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A CASE OF *MONIEZIA BENEDINI* INFECTION AND ITS THERAPEUTIC MANAGEMENT IN AN ADULT BUFFALO

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Abstract: The present study reports the occurrence of infection of *Moniezia benedini* in a buffalo and its successful therapeutic management. An eight year old buffalo were presented to International Institute of Veterinary Education and Research (IIVER) Rohtak, Haryana, with the history of unthriftiness, weight loss, chronic diarrhoea along with presence of long segments of adult worms in the faeces. The microscopical examination revealed two sets of reproductive organs in each segment along with single row of interproglottidal glands restricted to the middle of the segment, thus confirming the diagnosis of *Moniezia benedini* infection. The buffalo were successfully treated with Sulphadimidine injection @150 mg / kg body weight intravenously, Oxyclozanide boli @10mg/Kg body weight orally, Levamisole boli @ 7.5mg/Kg body weight orally and supportive therapy with vitamin B- complex solutions as well as iron tonics. The buffalo showed uneventful recovery with complete elimination of mature worms in the faeces on day 7 post treatment.

Keywords: Diarrohea, Interproglottidal glands, Levamisole, Moniezia, Oxyclozanide, Sulphadimidine.

Introduction

Bubalus bubalis (buffalo) is one of the most important livestock species in terms of dairy, meat, manure and drought power source to a common Indian and plays an important role in agrarian economy of India [1]. India is bestowed with huge number of small and marginal farmers which are absolutely dependent on buffaloes than cattle for their livelihood as they also serve as an insurance against the risk of crop failure due to natural calamities [2]. Gastro intestinal parasites which include various helminthes including trematodes, cestodes, nematodes and other protozoan parasites affect the health and productivity in terms of decreasing economic returns [3, 4] like reduced milk yield in cattle and buffaloes due to

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parasite infestation which also leads to mal absorption of essential minerals like calcium and vitamins for the lactogenesis process. The common cestodal species (*Moniezia benedeni*) which infests the small intestine of ruminants, such as cattle, sheep and goats is distributed worldwide and is more prevalent among grazing animals, but rarely found among confined animals [5]. Generally it is considered that *Moniezia benedeni* shows low pathogenicity because the host does not show specific or serious symptoms. However, recognizable loss of growth has been reported in infected calves [6]. Therefore, control of worm infestation is beneficial, even though pathogenicity is low. Buffalo diseases are considered as one of the major constraints for the industrial development in the developing countries causing substantial economic loss to poor and marginal farmers [7]. The incidence of Gastro-intestinal parasites in cattle and buffaloes in India has been reported by Sanyalet al., 1992; Muraleedharan, 2005; Ashutosh Wadhwa et al., 2011 [8, 9, 10].

Material and Methods

Case history

An eight year old buffalo were presented to International Institute of Veterinary Education and Research (IIVER) Rohtak, Haryana, with the history of unthriftiness, weight loss, chronic diarrhoea along with presence of long intact segments of adult worms in the faeces, confirming the diagnosis of *Moniezia benedini* infection. The faecal sample containing the gross adult segments of the tapeworm were sent to laboratory for gross and microscopic examination for differentiation from other species of *Moneizia* and other common cestodes affecting gastro intestinal tract of the large ruminants.

Fig 1. Faecal sample of an adult buffalo showing mature segments of an adult *Moniezia benedini* tapeworm

Result and discussion

Laboratory examination and microscopic observation of the gross specimens (Fig. 1) confirmed the diagnosis of *Moneizia* infection and species differentiation from *Moniezia expansa*, which is a common small ruminant cestode affecting their gastrointestinal tract. Based on certain morphological characteristics of the adult tapeworm which included body length, maximum width, and size of suckers, scolex, presence of two sets of reproductive organs per mature segment (Fig. 2), and presence of band of interproglottidal glands (Fig. 2) which were limited to a particular region unlike *Moniezia expansa* which contains diffused multiple rows of interproglottidal glands. As it was concluded to be a case of *Moniezia* infection, the buffalo were successfully treated with Sulphadimidine injection @ 150 mg / kg body weight intravenously, Oxyclozanide boli @10mg/Kg body weight orally, Levamisole boli @ 7.5mg/Kg body weight

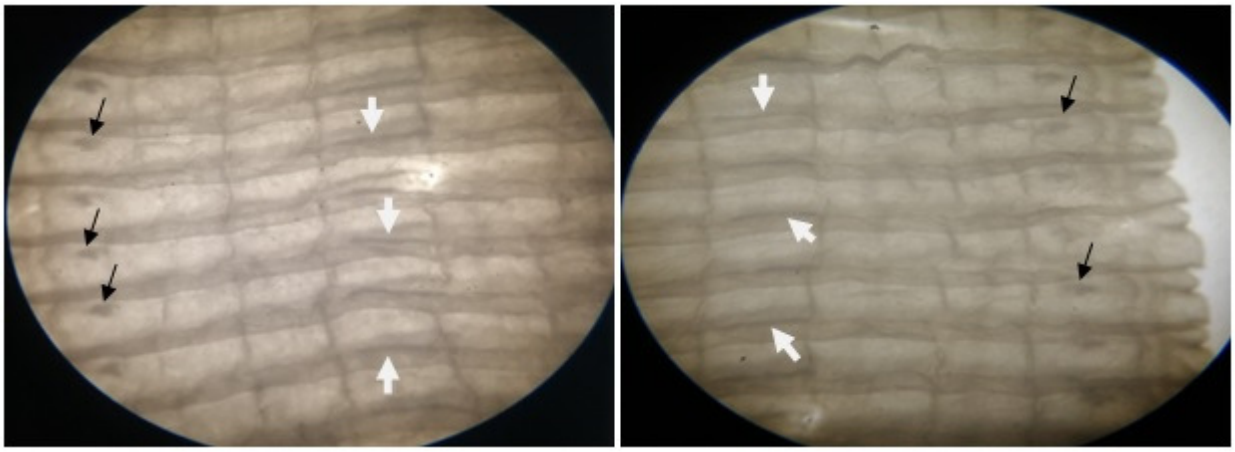

Fig 2. Adult *Moniezia benedini* gross specimens showing two sets of reproductive organs (One in each figure) (Black arrow) along with a single row of interproglotidal glands restricted to the middle of the mature adult worm (White arrow)

orally and supportive therapy with vitamin B- complex solutions as well as iron supplements for 7 days for increasing haemoglobin level. The buffalo showed uneventful recovery with complete elimination of mature worms in the faeces on day 7 post treatment along with absence of any parasite eggs on microscopic examination.

Praziquantel-levamisole combination has been found to be more effective than albendazol. Severe gastrointestinal parasitic infection may cause huge economic loss by reducing weight gains up to 40 per cent [11] or by manifestation of clinical disease possibly resulting in death of the animal [12].

Conclusion

The present case was diagnosed as a case of *Moniezia benedini* infection, which is the common species affecting cattle and buffalo unlike *Moniezia expansa,* which affects usually sheep and goat. Diagnosis was based on the presence of gross adult mature worms in the faeces, which was further confirmed by microscopical examination of the gross specimen. The animal showed uneventful recovery after treatment with combination of sulphadimidine, oxyclozanide and levamisole.

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