

Case Report

**NASAL SCHISTOSOMIASIS IN CATTLE- A CLINICAL CASE
REPORT**

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Abstract: Snoring disease, caused by the blood fluke, *Schistosoma nasale* which is snail borne trematode infection of cattle. It causes nasal granulomas in cattle and subclinical infection in buffalos. The present case deals with eggs of *S.nasale* in the nasal washings of affected animal and subsequent treatment and their uneventful recovery. Eggs of the particular *S.nasale* is identified as per the standard taxonomical keys.

Keywords: Crossbred Cow, *Schistosoma nasale*, Snoring, Orathanadu.

Introduction

Schistosomiasis is a snail-borne trematode infection of domestic animals and man in different parts of Asia and Africa. De Bont and Vercruyssen [1] stated that about 530 million heads of cattle live in areas endemic for cattle schistosomiasis in Africa and Asia while at least 165 million cattle are infected with schistosomes. Whereas Anantaraman [2] reported that the presence of cercaria of *S.nasale* in the water sources having the zoonotic importance in man likely to produce dermatitis. The freshwater snail *Indoplanorbis exustus* acts as intermediate host [3]. This disease is generally chronic in nature and symptoms in majority of animals are insufficient to distinguish the illness from other debilitating infections [4]. It is widely distributed in cattle, buffalo, sheep and goat in India [5].

Snoring disease was reported from Tamil Nadu, Karnataka, Andhra Pradesh, West Bengal, Assam, Bihar, Orissa and Maharashtra [6,7]. Affected cattle shows rhinitis, profuse mucopurulent nasal discharge which is clinically manifested by sneezing, dyspnoea and snoring. Chronic infections show proliferation of nasal epithelium as granuloma and small abscesses containing eggs. In the present study tentative diagnosis was made on the basis of snoring respiratory sounds and the presence of nodular lesions in nasal cavity and adjunct areas.

Materials and methods

A 7 year old female cross bred cattle was presented to Large Animal Medicine Outpatient unit, Teaching Veterinary Clinical Complex, Orathanadu, Thanjavur district of Tamil Nadu with a case history of sneezing and bilateral nasal muco-purulent discharge. Faecal sample of cattle were collected in a clean polythene bags container and direct smear and sedimentation techniques were employed for faecal analysis. Examination of nasal mucosa showed cauliflower- like granuloma like growth, causing partial obstruction of the nasal cavity and producing snoring sounds while breathing (Fig.1). Nasal swab/scrapings and washings of nasal mucosa were collected in normal saline solution and tested.



Fig.1: Nasal granuloma of affected cattle

The samples were examined as per Sumanth *et al.* [8] with slight modifications. The nasal washings/nasal scrapings were taken in a test tube and 5 ml of 10 % potassium hydroxide was added. The contents were boiled for 3–5 min over flame for lysis of mucus. It was cooled and centrifuged at 2000 rpm for 3 min. After centrifugation, supernatant was discarded and the sediment was examined under low power of microscope.

Results and discussion

The microscopic examination of nasal washings/scrapings after 10 % potassium hydroxide processing revealed boomerang shaped/palanquin shaped egg with terminal spine and fully developed miracidium inside (Fig.2). Eggs measured 340 μ m length and 60 μ m width. The eggs belong to *S. nasale* as per the standard taxonomical keys given by Soulsby [9]. The presence of boomerang shaped eggs in nasal scrapings of cattle was also reported by Banerjee and Agrawal [10], Sumanth *et al.* [8] in Karnataka, Ravindran and Kumar [11] in Kerala.



Fig 2: Boomerang shaped egg of *S. nasale* in high power field

Physical examination of animals revealed sneezing, bilateral thick mucus nasal discharge, congestion of nasal mucosa. The above findings were in conformation with Soulsby [9] who observed snoring in animals. And ne also stated that detection of subclinical schistosomiasis in live animals is difficult.

Treatment started with Inj Anthiomaline (Lithium Antimony Thiomalate) @ 15 ml intramuscularly. The cow responded after first dose of Anthiomaline and there was reduction in the size of nasal granuloma. The Inj Anthiomaline @ 15 ml intramuscular was repeated after weekly interval. Further reduction in the size of nasal granuloma was recorded and snoring sound was also reduced to slight sound that was audible, animal was breathing normally. Then the third injection of Anthiomaline was given after one week, reports complete recovery.

Anthiomaline was the drug of choice for nasal schistosomiasis as per the statement given by Vaidyanathan [12]. Antimony attached itself to sulphur atoms in trypanothione reductase (the putative enzyme targeted by antimonial compounds) which was used by the parasites. High incidence of schistosomiasis was seen in older animals as reported by Sumanth et al (2004). Bedarkar *et al.* [13] also observed that the prevalence of *Schistosoma* species was high during monsoon and lowest in summer season amongst ruminants.

Control

Transmission of infection occurs by percutaneous penetration of cercaria of *S. nasale* from the infected *Indoplanorbis sp.* snails. The animals should be avoided from grazing near water bodies where infected snails are noticed [9]. Control of snails, avoiding animal grazing near snail infected areas and periodical deworming in bullocks and treatment at the early stage of infection will help in control of schistosomiasis in ruminants.

Conflict of interest

There is no conflict of interest.

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