Amphistomosis is an important parasitic disease of sheep and goats and causes considerable economic loss to the livestock industry in India (Hafeez and Rao, 1981). Paramphistomosis is the infection of ruminants by the Trematodes belonging to the superfamily *Paramphistomatidae*, according to the system of Yamaguti (1971). The present paper reports an outbreak of amphistomosis in an organized sheep farm.

It was reported that out of 40 Madras Red cross bred sheep in a farm, 15 animals (37.5%) died with the history of subcutaneous oedema and ascites. Death occurred within one or two days of observation of clinical signs. The animals were dewormed with Zanil (Oxyclozanide-Virbac) at the rate of 10 mg/kg bw orally four days before when the first mortality was observed. Mortality continued to occur after four days of deworming. Then, Vetalben-R (Albendazole IP. 2.5% w/v; Rafoxanide IP. 2.27% w/v) was administered at the rate of 15 mg/kg bw orally, as double dose. No mortality was observed after following treatment with Vetalben-R drug. Combination of Rafoxanide and albendazole was effective against amphistomosis than single zanil treatment.

Necropsy findings reported were hydropericardium, ascites, distended gall bladder and congested liver, lungs and abomasums. The duodenum revealed the presence of reddish immature flukes and the mucosa was congested and mildly thickened. Live reddish mature flukes were seen in the rumen and mucosa was congested. Slight enlargement of spleen was also observed. Pieces of intestine, lung, spleen and mesenteric lymph nodes collected in 10 per cent neutral buffered formalin were sent to the Department of Veterinary Pathology for histopathological examination. The tissue samples were processed by routine paraffin embedding and 4 to 6 mm thick sections were stained with haematoxylin and eosin by employing standard procedures. Faecal examination revealed the presence of ova of *Amphistome* sp. (*Fischoederius elongatus* and *Fischoederius cobboldi*) eggs.

Microscopic examination revealed the presence of cut section of flukes on the surface of duodenum or attached to the submucosa of duodenum (Fig.3). Flukes were often found in sections either free in the lumen or attached by the acetabulum to the villi (Fig.1&2) or embedded in the mucosa to the level of the muscularis mucosae. Villi were often absent leaving only a covering cuboidal epithelium. The remaining villi were short and flattened and epithelium disrupted. The lumen contained aggregations of desquamated epithelium. Mucosal layer revealed focal increased goblet cell activity with mononuclear cell infiltration, predominantly lymphocytes and a few plasma cells, and eosinophils. Flukes were also penetrated into the duodenal submucosal layer. Many of the...
Fig. 1 & 2. Amphistomosis- Sheep- Cut section of flukes- Attachment of acetabulum to the villi of the intestine.
Scale bar H&E 20 mm

Fig. 3. Amphistomosis- Sheep- Cut section of flukes on the submucaosa of intestine surrounded by mononuclear cells and few eosinophils.
Scale bar H&E 20 mm
intestinal crypts were elongated and extended directly on to the surface of the mucosa. The submucosa was thickened and contained many fibroblasts and large macrophages. Focal necrosis of epithelial cells was observed. Bacterial colonies seen in the mucosal layer were predominantly bacilli. Congested and haemorrhagic lungs with the presence of capillary thrombi, splenic haemosiderosis and lymphoid cell depletion in the mesenteric lymph nodes were observed. Based on the above findings, the case was diagnosed as immature amphistomosis.

In the present case, we have observed flukes in the rumen but it has not produced any gross changes in the rumen except congestion which is in agreement with Rolfe et al. (1994) who reported that mature flukes in the rumen did not usually elicit any significant response but in massive infections papillae were short and red, becoming fused into aggregations with ruminal contents adhering firmly to the surface. In the present study, hydropericardium and ascites were observed which are in agreement with previous report (Radostits et al., 2007). Microscopic changes observed in the intestine are in agreement with the previous report on immature amphistomosis (Rolfe et al., 1994). The sheep might have picked up the infection by grazing areas contaminated with metacercariae (Boray, 1969). Initially, the infection was chronic but due to sudden exposure to grass blades residing in water bodies containing large number of metacercariae which were consumed by sheep leads to produce acute infection.

REFERENCES


