

DIAGNOSIS AND THERAPEUTIC MANAGEMENT OF AMPHISTOMIASIS IN SHEEP: A FIELD SURVEY STUDY

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Abstract: Amphistomiasis is an economically important parasitic disease affecting small ruminants in tropical and subtropical regions. A field survey was conducted to determine the prevalence and therapeutic management of amphistome infection in sheep maintained under semi-intensive grazing systems. A total of 120 sheep from 12 smallholder farms were examined for clinical signs and parasitological infection. Fresh fecal samples were collected and examined using the sedimentation technique for detection of amphistome eggs. Out of 120 animals examined, 34 sheep (28.33%) were found positive for amphistome infection. The infected animals showed clinical signs such as diarrhoea, anorexia, weakness, rough hair coat, and poor body condition. Positive animals were treated with Oxytoclozanide (15 mg/kg body weight orally) along with supportive therapy. Following treatment, significant clinical improvement and reduction in diarrhoea were observed within 5–7 days. The study highlights the importance of regular fecal screening, strategic deworming, and improved pasture management in controlling amphistomiasis in sheep. Control of snail intermediate hosts and avoidance of grazing in waterlogged areas are essential preventive strategies to reduce infection in small ruminant production systems.

Keywords: Amphistomiasis, Sheep, Prevalence, Sedimentation technique, Trematodes, Parasitic infection.

Introduction

Amphistomiasis is an important parasitic disease of ruminants caused by trematodes belonging to the family *Paramphistomatidae*. The disease is widely distributed in tropical and subtropical regions where climatic and environmental conditions favour the development of intermediate snail hosts. Sheep grazing in marshy and waterlogged pastures are particularly susceptible to infection through ingestion of infective metacercariae attached to vegetation. Infection with immature flukes can cause severe enteritis, diarrhoea, dehydration, weight loss, and reduced productivity in affected animals. Due to its economic impact on small ruminant farming, early diagnosis and effective therapeutic management are essential. Therefore, the present study was conducted to assess the occurrence and treatment response of amphistomiasis in sheep under field conditions.

Materials and Methods

Study Area

The survey was conducted in villages surrounding Karur district of Tamil Nadu where sheep are commonly maintained under semi-intensive grazing systems. The area is characterized by irrigated agricultural fields and seasonal water stagnation, which favors the survival of intermediate snail hosts responsible for transmission of amphistome parasites.

Animal Selection

A total of 120 sheep belonging to smallholder farmers from 12 flocks were included in the study. Animals were maintained under semi-intensive grazing conditions where sheep were allowed to graze on natural pastures and crop residues during the daytime and housed during the night.

The animals selected for examination included different age groups and both sexes. Animals showing symptoms such as diarrhoea, weakness, poor growth, and reduced feed intake were given special attention during clinical examination.

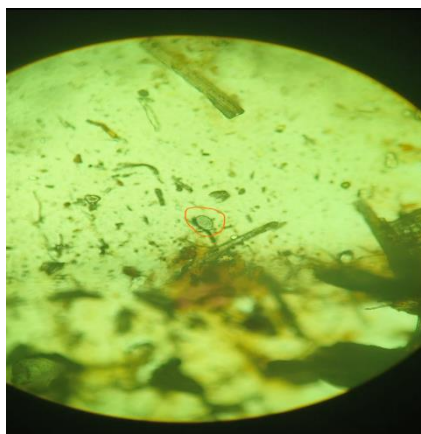
Clinical Examination

All animals were examined for general health status and presence of clinical signs suggestive of gastrointestinal parasitic infections, including behaviour and alertness, appetite, consistency of faeces, hair coat condition, body condition score, hydration status, and vital parameters such as temperature, pulse, and respiration. Sheep showing signs like diarrhoea, weakness, and poor body condition were suspected of having an amphistome infection.

Sample Collection and Laboratory Examination

Fresh fecal samples were collected directly from the rectum of all 120 animals using sterile disposable gloves and placed in labelled containers. Samples were transported to the laboratory for parasitological examination. The sedimentation technique was used for detection of trematode eggs. Approximately 3–5 g of fecal sample was mixed with water and filtered through gauze into a conical flask. The suspension was allowed to sediment and the supernatant was discarded. The sediment obtained was examined under a light microscope.

Presence of large, oval, operculated eggs confirmed amphistome infection.



Prevalence of Amphistome Infection

Table 1. Prevalence of amphistomiasis in sheep examined

Total animals examined	Positive animals	Prevalence (%)
120	34	28.33

The results revealed that 34 out of 120 sheep were infected with amphistome parasites, indicating a prevalence of 28.33%.

Clinical Signs Observed in Infected Animals

Table 2. Clinical signs observed in infected sheep (n=34)

Clinical sign	Number of animals	Percentage (%)
Diarrhoea	30	88.23
Reduced appetite	26	76.47
Weakness	24	70.58
Rough hair coat	22	64.70
Poor body condition	20	58.82

Diarrhoea was the most common clinical sign observed in infected animals.

Treatment and Management

All infected animals were treated with oxclozanide at **15 mg/kg** body weight orally (**Suspension FASMIN**). Supportive management included oral rehydration therapy (**E Lite powder**), provision of nutritious feed, mineral supplementation (**Small Ruminant Mineral Mixture**), and access to clean drinking water. Farmers were advised to avoid grazing sheep in marshy or waterlogged pastures where snail intermediate hosts are abundant. Clinical

improvement was observed within 5–7 days after treatment, and faecal consistency gradually returned to normal.

Discussion

Amphistomiasis is widely distributed in tropical and subtropical regions where environmental conditions favour the survival and multiplication of intermediate snail hosts. Grazing ruminants acquire infection through ingestion of infective metacercariae attached to vegetation in marshy and waterlogged pasturelands. Such environmental conditions commonly occur in irrigated agricultural areas and flood-prone grazing fields, which facilitate the transmission of amphistome parasites among grazing animals. Similar epidemiological patterns have been reported in several studies conducted in different parts of the world where the prevalence of amphistome infection was closely associated with climatic factors, snail population density, and grazing management practices (Sharma *et al.*, 2023; Nyagura *et al.*, 2024).

In the present survey, amphistome infection was detected in a considerable proportion of sheep examined. Comparable prevalence levels have been reported in small ruminants from different regions, indicating that amphistomiasis remains a significant parasitic problem in grazing production systems. Studies conducted in India and other tropical countries have reported variable prevalence rates depending on management practices, seasonal conditions, and grazing patterns (Das *et al.*, 2022; Kalaivanan *et al.*, 2024). The occurrence of amphistome infection in grazing animals is strongly influenced by the presence of aquatic or semi-aquatic snail intermediate hosts that thrive in moist environments (Araya *et al.*, 2025).

The clinical signs observed in infected animals in the present study, including diarrhoea, anorexia, weakness, rough hair coat, and poor body condition, are consistent with earlier reports describing amphistomiasis in small ruminants. These clinical manifestations are mainly associated with the migration of immature flukes through the intestinal mucosa, resulting in inflammation, tissue damage, and fluid loss. Severe infections may lead to enteritis, dehydration, and reduced productivity in affected animals. Similar clinical findings have been reported in sheep and goats infected with amphistomes in various epidemiological studies (Shyma *et al.*, 2020; Singh *et al.*, 2020; Sharma *et al.*, 2023).

Fecal examination using the sedimentation technique proved to be an effective diagnostic method for detecting amphistome eggs in the present study. Trematode eggs are relatively heavy and therefore tend to settle at the bottom during sedimentation rather than floating in conventional flotation solutions used for nematode eggs. Several authors have emphasized

the usefulness of sedimentation techniques for accurate detection of trematode infections in ruminants (Iqbal, 2023; Nyagura *et al.*, 2024).

Treatment of infected animals with oxclozanide resulted in gradual improvement of clinical signs and recovery of appetite in the present study. Anthelmintics effective against trematodes remain an important component of amphistomiasis control programs (Gadahi *et al.*, 2009). However, sustainable parasite control should involve an integrated approach that combines strategic deworming, improved grazing management, and environmental interventions aimed at reducing snail populations (Phiri *et al.*, 2024; Sharma *et al.*, 2023).

Environmental management practices such as drainage of stagnant water, rotational grazing, and avoidance of marshy pastures can significantly reduce the risk of infection in grazing ruminants. In addition, regular monitoring through fecal examination and timely treatment of infected animals are essential for minimizing production losses associated with amphistome infections. Implementation of integrated parasite management strategies is therefore crucial for improving the health and productivity of small ruminant production systems (Jeyathilakan 2015; Kumar *et al.*, 2021).

Conclusion

The present field survey revealed a 28.33% prevalence of amphistome infection in sheep, indicating that amphistomiasis remains a significant parasitic disease affecting small ruminants under semi-intensive grazing systems. Diagnosis through fecal sedimentation technique proved effective for detection of amphistome eggs. Treatment with Oxclozanide along with supportive management resulted in successful recovery of infected animals. Regular parasitological monitoring, strategic deworming, improved pasture management, and control of snail intermediate hosts are essential to reduce the incidence of amphistomiasis in sheep farming systems.

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