MANAGEMENT OF RECURRENT TYMPANY DUE TO *GASTROTHYLAX CRUMENIFER* INFECTION IN BUFFALOES

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ABSTRACT

Three buffaloes were presented to the hospital with the history of suspended rumination, reduction in feed and water intake, persistent bloat for three to six days. Clinical examination revealed distension of the left paralumbar fossa, watery foetid dung, absence of rumination and tympanic sounds on left para lumbar fossa. Haematology revealed reduced haemoglobin and packed cell volume. Microscopic examination of the dung revealed presence of the amphistomes ova. The rumen fluid extraction pump was passed into the rumen to collect the rumen fluid and while taking out intensity of tympany was reduced and different stages of amphistomes were attached to the end portion of stomach tube. Based on the morphological study of the stained processed parasites, the amphistomes was identified as *Gastrothylax crumenifer*. Buffaloes were successfully treated with oxyclozanide along with fluid therapy. Uneventful recovery was noticed by the third day of therapy and no recurrence of bloat was recorded for the eight months of post treatment observatory period.

Keywords: *Bubalus bubalis*, buffalo, Amphistomes, oxyclozanide, bloat, *Gastrothylax crumenifer*

INTRODUCTION

Paramphistomosis is one of the common diseases where more vectors are there for the disease transmission. It is caused by the digenean trematode belongs to the family Paramphistomatidae. *Gastrothylax crumenifer* is an elongated circular paramphistome found in the rumen of sheep, cattle and buffalo (Eslami *et al*., 2011). The adult worms inhabiting the rumen, have low pathogenicity while the migrating immature stages cause severe pathological disturbances including hemorrhagic inflammation of the alimentary tract, edema and anemia (Rajesh *et al*., 2017). Literature was available on the prevalence; clinical importance of the paramphistomosis in livestock in India (Sivajothi and Reddy, 2014). But, very limited literature available on the parasitic induced tympany in bovines. Hence, the present communication is a report on successful management of recurrent tympany due to *Gastrothylax crumenifer* in buffaloes.

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MATERIALS AND METHODS

Three adult buffaloes from a same house were brought to the Department of Veterinary Clinical Complex hospital with the history of suspended rumination, reduction in feed and water intake, persistent bloat for six days. All buffaloes had the history of recurrent bloat and passing of watery dung from the last two months and buffaloes were routinely fed with paddy straw along with mineral mixture. Clinical examination revealed distension of the left paralumbar fossa, watery foetid dung and tympanic sounds on left para lumbar fossa on percussion. Whole blood with the addition of EDTA for complete blood count, serum, dung, urine and rumen fluid was collected for laboratory analysis. Dung was processed by the direct smear examination and by sedimentation techniques. To rule out the choke and for collection of rumen fluid, the rumen fluid extraction pump was passed into the rumen (Reddy *et al*., 2014). Rumen fluid extraction pump was introduced into the esophagus and resistance was noticed at the cardia and reduction in the distension of the left paralumbar fossa was noticed. After completion of rumen fluid collection, distal part of stomach tube contains the reddish pink fleshy amphistomes along with the impacted cud material. Rumen fluid showed pH of 7 and few small protozoa. Haematological findings were within the normal range and biochemical parameters revealed reduced total protein and albumin levels. Microscopic examination of the dung revealed the ova of amphistomes (Figure 1). Based on the clinical examination and laboratory findings condition of the buffaloes was diagnosed as amphistomosis in association with the secondary bloat. Buffaloes were administered with three doses of oxyclozanide (18.7 mg/kg body weight) orally at 48 h interval along with the fluid therapy and probiotic supplementation.

RESULTS AND DISCUSSION

Spontaneous reduction of the bloat was noticed immediately after insertion of stomach tube and gradually it was disappeared by the third day of the therapy and no recurrence of bloat was recorded for the eight months of observatory period. The collected parasites along with the stomach tube were in pear shaped, reddish pink in colour and fleshy. The collected parasites were washed thoroughly in phosphate buffered saline and identified by morphology as per standard procedures. Flukes were washed properly and pressed gently in between two microscopic slides for identification of the species. Permanent parasitic specimen of microscopic slides were prepared using carmine stain and used for detailed morphological studies. In the carmine staining worms showed an anteriorly opening ventral pouch extending the whole ventral surface, a posterior terminal sucker, intestinal caeca that extends up to the level of lobed horizontal testes and also showed the crossing of uterus from right to left. Thus it was confirmed as *Gastrothylax crumenifer* (Figure 2) (Saifullah *et al*., 2016).

Usually mature amphistomes were present in the reticulo-rumen and immature amphistomes were present in the duodenum of cattle (Soulsby, 2012). A high number of immature worms in the duodenum may affect production and during the pathogenesis, immature flukes which were present in the duodenum, migrate through the abomasum and reaches the predilection site in the rumen and reticulum. During the process of rumen fermentation, huge volume of gas will be produced and evacuated by the process of

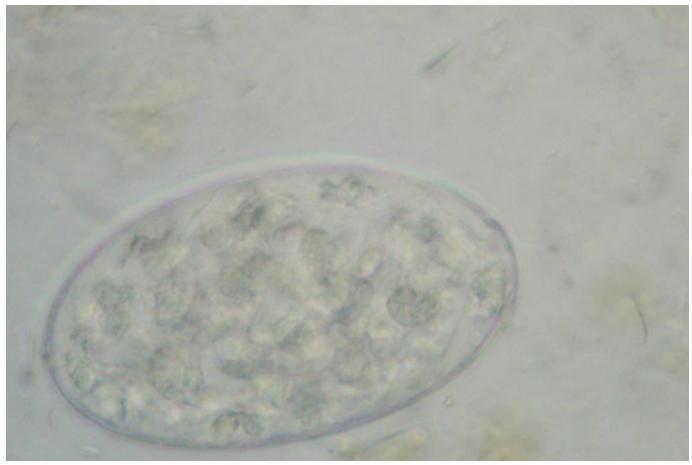

Figure 1. Microscopic examination of the parasitic ova (400X).

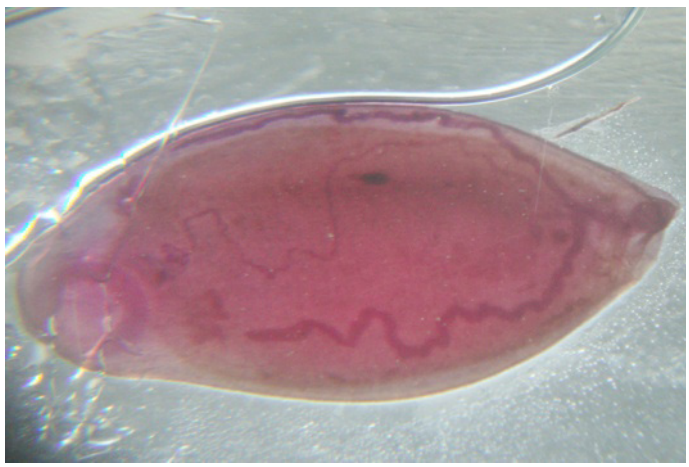

Figure 2. Microscopic examination of the mature *Gastrothylax crumenifer* (x4).

eructation or belching normally in cows. In the present study there is chronic accumulation of the mature and different stages of amphistomes which causes blocking of the cardia region and further may also they prevented the eructation process and the sequel is the development of the secondary bloat (Constable *et al*., 2017). In the present study rumen fluid examination revealed the presence of impacted cud with semisolid rumen fluid without any frothiness and the occlusion of amphistomes around the cardia which is the cause of bloat as reported in the present case.

In the present geographical region, prevalence of the amphistomes was recorded in different species of animals (Sivajothi and Reddy, 2018). In the present study, all the buffaloes were belongs to the same owner and they were regularly deworming the buffaloes with fenbendazole without dung sample examination. In conclusion, it is recommended that cases with recurrent or persistent bloat can be routinely screened for the amphistomes which may also causes secondary bloat in buffaloes.

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