



Clinico-Therapeutic Management of Amphistomiasis in Cattle

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ABSTRACT

A pluriparous cow aged three calving was brought to the hospital with the history of persistent bloat for four days, restlessness, anorexia and excessive abdominal straining for the previous 24 hours. Clinical parameters of cattle (temperature, pulse, and heart and respiration rate) were revealed within the normal range except reduced ruminal motility and tympanic sounds upon percussion of the left para lumbar fossa. Evaluation of ruminal fluid, this case was diagnosed as amphistomiasis induced secondary bloat. After five days of treatment the animal recovered successfully.

Keywords: Amphistomes, Bloat, Ruminants

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INTRODUCTION

India has the largest livestock population in the world, which contributes substantially to the national economy, but these ruminants are impressed by multifarious parasites such as nematodes, trematodes and cestodes. Among several trematodes affecting ruminants, amphistomes has recently emerged as an important cause of productivity loss [1]. It has a wide geographical distribution in subtropical and tropical areas, where the infection leads to economic losses related to mortality and low productivity [2]. In ruminants, paramphistomiasis has been found to be associated with diarrhoea, loss of body condition, rough hair coat, dullness, weakness, loss of appetite, intestinal haemorrhages, anaemia and intermandibular swelling [3&4].

MATERIALS AND METHODS

This study was conducted in the Department of Veterinary Medicine, Teaching Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu. Faecal sample of cattle were collected in a clean plastic container and direct smear and sedimentation techniques were employed for faecal analysis. With the aid of the suction semi-automatic pump ruminal fluid was collected. The ruminal tube with metallic head having 3mm diameter perforations is lubricated and introduced through the mouth wedge into the rumen. After clinical examination blood sample was collected from jugular vein of animal in a new sterile syringe with the help of 16 gauge needles pre treatment and immediately transferred into the K3EDTA (ethylene-diamine tetra-acetate) vacutainer for the estimation of various hematological parameters and to plain vacutainer for serum biochemical parameters. Haematological parameters viz. Haemoglobin (Hb) Packed Cell Volume (PCV), Total Erythrocyte Count (TEC), Total Leukocyte count (TLC) and Differential Leukocyte Count (DLC) were analyzed. Biochemical parameters viz. Blood Urea Nitrogen (BUN), Creatinine, Total Protein (TP), Albumin and Globulin were analyzed by using standard kits.

CASE HISTORY AND OBSERVATIONS

A pluriparous cross bred cattle aged three calving was brought to the Teaching Veterinary Clinical Complex hospital with the history of persistent bloat (Fig.1) for four days, restlessness, anorexia and excessive abdominal straining for the previous 24 hours. It by Ruminal liquor showed a pH 7.2 and very few small protozoa, Hb - 10.4 g%, PCV 33%, RBC- 5.73×10^6 cells/cmm, WBC 4.1×10^3 cells/cmm, TP- 7.2 g/dl, albumin 3.14g/dl. Blood smear did not reveal the presence of blood parasite. Dung sample showed ova of amphistomes (+++). While performing the collection, free end of the ruminal tube is obstructed

with semi digested fibres and adult amphistomes (Fig.2). Evaluation of ruminal fluid, this case was diagnosed as amphistomiasis induced secondary bloat.

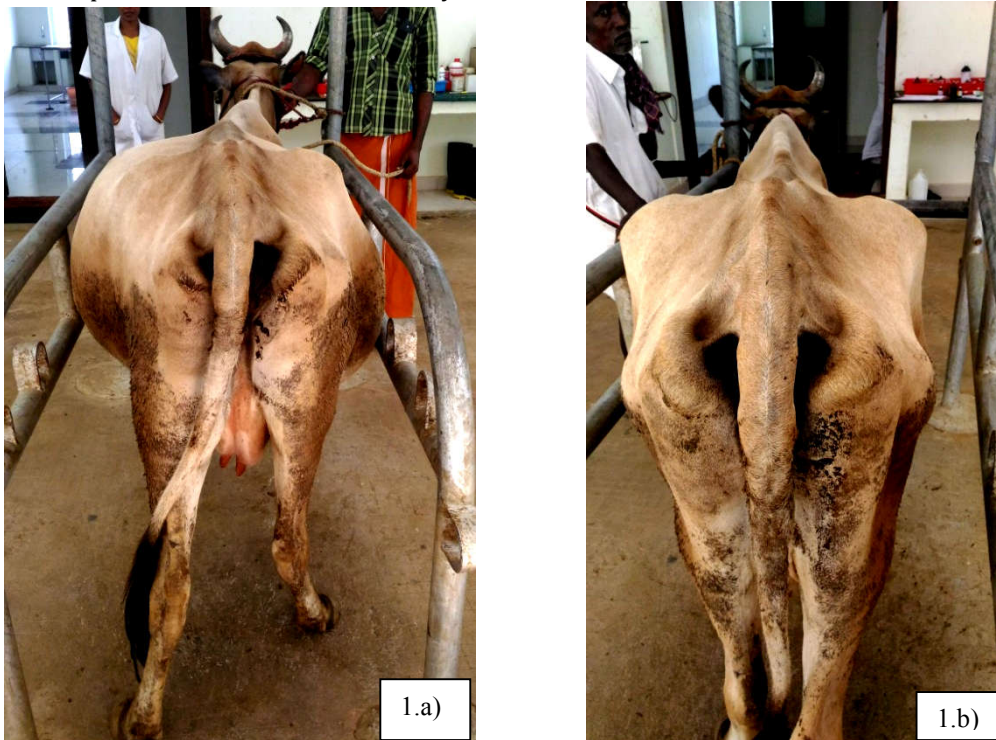
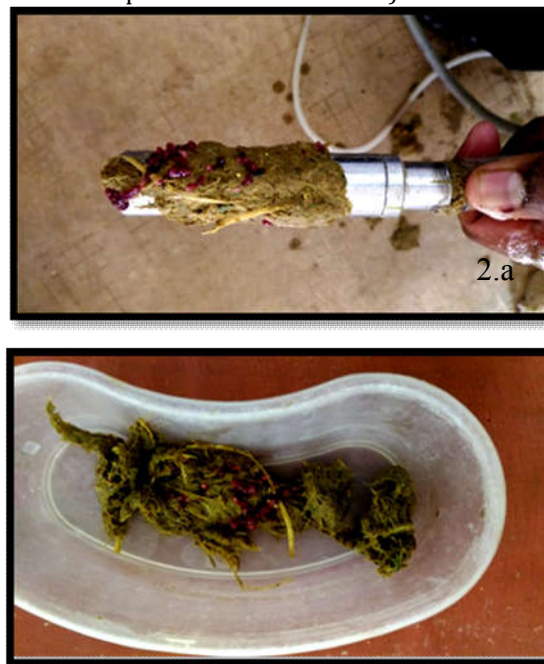


Fig.1.a) Pre-treatment- distension of para lumbar fossa 1. b) Post- treatment – uneventfully recovered



2.b

Figure.2: Adult Amphistomes

TREATMENT AND DISCUSSION

Rumen fluid extraction pump was introduced and a little resistance to the passage of the tube at the level of cardia was felt. A large quantity of gas was released and when the tube was removed a large number of flesh coloured amphistomes of different stages (Figure 2) were found sticking on the suction strainer. Initially the case was treated with suspension Zanil (oxyclozanide) at the dose rate of 18.7 mg/kg orally and the same dose was repeated after two days [5]. After two hours the distension of rumen was reduced. Ruminant animals produce large volumes of gas during the normal process of digestion. This gas either is

belched up or passes through the gastrointestinal tract. But, there are some situations where these gases cannot escape. Consequently, the gases build up in the rumen and the rumen wall becomes distended [6]. The adult parasites are pear shaped, pink or red, up to 15mm long, and attached to the lining of the rumen [7]. A high number of immature worms in the duodenum may affect production, since these parasites causing a lower feed conversion, a loss of weight and/or a decrease in milk production, are responsible for economic losses, morbidity and mortality [8]. The lower values of TEC might be due to the loss of blood from severe hemorrhage and ulceration in ruminal mucosa and intestinal tissue due to migration of young immature flukes via the intestine to their predilection site rumen or extensive migration of the young fluke through the hepatic parenchyma and from blood sucking activity of adult fluke [9].

Eruclation or belching normally occurs about once in every minute and requires about 10 seconds to be completed. The volume of gas produced by rumen fermentation increases after feeding and it peaks in two to four hours. To accommodate increased rate of gas production, belching occurs more often, up to three or four times per minute. Normally, the process is efficient in expelling large volumes of gas from the rumen. Inserting a stomach tube with the aid of a speculum allows the animal to expel large quantities of gas, thus easing rumen distension. In addition, any esophageal obstruction can be detected when the stomach tube is passed into the animal. Absence of froth in rumen fluid confirmed that it was a case of free gas bloat [6]. Immature flukes migrate proximally along the duodenum and through the abomasums to reach their predilection site in the rumen and reticulum. The period required for maturation varies from six weeks to four months [10]. Occlusion of amphistomes around the cardia caused bloat as reported in the present case.

CONCLUSION

In order to control of paramphistomosis in this area of Delta region of Tamilnadu, the type of intermediate hosts involved in the prevalence of fluke infections should clearly be established in the future.

REFERENCES

1. Anuracpreeda, P., Wanichanon, C. and Sobhon, P (2008). *Paramphistomum cervi* antigenic profile adults as recognized by infected cattle sera. *Exp. Parasitol*, 118: 203-207.
2. Kilani, K., Guillot, J. and Chermett, R. (2003). Amphistomes digestive. In: Lefevre, PC; Blanco, J; Chermatt, J (Eds.), *Principales maladies infectieuses et parasitaires du betail*. (1st Edn.), Paris. *Tec. and Doc.* pp: 1400-1410.
3. Chandrasekharan, K., Radhakrishnan, K. and Jacob, V.C. (1982). Efficacy of Distodin in the treatment of amphistomiasis in Indian elephants. *Kerala Journal of Veterinary Science* 13: 55-58.
4. Blood, D.C., Radostits, O.M. and Henderson, J.A. (1983). *Veterinary Medicine*. 6th edn., ELBS, Bailliere and Tindall, UK. pp. 906-907.
5. Bagheri, H. (1962). A Study on the species of paramphistomumes of cattle in slaughterhouse of Tehran. DVM Dissertation. Faculty of Veterinary Medicine, University of Tehran., PP: 1-45.
6. Cheng, K.J., McAllister, T.A., Popp, J.D., Hristov, A. Mirand, Z. and Shin, H.T. (1998). A review of bloat in feedlot cattle. *J. Anim. Sci.*, 76: 299- 308.
7. Eslam, i A, Halajian, A, Bokaie, S (2011). A survey on the bovine amphistomiasis in Mazandaran province, North of Iran. *Iran J Vet Res.*, 12(34):52-55.
8. Rolfe, P.F., Boray, J.C., Nichols, P., Collins, G.H. (1991). Epidemiology of paramphistomosis in cattle. *Int. J. Parasitol.*, 21: 813-819.
9. Arfaa, F (1962). A study on *Paramphistomum microbothriumin* in Khuzestan south West Iran. *Ann. Parasitol. Hum. Comp.*, 37: 549-555.
10. Radostitis, O.M., C.C. Gay, D.C. Blood and K. Hinchcliff. (2000). *Veterinary Medicine*, 9thed. WB Saunders, Harcourt Publishers Ltd., London.

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