



ISSN: 2456-2912

VET 2024; 9(2): 947-948

© 2024 VET

[www.veterinarypaper.com](http://www.veterinarypaper.com)

Received: 25-12-2023

Accepted: 29-01-2024

**Dr. A Sucharitha**

Assistant Director, Eluru,  
Animal Disease Diagnostic  
Laboratory, Eluru, Andhra  
Pradesh, India

**Dr. NVN Vijaya Sri**

Veterinary Assistant Surgeon,  
Eluru, Animal Disease  
Diagnostic Laboratory, Eluru,  
Andhra Pradesh, India

**Dr. G Deepika Kumari**

Associate Professor, College of  
Veterinary Science, Garividi,  
Andhra Pradesh, India

**Corresponding Author:**

**Dr. A Sucharitha**

Assistant Director, Eluru,  
Animal Disease Diagnostic  
Laboratory, Eluru, Andhra  
Pradesh, India

## A case report of *Schistosoma indicum* in a buffalo and its therapeutic management

**Dr. A Sucharitha, Dr. NVN Vijaya Sri and Dr. G Deepika Kumari**

**DOI:** <https://doi.org/10.22271/veterinary.2024.v9.i2m.1334>

### Abstract

Visceral Schistosomiasis in buffaloes is characterised with frequent diarrhoea having loose watery to mucoid consistency and marked dehydration with severe spasms. A she buffalo aged 4 years was presented to the area hospital of Nuzvid in Eluru District with a problem of severe mucoid diarrhoea from 3 days. On microscopic examination of the dung sample, an oval shaped egg with the larval miracidium was observed. The animal was treated with praziquantel @ dose rate of 10 mg/kg body weight orally at three days interval for 2-3 occasions. The supportive therapy was comprised of injectable ciprofloxacin, fluids, haematinics, antispasmodics, ascorbic acid and multivitamin preparations. The animal recovered on administration of Praziquantel along with supportive therapy and the treatment was successful for visceral schistosomiasis in cattle.

**Keywords:** *Schistosoma indicum*, diarrhoea, buffalo, praziquantel

### Introduction

*Schistosoma indicum*, a blood fluke generally lives in the mesentery of the host causing intestinal or visceral schistosomiasis, feeds on the host blood and requires suitable water snails for its completion of life cycle. *Schistosoma indicum* produces eggs with a characteristic terminal spine which aids in shedding of blood from the intestinal mucosa which is seen in the dung often. Long term infections of *Schistosomiasis* can lead to chronic infections in cattle leading to production losses (Agarwal and Southgate, 2000) [1]. Affected animals exhibit pathological and clinical signs caused by the spine present in terminal position. Mucoid to watery diarrhoea with or without clots of blood, dehydration, emasciation, pale mucus membranes, weight loss and decreased production (Bont, 1995) [3]. Many thousands of eggs are released from the affected animals via faeces and released into the fresh water. Later, the eggs develop into a miracidium and enter a suitable intermediate host (Soulsby 1982) [8]. The frequency of occurrence of intestinal schistosomiasis depends on the availability of intermediate hosts water snails and availability of the water source. Reports of schistosomiasis caused by other species was reported but visceral schistosomiasis caused by *Schistosoma indicum* is very meagre in adults. Earlier a case was reported in calf by (Giri *et al.*, 2018) [4]. In the present study, a case report of *Schistosoma indicum* infection was taken up in a buffalo and its successive treatment was also observed.

### Materials and Methods

A clinical case of a she buffalo was brought to the hospital with a history of watery to mucoid diarrhoea with bloody shreds of epithelial tissue. The animal appears to be dehydrated, anorectic with tenesmus and spasms at the hind region of the animal. The vital parameters were normal, blood and dung samples were collected and sent to laboratory examination for reading the biochemical parameters using standard methods.

### Dung examination

A tiny quantity of the dung sample, usually a pin head size was placed on the clean glass slide and 3 to 4 drops of water was added.

The dung sample was emulsified with a stick and evenly spread all over the slide as a thin film for clear examination of the dung sample and observed under 10x objective. This is an easy and useful method when the egg infestation is large. On microscopic examination of dung sample, an oval shaped thin shelled, non operculate egg with a terminal spine and growing larval miracidium was observed and confirmed as *Schistosoma indicum* based on the morphology (Soulsby 1982)<sup>[8]</sup> (Fig 1). The heamatology reports revealed anaemic condition due to the haemorrhages caused by the terminal spine of the eggs. The buffalo was treated with the deworming drug Praziquantel @ 10 mg/kg body weight orally, at three days interval for two occasions. the buffalo was also given supportive therapy with injectibles like ciprofloxacin, salines, haematinics, antispasmodics and multivitamin preparations.



**Fig 1:** *Schistosoma indicum* egg

## Discussion

Schistosomiasis is a snail-borne infection caused by trematodes to man, domestic animals and also wild animals in different regions of Asia and Africa. The commonly occurring species in India are *S. nasale* and *S. spindale* in cattle, *S. indicum* in equines and sheep and *S. incognitum* in pigs (Latchumikanthan *et al.*, 2014)<sup>[6]</sup>, and *S. indicum* in calf (Giri *et al.*, 2018)<sup>[4]</sup>. Intestinal schistosomiasis infection is less common when compared with other schistosomiasis infections. It is seen in the white and black cattle of Asian continent and its bordered countries. Clinical schistosomiasis detection is easier than the identification of subclinical schistosomiasis due to the identification of the disease by clinical symptoms.

The most common problem in animal husbandry sector is parasitic infestation and is most neglected one. Regular deworming practise would be of good measure to reduce the worm burden. Th incidence of schistosomal eggs in bovines is very less and identification of the eggs is very characteristic due to their unique shapes and sizes. In the voided dung samples, the eggs possess a fully grown miracidium (Soulsby, 1982)<sup>[8]</sup> which is quite useful in confirming the infections.

*S. indicum* is a blood fluke that survives in the mesenteric capillaries of various species of livestock like horses camels, cattles, buffaloes, sheep and goats in the Indian sub-continent. The eggs are defecated along with the dung and have a

terminal spine and measures 59-139 [micro]m x 17-74[micro]m. The presence of spine, involves in the mechanical trauma of the mesenteric veins (phlebitis), intestinal mucosa and submucosa as well as lamina propria leading to acute intestinal syndrome (visceral schistosomosis). It is observed by inflammation and haemorrhage of the mucosal layers, exudation, infiltration of granulocytes and agranulocytes and may form granulomatous lesions in chronic conditions (Bhatia *et al.*, 2010; Islam *et al.*, 2011)<sup>[2, 5]</sup>. Sharma and Dwivedi (1976)<sup>[7]</sup> also reported pulmonary schistosomiasis in sheep and goat due to *S. indicum*.

## Conclusion

In the present study, it could be concluded that *S. indicum* infestation could be diagnosed by simple dung examination and its treatment was successful with Praziquantel and supportive therapy.

## Conflict of Interest

Authors have no conflict of interest in this study.

## Author's Contributions

AS and NVNVS were involved in the design of the research. Collection of sample and processing was carried out by AS and NVNVS. The laboratory tests and interpretation of the tests were carried out by AS and NVNVS. AS and NVNVS and GDK drafted and revised the manuscript. All authors read and approved the final manuscript.

## Acknowledgements

The authors are thankful to the Director, Animal Husbandry Department, Andhra Pradesh, Joint Director (AH), VBRI, Vijayawada and District Animal Husbandry Officer, Eluru district for providing necessary facilities and infrastructure to carry out the work

## References

1. Agarwal MC, Southgate VR. *Schistosoma spindale* and bovine schistosomosis. *J Vet. Parasitol.* 2000;14:95-107.
2. Bhatia BB, Pathak KML, Juyal PD. *Textbook of Veterinary Parasitology*. 3rd Edn., Kalyani Publishers, New Delhi; c2010, p. 84-92.
3. Bont JD. Cattle schistosomiasis host parasitic interaction. PhD. Thesis, University of Gent. 1995, 23.
4. Giri DK, Kashyap DK, Ramteke RC. Diagnosis and Management of *Schistosoma indicum* Infestation in a Calf. *Intas Polivet.* 2018;19(2):334-335.
5. Islam MN, Begum N, Alam MZ, Mamun MAA. Epidemiology of intestinal schistosomiasis in ruminants of Bangladesh. *J Bangladesh Agril. Univ.* 2011;9:221-28.
6. Latchumikanthan A, Pothiappan P, Ilayabharathi D, Das SS, Kumar D, Ilangoan C. Occurrence of *Schistosomanasale* infection in bullocks of Puducherry. *J Parasit. Dis.* 2014;38:238-40.
7. Sharma DN, Dwivedi JN. Pulmonary schistosomiasis in sheep and goats due to *Schistosoma indicum* in India. *J Compar. Pathol.* 1976;86:449-54.
8. Soulsby EJJ. *Helminths, Arthropods and Protozoa of Domesticated Animals*. 7th Edn., Bialliere Tindall, London; c1982.