



## Per-Vaginal Relieving of Dystocia Due to *Schistosoma reflexus* in A Cow

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### Abstract

*The present case report describes resolving a case of dystocia due to Schistosoma reflexus in a non-descript cow following obstetrical maneuvers.*

**Keywords:** Dystocia, Fetotomy, Monster, *Schistosoma reflexus*.

## Introduction

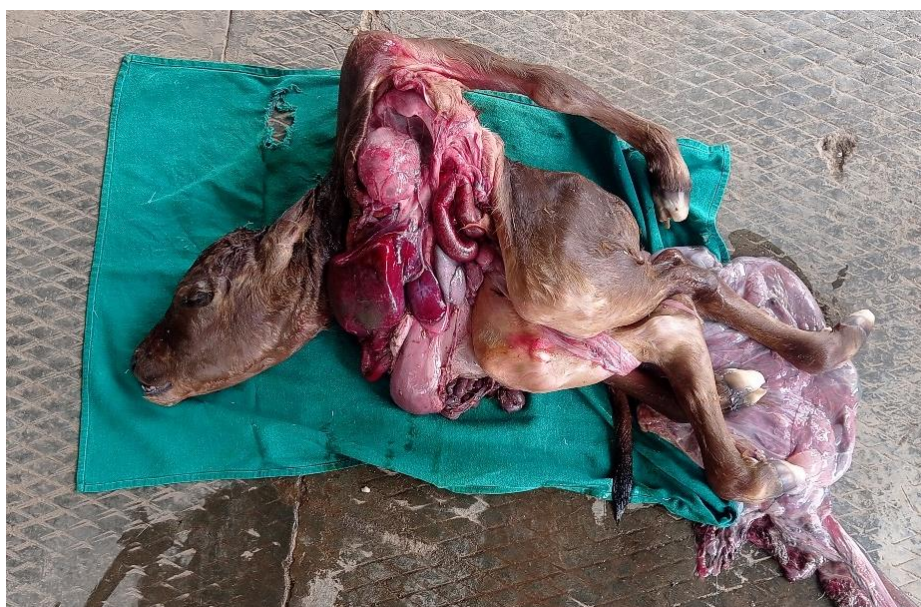
*Schistosomus reflexus* (SR) is a rare type of congenital disorder of fetus characterized by the presence of exposed abdominal and often thoracic viscera (*Schistosomus*), and marked spinal angulation leading to a distinct ventral curvature of vertebral column (*reflexus*). Reflexus is most frequently documented in ruminants (Kumar *et al.*, 2020), although the existence of a congenital schistocoelia has been recorded in various species (Pivnick *et al.*, 1998). SR has been frequently reported in cattle, buffalo and occasionally in sheep, goat and other species (Robert, 1971; Sahu *et al.*, 2024) with an occurrence of 0.01 to 1.3% (Sloss, 1967; Knight, 1996). worldwide. SR occurs as early as the post-gastrulation embryo and involves the intermediate mesoderm (Mukasa, 1989). This condition pertains to the family of deformities involving failure of complete closure of ventral aspect of fetal body wall. However, the exact cause leading to aforesaid defect cannot be stated. Moreover, Laughton *et al.* (2005) indicated possibility of genetic cause where fetus carries recessive gene from dam as well as sire, leading to defective embryonic development. However, only the cases that display both visceral exposure and spinal inversion are considered as true *Schistosomus reflexus* (Laughton *et al.*, 2005). In humans, thoraco-abdominal syndrome (TAS) displays striking similarities with *Schistosomus reflexus* monster (Pivnick *et al.*, 1998). The exact aetiology of this monstrosities is unknown but it may be due to genetic factors, mutation, chromosomal anomalies, infectious agents and environmental factors or combination of all these factors (Noakes *et al.*, 2019)

## Case History and Observations

A pluriparous non-descript cow was presented to the Referral Veterinary Polyclinic with a history of straining for more than 6-8 hours at full term of gestation. Clinical observation revealed rectal temperature to be 100.5°C The conjunctival mucous membrane was congested and animal was completely exhausted. Gynaecological examination revealed a completely dilated cervix and fetus in the posterior longitudinal presentation. Furthermore, the fetal parts were palpable during the per-vaginal examination and exposed thoraco-abdominal viscera could be felt through the partially closed ventral body wall of the fetus. Accordingly, dystocia due to SR was detected in the present case.

## Treatment and Discussion

Upon arrival, the animal was restrained first, followed by cleansing of the perianal region of the animal with 0.1% potassium permanganate. Later on, epidural anaesthesia with 4 ml of lignocaine hydrochloride (Lox 2%), followed by lubrication of the birth canal with liquid paraffin, was achieved. Subsequently, followed by animal preparation, gentle traction, and manipulation were done to correct both flexed hindlimbs. Following gentle traction and correction of malformed fetus with SR was delivered (**Figure A**).



**Figure A:** *Schistosoma reflexus* in calf

Postoperative treatment included administration of DNS 2000 ml i/v, RL 1000 ml IV, antibiotic Ceftiofur sodium (Xyrofur™) at 2.2/kg body weight i/m and injection of Meloxicam (Melonex®) @ 0.5 mg/kg body weight i/m were administered for five days. The animal was discharged after 3 to 4 hours of delivery, and the farmer was advised to follow the prescribed treatment and to give palatable feed with limited access to drinking water to avoid chances of prolapse. The follow-up of the case ensured the successful recovery of the dam within 10 days.

Dystocia may arise due to maternal or fetal factors. The fetal cause of dystocia is a major contributor to total bovine dystocia (Kumar *et al.*, 2018). SR is a rare but important fetal cause, leading to considerable loss to cattle owners. The dystocia in the present case was due to fetopelvic disproportion and malposture (Youngquist and Threlfall, 2007). The definite cause for the occurrence of SR has not been established yet, but several authors have suggested that genetic defects and the transfer of an autosomal recessive gene with incomplete penetrance to a developing embryo are the congenital causes responsible for such a monstrosity (Laughton *et al.*, 2005). The present case confirms *Schistosomus reflexus* as defined by specific features, i.e., ventral curvature of the vertebral column, and exposed viscera with ankylosis of the joints. The defective fetus with SR is not likely to be delivered, usually by mutational methods, so it is required to be delivered either by fetotomy or caesarean section. SR can be delivered by judicial obstetrical manoeuvres such as the application of traction with plenty of lubrication with liquid paraffin and/or sodium carboxymethylcellulose, etc. (Jana and Jana, 2013). The defective fetus with SR is not likely to be delivered, usually by mutational methods, so it is required to be delivered either by fetotomy or caesarean section.

As per the previous study, of the more than 6900 cases of bovine dystocia, 90 (1.3%) were due to *Schistosomus reflexus*, out of which 3912 (56.7%) were treated by fetotomy, 1766 (25.6%) by caesarean section, 227 (3.3%) by simple traction, and none of the cases were reported to have normal delivery (Knight, 1996). If *Schistosoma reflexus* fetus presents its extremities with ankylosis of joints, such monstrosities can be corrected either by an obstetrical mutation, a fetotomy, or a caesarean section. Partial fetotomy of the fetal parts is suggested (Singh *et al.*, 2018). In cases with large pelvis and pelvic area. When fetotomy is not possible, a caesarean operation is the only choice to deliver this kind of monster fetus. Thus, the present case describes the successful delivery of the SR monster in pluriparous non-descript cow by traction and mutation techniques.

## Conclusions

The present case reports the successful management of dystocia due to SR, in which one dead male monster fetus was delivered and the dam recovered successfully, resulting in a positive outcome.

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## Contribution by Authors

Each co-author contributes equally.

## Conflict of Interests

There is no conflict of interest.

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