

Atypical Schistosoma Reflexus with Multiple Congenital Abnormalities in Haryana Cow

Brijesh Kumar¹, Dushyant Yadav^{2*}, Vandana³ and Atul Saxena⁴

¹Scientist, ICAR RC for NEH Region, Sikkim Centre, Gangtok, Sikkim-737 102

²PhD scholars, Indian Veterinary Research Institute, Bareilly-243122, India

³Veterinary officer Nanital Dist. U.K.

⁴Professor and Head, Department of ARGO, DUVASU Mathura, India

*Corresponding author: drdushyantyadav52@gmail.com

Abstract

The present manuscript reports an unusual case of schistosomus reflexus in a Haryana cow. The clinical findings include free floating viscera, mandibular prognathism, unilateral Amelia, mild hydrocephalus but lacking the typical ventral curvature of spine.

Keywords: Schistosomus reflexus, Amelia, Prognathism, hydrocephalous, Haryana cow

Schistosomus reflexus (SR) is a rare and fatal congenital disorder, primarily observed in ruminants (Laughton *et al.*, 2005). Schistosoma reflexus is characterized with congenital anomaly of fusion and involves the acute angulation of spinal column so that the head, limbs and tail are in close proximity (Knight, 1996). Furthermore, the anterior and lateral positioning of the pelvic bones, sacrum and hind limbs, fissure of the thoracic and abdominal walls, and limb ankylosis may be observed (Roberts, 1971). The viscera float free in the amnion.

The fetus creates a dystocia with the free-floating viscera, with the four limbs and the head all together, presenting in the cervical canal (Jana and Ghosh, 2001; Bishnoi *et al.*, 1987). Schistosomus reflexus may be presented viscerally or by its extremities (Roberts, 1971).

History and observation

A full term primipara cow of about 3 year age was attended at the State Livestock and Agricultural farm Babugarh, Ghaziabad (U.P.) with history of labor pain but it was futile to deliver fetus. Per-rectal examination of the animal revealed that cervix is not fully dilated. After giving cervical dilator drug Valathamate Bromide (48 mg, IM) along with natural Prostaglandin (25 mg, IM) and Dexamethasone (40 mg, IM). After reexamination it was revealed that birth canal was now open and fetal viscera were found to be floating free in the uterine body in anterior longitudinal presentation along with unilateral knee flexion.

Treatment and Discussion

The animal was restrained in left lateral recumbency, following epidural anesthesia (4ml, 2% lignocain HCL) and thorough lubrication of birth canal with liquid paraffin, thereafter correction of knee flexion and head deviation, traction was applied on fore limb and head, dead male fetus was delivered. The cow was treated with antibiotic and supportive therapy and recovered uneventfully.



Fig. 1: Calf with atypical schistosomus reflexus showing extreme evisceration, absence of left fore limb and without any curvature of spine

On close observation of fetus it was found to be a case of atypical schistosomus reflexus. The ventral thoraco-abdominal wall revealed a midline cleft, resulting

in exposure of both thoracic and abdominal viscera. The left fore limb was absent and rest limbs were ankylosed (Fig. 1). Diaphragm was found to be lacking. Fetal head revealed a mild hydrocephalus (Fig. 2) condition with a prominent mandibular prognathism (Fig. 2). However in the present case the typical ventral curvature of spine was lacking (Fig. 1).



Fig. 2: Mandibular Prognathism



Fig. 3: mild degree of Hydrocephalus

The exact cause of such teratological defects is still unclear but the preliminary analysis of associated cases suggests that schistosomus reflexus has a genetic aetiology (Laughton *et al.*, 2005). Murine gene mutations producing severe ventral body wall defects associated with anomalies of internal organs and other structures have been implicated in causing this condition (Licvet and Licvet, 2008). The lateral edges of the somatic disk in the developing embryo curve upwards instead of downwards, leading to this anomaly. The overall incidence of SR among all dystocias known to occur in cattle may be as low as 0.01% (Sloss and Johnston, 1967) to a maximum of 1.3% (Knight, 1996). The fetal calf lacking the typical ventral curvature of spine does not meet the criteria of being considered as a typical case of schistosomus reflexus (Singh *et al.*, 2010) as like in present case.

References

- Bishnoi, B.L., Gupta, A.K. and Kohli, I.S. 1987. A case report of Schistosomus reflexus in an Indian buffaloes. *Ind. Vet. Med. J.*, **11**(2): 119.
- Jana, D. and Ghosh, M. 2001. Dystokia due to fetal monster with schistosomus reflexus and ectopic viscera: A case report. *Ind. Vet. J.*, **78**: 333-334.
- Knight, R.P. 1996. The occurrence of schistosomus reflexus in bovine dystocia. *Aust. Vet. J.*, **73**: 105-107.
- Laughton, K.W., Fisher, K.R., Halina, W.G. and Partlow, G.D. 2005. Schistosomus reflexus syndrome: a heritable defect in ruminants. *Anat Histol Embryol.* **34**(5): 312 -318.
- Licvet, I.M. and Licvet, J.C. 2008. Schistosoma reflexus in a cat: insights into aetiopathogenesis. *Journal of Feline Medicine & Surgery* **10**(4): 376-379.

- Roberts, S.J. 1971. *Veterinary Obstetrics and Genital Diseases*. 2nd Ed. CBS Publishers, New Delhi, India, pp. 36-68.
- Singh, J., Ahmad, R., Zama, M.M.S., Pawde, A. M. and Deori, S. 2010. Delivery of a *Schistosomus reflexus* crossbred calf by caesarean section. *Indian J. Vet. Surg.*, **31**(1): 77.
- 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.