

Case Study

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Successful Therapeutic Management of Ascites in a Crossbred Jersey Cow due to Amphistomiasis

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ABSTRACT

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A four and half year old Jersey crossbred cow was presented with emaciated body condition, foul smelling persistent watery diarrhoea, submandibular edema, moderate dehydration, rough hair coat and pale conjunctival mucous membrane. The fecal sample examination showed large, clear, dense, operculated eggs of *Amphistome spp.* Haematological examination revealed decreased haemoglobin, packed cell volume and total erythrocytic count. Serum biochemistry revealed low level of total protein and albumin. Abdominocentesis revealed diffused free flow of peritoneal fluid due to hypoproteinemia. The cow was treated with two doses of Oxyclozanide @ 18.7 mg per kg Bwt orally at two days interval and intravenous administration of amino acids @ 1ml per kg B.wt with supportive treatment. Uneventful recovery was observed two weeks after therapy.

Introduction

Amphistomosis, a trematode infection of ruminants, is caused by digena flukes belonging to several genera including: *Paramphistomum*, *Calicophoron*, *Cotylophoron*, *Explanatum*, *Gigantocotyle* and *Carmyerius*. Unfortunately, amphistomiasis has recently emerged as an important cause of productivity losses including decrease in milk and meat production, low nutrient conversion, weight loss and reduction in fertility (Mogdy *et al.*, 2009 and Soulsby, 1982). The adult parasites are pear-shaped, pink or red, up to 15 mm

long, and attach to the lining of the rumen. Immature forms are found in the duodenum and are 1–3 mm long (Ballweber, 2014).

Ruminant amphistomosis is an infection of cattle, buffalo, sheep, goats and other wild ruminants caused by a severe infection with immature amphistomes in the small intestines of immunologically incompetent hosts and considered as a copacetic obstacle in health and production performance of animals throughout the globe (Horak, 2009). Paramphistomes are cosmopolitan but disease is more common in warmer regions, particularly Australia, Africa and India

(Constable *et al.*, 2017). The disease is widely prevalent in India and causes economic loss to the tune of several thousand crores annually (Khan *et al.*, 2008). Death due to Paramphistomes is very high and may be as high as 80-90% in domesticated ruminants (Juyal *et al.*, 2003). Among several trematodes affecting ruminants, amphistomes has recently emerged as an important cause of productivity loss (Anuracpreeda, 2007).

Materials and Methods

Case History and Clinical observation

A four and half year old Jersey crossbred cow was presented to the Veterinary Clinical Complex, Veterinary College and Research Institute, Salem with history of complete anorexia, emaciation and persistent watery diarrhoea since eight days. The owner treated the animal locally, however the attempts were futile. Detailed clinical examination revealed emaciated body condition (Fig.1) foul smelling watery diarrhea (Fig.2), bottle jaw swelling (Fig.3 and 4), moderate dehydration, rough hair coat, pale conjunctival mucous membrane, normal body temperature and tachycardia. Rumens fluid examination revealed normal microfloral activity. Both cranial and caudal adominocentecis revealed clear colourless free flow peritoneal fluid. Faecal sample was examined to rule out parasite infection. Blood sample was subjected for Hemoglobin (Hb), total erythrocyte count (TEC), packed cell volume (PCV) by Automatic analyzer and serum sample was subjected to total protein and albumin with semi automatic biochemical analyzer.

Results and Discussion

The faecal sample was examined by sedimentation technique for the presence of fluke eggs as method described by Adejoju *et*

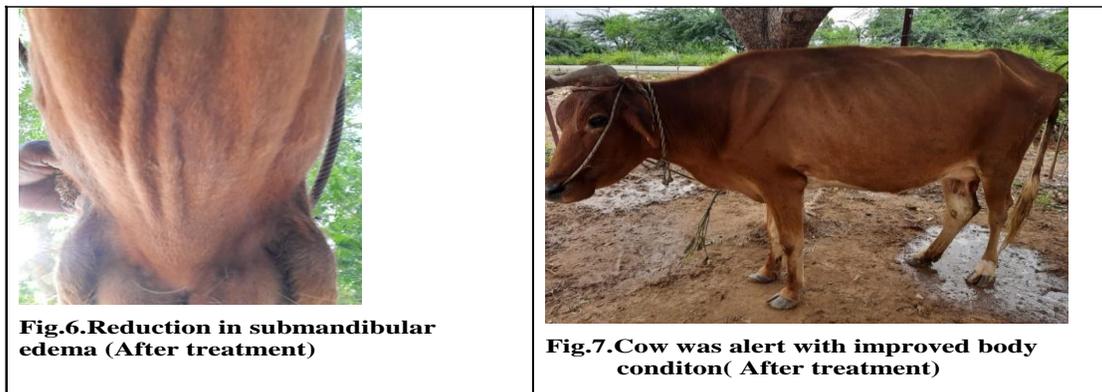
al., (2008) and Amphistomum eggs were identified based on morphology (Soulsby, 1982). The fecal examination showed large, clear, dense, operculated eggs of *Amphistome spp* (Fig.5). Haematological examination revealed decrease Hemoglobin (6.8 gm%), Packed Cell Volume (22%) and Total Erythrocytic Count ($4.2 \times 10^6/\mu\text{l}$). Serum biochemistry revealed low total protein level (4.8 gm/dl). The albumin and globulin level were 1.6 gm/dl and 3.2gm /dl respectively.. The peritoneal fluid analysis revealed absence of cells and the protein level of 1.8gm/dl. The ascites could be due to hypoproteinemia. On the basis of typical clinical signs and confirmatory laboratory examination of fecal sample, the case was diagnosed as Amphistomiasis.

The Cow was treated with two doses of Oxyclozanide @ 18.7 mg/kg BW orally two days apart (Constable *et al.*, 2017). Supportive therapy included administration of amino acid infusion intravenously (Inj. Astymin 1ml/kg Bwt iv), fluid therapy (Ringer Lactate) and hematinic preparations consecutively for five days. The cow responded well to the two doses of Oxyclozanide.

The amino acid infusion was continued for two weeks as weekly twice injection. After two weeks of the treatment the consistency of dung was normal and there was decreased in the submandibular edema (Fig.6), improvement in feed and water intake and alertness (Fig.7). The complete restoration of the feed intake and other physiological parameters were observed normal after two weeks. Severe enteritis, persistent fetid diarrhea, weakness depression, dehydration and anorexia, sub mandibular edema and pallor mucosae (Constable *et al.*, 2017) similar clinical findings were observed in this present case.



Fig.5 Elongated large, clear, operculated eggs of *Amphistome spp.* (40x)



Chauhan *et al.*, (2015) noted severe neutrophilia, eosinophilia, and anaemia in Amphistomosis affected buffaloes and also

stated that anemia of high intensity along with hepatic damage can lead to the death of the animal in severe cases. Adult flukes do not

cause overt disease, and large numbers may be encountered. The immature flukes attach to the duodenal and, at times, the ileal mucosa by means of a large posterior sucker and cause severe enteritis, possibly necrosis, and hemorrhage. Affected animals exhibit anorexia, polydipsia, unthriftiness, and severe diarrhoea. Extensive mortality may occur, especially in young cattle and sheep. Older animals can develop resistance to reinfection but may continue to harbour numerous adult flukes (Ballweber, 2014).

In conclusion a Jersey cow severely infected with amphistomiasis was successfully treated with two doses of oxcylozanide and the ascites was managed with administration of intravenous infusion of amino acids. A case of diffused ascites due to amphistomiasis was recorded.

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