

CONQUERING DYSTOCIA: PER-VAGINAL BIRTH OF SCHISTOSOMA REFLEXUS MONSTER FETUS IN MURRAH BUFFALO

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Abstract

Schistosoma reflexus is an uncommon congenital disorder found primarily in ruminants, stemming from the inheritance of an autosomal recessive gene with variable penetrance during embryonic development. This disorder is typified by an exaggerated ventral curvature of the spine, malformations in the pelvis, and contorted body and chest structures, leading to the exposure of thoracic and abdominal viscera. The consequential dystocia emerges due to the vulnerability of abdominal organs in cattle and buffaloes. To facilitate the birthing of fully developed Schistosoma reflexus monstrosities, procedures such as fetotomy or caesarean section are imperative, while smaller monstrosities are occasionally expelled per-vaginally without obstetrical intervention. The worldwide prevalence of this disorder within bovine dystocia ranges between 0.01% and 1.3%. Recent research indicates that the Schistosoma reflexus syndrome may be attributed to hereditary anomalies in ruminants, affecting the intermediate mesoderm during the initial stages of postgastrulation embryogenesis. This article presents a comprehensive account of a dystocic event in a pregnant Murrah buffalo due to a Schistosoma reflexus monstrosity. The successful management of this case involved the application of Thygeson's fetotome for fetotomy. The case study not only delves into the diagnosis and treatment modalities employed but also highlights notable anatomical observations. In view of the aforementioned case, it is evident that prompt recognition and suitable obstetrical intervention are crucial in effectively managing dystocia attributed to Schistosoma reflexus. With its intricate interplay between genetic predisposition and developmental anomalies, this disorder serves as an exemplar of the complex interactions influencing congenital disorders in livestock. This report emphasizes the necessity

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of expanding our understanding of rare congenital disorders like Schistosoma reflexus, fostering improved veterinary practices and intervention strategies for enhanced animal health and welfare.

INTRODUCTION:

Schistosoma reflexus is a rare congenital disorder primarily observed in ruminants, resulting from the transfer of an autosomal recessive gene having incomplete penetrance to developing embryos. The disorder is characterized by a marked ventral curvature of the spine, deformed pelvis, and bent body and chest walls with exposed thoracic and abdominal viscera. Schistosoma reflexus causes dystocia due to the exposure of the abdominal organs in cattle and buffaloes. Fetotomy or caesarean section is necessary for the delivery of fully grown Schistosoma reflexus monsters, while per-vaginal expulsion without any obstetrical assistance is observed in small-sized monsters. This disorder has an incidence rate of 0.01-1.3% out of the total bovine dystocia occurring worldwide. The occurrence of Schistosoma reflexus syndrome has been suggested to be a heritable defect in ruminants that involves the intermediate mesoderm as early as postgastrulation embryo development. In this report, we describe a case of dystocia in a pregnant Murrah buffalo due to Schistosoma reflexus monster fetus, which was managed successfully using Thygeson's fetotome for fetotomy. The diagnosis, treatment, and anatomical observations of the case are discussed in the report. This case highlights the importance of recognizing and managing dystocia caused by Schistosoma reflexus using appropriate obstetrical intervention.

Case history and clinical observations

A full term pregnant murrah buffalo in her second parity was presented in VCC Mathura with complaint that visceral organ were coming outside of vagina. According to the owner gestation period was complete and water bag ruptured in the midnight. After rupture of water bag, few organs came exterior to vagina. Then a paravet also examined the case and misdiagnosed as tearing of uterus. On gyneaco-clinical examination, some visceral organs were hanging outside of vagina. General condition of the animal seemed good. Per-vaginal examination revealed that cervix was completely dilated and visceral organs were exposed due to incomplete closure of ventral abdominal wall. There was acute angulation of vertebral column of fetus, therefore, all four limbs were near to head of the fetus. Therefore, the case was diagnosed as schistosoma reflexus monster.

Treatment and discussion

In this case of schistosoma reflexus monster, normal per-vaginal delivery was not possible, therefore, it was decided to go for fetotomy using Thygeson's fetotome. Fetotome was partially threaded. Wire loop was made around the mid vertebral column. Head of fetotome was fixed to side of vertebral column dorsally. Within 15-20 minute of effort, fetus was sectioned into two parts. So that, size of the fetus reduced and now it was possible to take out the separated fetal body. Uterus was checked for tearing but it was intact. No tearing was inside the uterus. Anatomical observations of the delivered monster fetus revealed acute angulation of the vertebral column; hence all the limbs and head were together. All four limbs were ankylosed, ventral abdominal wall was not completely closed with exposed viscera (Figure 1). After that, uterus was cleaned with normal saline solution and further intrauterine therapy was suggested. Animal was treated with antimicrobial, antihistaminic, analgesic and fluid therapy parentally for 5 days. Calcium magnesium Borogluconate 450 ml was also given intravenously. Schistosomus reflexus is heritable genetic defect and various studies have suggested that Schistosomus reflexus occurs mainly due to transfer of autosomal recessive gene having incomplete penetrance to developing embryo

(Laughton et al., 2005). Schistosomus reflexus causes dystocia due to defective formation of spinal cord and exposure of viscera in cattle and buffaloes. If Schistosoma reflexus presents by its extremities with ankylosis of joints than it creates excessive fetal diameter and prevent normal delivery (Noakes et al., 2009). Either caesarian section or fetotomy is warranted to relieve this kind of dystocia (Roberts, 2004). About 56.7% cases were treated by embryotomy, 25.6% by caesarean section, 3.3% by simple traction and none of the case reported with normal delivery (Knight, 1996). The defective fetus is not likely to be expelled usually by mutational methods, and must be removed from the uterus either by fetotomy or cesarean section. Partial fetotomy of the fetal parts is suggested (Singh et al., 2018) if the spinal curvature is acute and thus preventing passage of the fetus through the birth canal. In the present case also the fetus was delivered by sectioning the monster fetus into two parts with the help of Thygeson's fetotome.

References

- Kalita, D., Bhuyan, D., Mukit, A. and Islam, S. (2004). Dystocia due to Schistosomus reflexus in a goat. *Indian J. Anim. Reprod.*, **25** (1): 76-77.
- Knight, R.P. (1996). The occurrence of schistosomus reflexus in bovine dystocia. *Aust. Vet. J.*, **73**: 105–107.
- Laughton, K.W., Fisher, K.R.S., Halina, W.G. and Partlow, G.D. (2005). Schistosomusreflexus Syndrome: A heritable defect in ruminants. *Anat. Histol. Embryol.*, **34**: 312–318.
- Noakes, D.E., Parkinson, T.J and England, G.C.W. (2009). Dystocia due to faulty position and presentation, twins and fetal monster. In: *Veterinary Reproduction and Obstetrics*. 9 ed.Elsevier publisher; United States. pp. 304
- Roberts, S.J. (2004). *Veterinary Obstetrics and genital diseases*. 2 ed., Edwards Brothers, Michigan. Pp: 70.
- Singh, N., Singh R., Singh N. and Dhindsa, S. (2018). Schistosomus reflexus accompanied by left brachium Amelia and contracture of remaining limbs in a crossbred cattle calf. *J. of Entomo. and Zoo. Studies*, **6**(6): 1277-1279.
- Sloss, V.E and Johnston, D.E. (1967). The cause and treatment of dystocia in beef cattle in western Victoria. *Aust. Vet. J.*, **43**: 13–21.
- Suthar, D.N., Sharma, V.K., Dabas, V.S. and Bhoi, D.B. (2011). Per-vaginal handling of Schistosomus reflexus as a cause of dystocia in a Goat. *Veterinary World*, **4**(7): 330-331.