Outbreak of immature paramphistomosis in Nellore Jodipi sheep

C. Pavan Kumar · N. Syaama Sundar ·
V. Devi Prasad

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Abstract An outbreak of immature paramphistomosis in Nellore Jodipi sheep was recorded in Nellore district of Andhra Pradesh in 158 sheep during the months of April–June-2012. The condition is diagnosed as immature paramphistomosis on the basis of symptoms, dung sample examination and necropsy findings. The infected sheep exhibited symptoms like persistent foetid, blackish diarrhoea, sub maxillary edema, dehydration and death. Necropsy findings include hemorrhagic thickening and necrosis of proximal duodenal mucosa, ascites, gelatinization of subcutaneous and renal fat. Duodenal scrapings revealed large number of immature paramphistomes under low power microscopy. Recovery of ailing sheep was observed after oral treatment of niclosamide @ of 100 mg/kg bwt along with supportive therapy.

Keywords Immature paramphistomosis · Nellore Jodipi sheep · Niclosamide

Introduction

Amphistomosis is an important parasitic condition of small ruminants and causes considerable economical implication to shepherd (Md and Rao 1981). The present paper reports on prevalence of immature paramphistomosis in Nellore Jodipi sheep. This condition seriously affects sheep flocks in heavy infection, due to intestinal migration of immature flukes leading ill health and death. The disease is characterized by severe persistent, foetid and blackish diarrhoea

(Radostits et al. 2010). Heavy infestation may prove highly fatal in sheep and may occur as outbreaks.

Case history and observations

There was an episode of sheep mortality characterized by sub mandibular oedema (Fig. 1), blackish foetid faeces in the months of April–June-2012 in Nellore district of Andhra Pradesh. A total of 158 sheep were observed with the above clinical signs, out of which 48 sheep were died. The prominent clinical signs recorded were anorexia, bottle jaw, blackish, foetid diarrhoea and death after 8–10 days. Sheep were treated earlier with flukicides like oxclozanide, rafoxanide and Closantel along with antibiotics no favourable outcome observed. Faecal examinations were negative for parasitic ova. Post mortem examination revealed large number of brown to pinkish immature amphistomes in the proximal portion of duodenal mucosa.

Necropsy findings

A large amount of straw coloured fluid was found in the abdominal cavity in most of the cases. Proximal portion of duodenal mucosa was severely congested with thickening. Gelatinization of subcutaneous and renal fat (Fig. 2) was observed. Proximal portion of duodenum revealed small flesh coloured live immature flukes. In some cases a few immature flukes were also found in abomasum. Examination of duodenal scrapings revealed numerous motile immature amphistomes (Fig. 3) with oral and ventral suckers. In some of the cases immature amphistomes were also found in deeper tissues of the duodenal mucosa. These observations were in agreement with the findings of

C. Pavan Kumar (✉) · N. Syaama Sundar · V. Devi Prasad
Department of Veterinary Medicine, College of Veterinary
Science, Proddatur 516360, Andhra Pradesh, India
e-mail: pavancvet@gmail.com

Fig. 1 Bottle jaw

Fig. 2 Gelatinization of renal fat

previous reports (Radostits et al. 2010; Balachandran et al. 2010).

Treatment and discussion

Paramphistomosis is the condition of sheep and goat caused by the trematodes belonging to the family paramphistomatidae as per the system of Yamaguti (1971). Outbreaks of immature paramphistomosis often pass undiagnosed (Phiri et al. 2007). In the present study an incidence of paramphistomosis was recorded in the Nellore Jodipi sheep based on history and post mortem examination. After confirmatory diagnosis ailing sheep were treated with niclosamide @ 100 mg/kg bw (Boray 1969) along with antidiarrhoeal (phthalyl sulphathiazole, pectin and electrolytes), haematinics and liver extracts as supportive

Fig. 3 Immature Paramphistomes (10X)

therapy. Severely ailing sheep with dehydration were treated with DNS. There was no further mortality and ailing animals recovered with subsiding clinical signs.

The high incidence of immature amphistomosis in the month of April–June could be due to grazing of sheep in stagnated water bodies surrounding the pastures (formed due to north-east monsoon). Nellore and parts of Rayalaseema of Andhra Pradesh receive rainfall due to north-east monsoon in the months of September–November though other parts of the state in the months of June itself. This enables the formation of more stagnated water bodies conducive for the preponderance of snail population, which in turns predisposes the release of number of cercariae into the water and nearby forage. Contrary to the present findings, Kumar and Kumar (2013) recorded high incidence in the months of November which can be attributed to south west monsoons. Ingestion of large number of metacercaria in sheep, settled at duodenum causing severe haemorrhagic areas and thickening of duodenal mucosa, besides causing bottle jaw and ascites. Ascites might be due to hypoproteinaemia caused by immature flukes (Radostits et al. 2010; Balachandran et al. 2010).

Summary

An outbreak of immature paramphistomosis was reported in Nellore Jodipi sheep showing mortality in Nellore district and was successfully controlled by the oral niclosamide and supportive therapy including haematinics and liver extract injections. On the basis of the current study it is recommended to undertake prophylactic deworming with flukicide effective on immature stages like niclosamide in pre summer months in endemic areas to control immature paramphistomosis.

References

- Balachandran C, Raman A, Pazhanivel N (2010) An outbreak of amphistomosis in an organized sheep farm. *Tamilnadu J Vet Anim Sci* 6:286–288
- Boray JC (1969) The anthelmintic efficiency of niclosamide and menichlopholan in the treatment of intestinal paramphistomosis in sheep. *Aust Vet J* 45:133–134
- Kumar A, Kumar A (2013) Amphistomosis in bovines and its management. *Indian Vet J* 90:94–95
- Md Hafeez, Rao BV (1981) Studies on amphistomosis in Andhra Pradesh (India) VI. Immunization of lambs and kids with gamma irradiated metacercariae of cercaria indicae XXVI. *J Helminthol* 58:29–32
- Phiri AM, Chota A, Phiri IK (2007) Seasonal pattern of bovine amphistomosis in traditionally reared cattle in the Kafue and Zambezi catchment areas of Zambia. *Trop Anim Health Prod* 39:97–102
- Radostits OM, Gay CC, Hinchcliff KW, Constable PD (2010) *Veterinary medicine. A textbook of the diseases of cattle, horses, sheep, pigs and goats*. Saunders Elsevier, USA, pp 1580–1581
- Yamaguti S (1971) *Synopsis of Digenetic trematodes of vertebrates*. Vol. I and Vol. II. Kenigaku, Tokyo