Case Report

SUCCESSFUL DELIVERY OF A SCHISTOSOMUS REFLEXUS MONSTER IN A NON-DESCRIPTIVE DOE: CASE REPORT

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ABSTRACT

A four-year old fullterm pregnant doe in its third parity was presented to the obstetrical ward with the history of unproductive straining for the past 24 hours. Physical examination revealed that the doe was anorectic, dehydrated, and had moderate rise in body temperature. Trans-abdominal ultrasonography confirmed the presence of an abnormal dead fetus. Per-vaginal examination revealed that the cervix had incomplete dilatation. Hence, the cesarean section was opted to relieve the dead fetus. After cesarean section, the defective fetus was found to be schistosomous reflexus monster. Postoperatively, the doe had an uneventful recovery, indicative of a successful surgical outcome.

Key words: Cesarean section, dystocia, schistosomus reflexus.

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INTRODUCTION

In small ruminants, the most common fetal causes of dystocia are postural abnormalities and twin or triplet pregnancies. In contrast, feto-pelvic disproportions are less common. The incidence of fetal monsters such as schistosomus reflexus, perosomus elumbis, double monsters, and fetuses with general ankylosis are comparatively higher in cows than in other species. Schistosomus reflexus, a congenital fetal disorder, is predominantly observed in cattle, with only rare occurrences in small ruminants (Roberts *et al.,* 1971). Similarly, the findings of Selvaraju *et al.* (2020) endorsed that this condition is more common in cattle, with limited cases reported in sheep and goats.

According to Laughton *et al.* (2005), A true schistosomus reflexus is a rare congenital disorder marked by both exposed viscera and spinal inversion, resulting from a severe abdominal closure defect. The defectis

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often associated with skeletal deformities and typically posesa significant obstetric challenge. The present case documents a rare instance of schistosomus reflexus in a doe and its successful management by cesarean section.

CASE HISTORY AND CLINICAL OBSERVATIONS:

A four year old, fullterm pregnant doe in its third parity was presented to the obstetrical ward with a history of unproductive straining for the past 24 hours. Physical examination revealed that the doe was anorectic, dull, dehydrated, and had a moderate rise in body temperature. The mucous membranes appeared pinkish, and the capillary refill time was within normal limits (<2 seconds). Trans-abdominal ultrasonography confirmed the presence of an abnormal deadfetus with no detectable fetal movements and heartbeat. Obstetrical examination revealed that the cervix was hard and partially dilated, allowing passage of only two fingers, indicating incomplete cervical dilatation. Hence, cesarean section was opted instead of mutational obstetric procedures to deliver the fetus.

TREATMENT

The doe was positioned in right lateral recumbency, and the left flank region was prepared aseptically. Epidural anesthesia was administered using 2 mL of 2% lignocaine at the sacro-coccygeal site. A line block was performed using 6 mL of 2% lignocaine at the aseptic left flank region. A 5-6 inch incision was made through the skin, abdominal muscle, and peritoneum, allowing exteriorization of the gravid uterine horn. An incision was made on the dorsal curvature of the uterine horn, and the abnormal dead fetus was found in posterior longitudinal presentation and dorso-sacral position. Subsequently, the dead fetus was extracted through the uterine incision along with its fetal membranes.

Following the extraction of the fetus, the uterus was thoroughly checked for presence of additional fetuses. Later, the uterus was gently cleaned with Inj. metronidazole solution, and the Furea bolus were placed intrauterine. Subsequently, the uterine wall was sutured in double layers (Cushing's and Lambert's patterns) using absorbable catgut (No. 2-0) (Fig. 4). The peritoneal cavity was thoroughly cleaned with normal saline, and the abdominal incision was closed with a simple continuous lock stitch pattern using absorbable catgut (No. 2-0). Finally, the skin incision was sutured with simple horizontal mattress using non-absorbable silk.

Post-operative treatment was provided with inj.ceftriaxone (250 mg, BID, IM), inj. flunixin meglumine (50 mg, OD, IM) and inj. Nurocare (2ml, OD, IM) for 5 days. The surgical wound was dressed with oint. povidone iodine twice a day for a week. Post-operatively, the doe recovered without complications and was presented for suture removal after 10 days, indicating a successful surgical outcome.

Interestingly, the gross examination of the abnormal dead fetus revealed

characteristic features, including exposed abdominal viscera through an incompletely closed abdominal wall (Fig.1), spinal inversion with acute angulation, resulting in close proximity between the fetal head and tail (Fig.3). According to Laughton *et al.,* (2005), these findings confirmed the diagnosis of true schistosomus reflexus.

DISCUSSION

Schistosomus reflexus appears primarily in cattle (Prus *et al.,* 2022 and Munif *et al.,* 2023), and less frequently in sheep (Raj *et al.*, 2017 and Kumar *et al.,* 2020) and goat (Jadhao *et al.,* 2021 and Abdollahpour *et al.,* 2023). The exact cause of schistosomus reflexus was still unclear; the majority of these anomalies may be related to genetic factors, mutations, chromosomal anomalies, infectious agents, and environmental factors, or the combination of these (Ozsoy *et al.,* 2009). Recent studies assumed that the etiology was of genetic origin, specifically the transmission of autosomal recessive genes with incomplete penetrance to the developing embryo (Laughton *et al.,* 2005 and Balamurugan *et al.,* 2020).

Perusal of literature revealed that gentle traction via the vaginal route could effectively manage dystocia caused by smallsized schistosomus reflexus fetuses. However, larger-sized fetal monsters, especially with incomplete cervical dilation, often required cesarean section.

Further, Raj *et al.,* (2016) delivered the schistosomus fetus co-twin per-vaginally by mutational operations in a non-descriptive ewe. Whereas, Prabaharan *et al.,* (2020), Jadhao *et al.*, (2021) and Abdollahpour *et al.,* (2023) adopted manual traction for successful per-vaginal delivery of small sized schistosomus fetus in does.

However, for fully developed large sized schistosomus reflexus, fetotomy or cesarean section was imperative (Kalita *et al.,* 2004). Accordingly, Tsuma *et al.,* (2008) and Ravikumar *et al.,* (2013) opted cesarean section to deliver the large sized schistosomus fetal monster in does. Especially, in the present case, dystocia was attributed to both maternal (incomplete cervical dilation) and fetal (schistosomus reflexus) factors, necessitating cesarean section for safe delivery.

Further, the gross examination of the schistosomus reflexus fetus revealed characteristic features, including exposed abdominal viscera (liver, spleen, rumen, reticulum, omasum, abomasum, and intestines) through an incompletely closed abdominal cavity (Fig.2). Skeletal anomalies viz. spinal inversion resulting in close proximity between the fetal head and tail, and ankylosed hind limbs were also recorded. According to Roberts (1982) classification, these findings confirmed the diagnosis of a rare case of schistosomus reflexus. However, the present case displaying both visceral exposure and spinal inversion is considered as true schistosomus reflexus (Laughton *et al.,* 2005). The present case corroborated with the findings of Tsuma and Abuom (2008), who delivered a case of true schistosomus reflexus monster through cesarean section, and reported similar gross

findings, viz., exposed abdominal viscera and inverted spine displaying a distinctive ventral convex curvature with ankylosed limbs in a ewe. Whereas Mehraj *et al.,* (2015) delivered a typical case of schistosomus reflexus monster by cesarean section in a local ewe of Kashmir, and reported exposed viscera and the marked spinal inversion.

The present case concludes that cesarean section was the technique of choice to deliver the large sized fetal anomalies, particularly when cervical dilatation was incomplete.This surgical intervention was considered the most practical approach to ensure both the safety of the doe and permit successful delivery of the fetal monster.

Fig.1. True schistosomus reflexus monster with incomplete closure of abdominal wall and ankylosed hind limbs

Fig .2. True schistosomusreflexus monster with exposed abdominal viscera (Liver, Stomach and Intestines)

Fig .2. True schistosomusreflexus monster with marked spinal inversion (fetal tail nearby fetal head)

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