

**NASAL SCHISTOSOMIOSIS IN CATTLE: A CASE STUDY**  
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**Abstract:** Present study describes clinical and haematological findings of nasal schistosomiosis in Gir and crossbred cattle in southern Rajasthan. It is caused by a blood fluke *Schistosoma nasalis*. Clinically, disease was characterised by presence of nodular lesions mostly attached to the lateral wall of the nasal cavity. Haematological examination revealed anaemia and decreased PCV. Confirmatory diagnosis was based upon presence of boomerang shaped eggs of *S. nasalis* in the nasal swab. Affected animals were treated successfully by 3 doses of inj. anthiomaline (Lithium Antimony Thiomalate) at weekly interval along with supportive therapy.

**Keywords:** Nasal schistosomiosis, boomerang shaped eggs, anaemia, anthiomaline.

**Introduction**

Three known clinical types of chronic nasal obstruction in cattle, two have been identified etiologically and are reported to have clinical or epidemiological features that distinguish them from enzootic nasal granuloma. One of them appears to be caused by a fungus, most commonly *Rhinosporidium* spp., or *Drechslera* spp. Another is caused by the parasite *Schistosoma nasalis* [5]. *S.nasalis* is a blood fluke, causing nasal granuloma in domestic animals and man in different part of Asia and Africa [10]. *S. nasalis* inhabits blood vessels of nasal mucosa and causes granulomas and snoring disease in cattle. The granulomas arise due to a chronic inflammatory process associated with chronic irritation due to infection [8]. The freshwater snail *Indoplanorbis exustus* acts as intermediate host [4].

In India, nasal schistosomiosis is widely distributed in cattle, buffalo, sheep and goat [1]. Cattle aged between 6 months to 4 years are most commonly affected by chronic nasal schistosomiosis which may or may not be preceded by an attack of acute rhinitis [5]. The nasal growths causing partial or complete unilateral obstruction of the nasal passage show clinical signs like nasal discharge, inspiratory dyspnoea and stertor. There may be frequent sneezing, the animal may show restlessness and may rub its nostrils against the ground. In bilateral obstruction, the animal exhibits mouth breathing [8]. Chronic infection shows

proliferation of nasal epithelium as granuloma and small abscess containing eggs. Anantaraman [2] reported presence of cercaria of *S. nasalis* in the water sources having the zoonotic importance in man likely to produce dermatitis.

### Case History and Observations

One 4 years old, non-pregnant, lactating Gir cattle and another 5 years old pregnant (approximately 4 months), lactating HF cross cattle were bought to the teaching hospital of



veterinary college, Navania, Udaipur, Rajasthan in India with the history of restlessness, chronic profuse mucopurulent nasal discharge, difficulty in breathing with snoring sound, bilateral bleeding from nostrils and open mouth breathing. In both animals, nasal discharge and respiratory distress were seen about 3 to 4 months back and when the animals were presented in teaching hospital, respiratory embarrassment was severe. Feed and water intake was reduced in both animals.

Clinical examination revealed presence of nodular lesions mostly attached to the lateral wall of the nasal cavity. On the basis of history and clinical examination cases were tentatively diagnosed for nasal schistosomiasis.

**Table- Haematological parameters of affected animals**

S.No.	Haematological parameters	Values in Gir cattle	Values in HF cross cattle
1.	HCT (%)	21.1	15.9
2.	Hb (gm/dl)	7.1	5.6
3.	MCHC(gm/dl)	34.6	35.2
4.	WBC( $\times 10^9/L$ )	5.7	8.9
5.	Granulocytes( $\times 10^9/L$ )	3.9	4.6
6.	L/M( $\times 10^9/L$ )	4.7	4.3
7.	Platelets( $\times 10^9/L$ )	449	185

Haematological examination revealed decrease haemoglobin and haematocrit value whereas MCHC was found non-significantly high in both animals. Rest of the haematological

parameters were found within normal range. Investigation of nasal swab and washing of nasal mucosa revealed presence of boomerang shaped eggs of *S. nasalis*. On the basis of history, clinical signs and laboratory examination, disease was confirmatory diagnosed as nasal schistosomiasis.

### **Treatment**

Both animals were treated with 3 doses of inj. Anthiomaline (Lithium Antimony Thiomalate) @ 20 ml i.m. at weekly interval. Supportive therapy was included inj. meloxicam @ 0.5 mg/kg b.wt. i.m. for 3 days, inj. vitamin B1, B6, B12 @ 10 ml i.m. for 3 days and inj. ferritas @ 10 ml i.m. for 3 days. To check the bleeding topical application of solution clotase (haemocoagulase) @ 1 ml in each nostril was applied.

### **Discussion**

In present study the main clinical sign recorded were restlessness, profuse mucopurulent nasal discharge, dyspnoea, snoring respiratory noise, bilateral epistaxis, open mouth breathing reduce feed intake and presence of nodules on lateral wall of nasal cavity.

Haematological investigation revealed anaemia and decreased PCV in nasal schistosomiasis. Soulsby [7] reported similar findings in nasal schistosomiasis.

Presence of boomerang shaped eggs in nasal scrapping of cattle is in agreement with that of Rvindran and Kumar [6].

Animals showed signs of recovery after first application of anthiomaline. Nasal bleeding and size of nasal granuloma was started to reduce. Further reduction in the size of nasal granuloma was recorded on second application of anthiomaline. It was easy to respirate for animals and snoring sound was also reduced to slight sound. Complete recovery was shown by both animals after third application of anthiomaline that was given by regular interval of one week. Vaidyanathan [9] reported anthiomaline as a drug of choice for nasal schistosomiasis.

To control the disease, proper disposal of faeces is a must. Faeces should never be disposed in source of drinking water. The control measures also include elimination of snails, acting as intermediate hosts in ponds and water by using chemical or biological methods. Introduction of fish in water collections helps in the reduction of snail population [3].

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