic abnormalities likely contribute to this defect, affecting post-gastrulation embryos and the intermediate mesoderm. SR is associated with Murine gene mutations and occurs in both crossbreeding and inbreeding programs (Citek et al., 2012). Recessive traits play a role in SR, detectable through molecular analysis like SNP-based genetic mapping. Sires with a history of SR in their progeny are typically not recommended for cow breeding (Sitali et al., 2014). Despite no reported breeding issues, sires could still contribute to SR occurrence in

offspring. Additionally, certain recessive factors in semen during artificial insemination can lead to SR in offspring. Dystocia due to SR is common in cattle, stemming from abnormal fetal posture and fetopelvic disproportion, often requiring interventions such as fetotomy, cesarean section, or manual traction (Newman et al., 2008). Manual traction is recommended when correction of dystocia through this method appears feasible.

CONCLUSION

Dystocia in cattle demands swift intervention to avert severe consequences, influenced by both fetal and maternal factors. Schistosomus reflexus (SR) presents a formidable fetal abnormality, causing economic losses in livestock. While genetic factors are suspected, careful breeding is crucial. Timely management, including manual extraction and supportive care, is vital.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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