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Abstract

A male buck aged 16 months was presented to the Referral Veterinary Polyclinic, IVRI Izatnagar with the complaint of inappetence, diarrhea and chronic loss of weight. The hematological parameters did not show any significant alteration than the normal levels. The fecal examination has been shown positive for Monezia expansa infection. The institution of treatment of buck via the combination of praziquantel and levamisole along with supportive therapy brought successful recovery in 2 weeks.

Keywords: Diarrhea, Monezia expansa, praziquantel, levamisole

1. Introduction

Monezia expansa which is also called as sheep tapeworm, double pored tapeworm and milk tapeworm is a very common parasite that infects sheep, as well as goat populations in the form of gastrointestinal tract (GIT) parasitism [5, 6, 11], leads to direct or indirect economic losses to the marginal farmers. The tapeworm in a large number cause mild enteritis, nutritional deprivation and sometimes intoxications. The eggs of Monezia expansa are triangular shaped and each contains one embryonic tapeworm which is released in feces only after the rupturing of cooked rice shaped interproglottid gland that can be easily identified on direct fecal examination. The free-living forage mite or oribatid mites are the intermediate hosts that ingest ova and formation of cysticercoids in the body cavity after 111-120 days [9]. In lambs, M. expansa infections are usually mild and asymptomatic, but heavy infection may lead to intestinal obstruction, diarrhea and weight loss [2]. The combination of Praziquantel + Levamisole combination is highly effective in controlling and reducing the worm burden of M. expansa [12].

2. Methodology

2.1 Case History

A 16-month-old, a buck was presented to the Referral Veterinary Polyclinic, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly (U.P) with the history of inappetence, diarrhea and chronic weight loss along with the altered behavior. The buck was not dewormed and vaccinated as per standard regimen.

2.2 Clinical examinations and laboratory findings: Detailed examination revealed normal body temperature (102.1°F), the mucous membrane was pink, intact pupillary light reflex and menace reflex, heart rate (95 beats/min) and respiration rate (28 breaths/min) were within the normal range. All the hematological (Table.1) parameters are in normal range. The direct fecal examination showed the presence of the cooked rice shaped interproglottid gland (Fig.1) and triangularly shaped eggs (Fig.2) with pyriform apparatus which indicates that the animal is positive for Monezia expansa infection with gastrointestinal complications.

Fig 1: Cooked rice shaped interproglottid gland
out from the intestine of the ruminant host along with the gravid proglottids in the feces into the soil. The eggs are eaten by soil mites. Eggs must reach the gut of mite hosts within 1 day of release otherwise they are desiccated. However, chances of development are very good as soil mites can be so numerous on a pasture that even if only 3% are infected (with 4-13 cysticercoids each), a grazing ruminant may ingest over 2,000 cysticercoids per kilogram of grass. Once inside the intestine of mites, the eggs hatch and the oncospheres penetrate into the hemocoel and develop to the cysticercoid stage. This stage may take up to 4 months. When the infected mite is eaten by the grazing ruminants, mature cysticercoids are digested out of the mite and develop into mature tapeworms in the small intestine within 5–6 weeks. Diagnosis is done by analysis of the fecal sample in which eggs can be detected or often observation of the cooked rice shaped gravid proglottids in feces. It should be pointed out that fecal egg estimation is not an accurate index of intensity of Moniezia infection in ruminants since eggs are present in feces only after the proglottides have ruptured. In the present case also the quantum of infection was not correlated to the presence of eggs in feces.

The affected animal was successfully treated with the combination of praziquantel and levamisole. The same result has been reported by Southworth, 1996 that praziquantel @ 3.75 mg/kg orally along with levamisole 7.5mg/kg lead to complete removal of segments of Moniezia expansa. Praziquantel is active against a wide range of larval and adult cestodes that leads to very rapid contraction and vacuolization of the tegument, inhibition of glucose uptake and the decrease in glycolyis content [1]. Levamisole works as a ganglionic stimulant (cholinimimetic) causing paralysis which leads to passive elimination of worms and inhibition of fumarate reductase enzyme leading to depletion of metabolic energy availability to both immature and mature forms [12]. Broad spectrum antibiotic used to check secondary bacterial infection in stressed animals. Vitamin B-Complex helps to carry electrical signals efficiently and maintained gastrointestinal motility (Patel et al., 2018a and Patel et al., 2018b) and ascorbic acid reduces oxidative stress and promotes collagen formation lead to enhance the condition of the gastrointestinal tract.

4. Conclusion

Gastrointestinal (GI) parasitism by M. expansa generally causes minor health problems in goats but it affects growth and productivity of susceptible animal which leads to economic losses of marginal farmers. The affected animal can be successfully treated with the combination of praziquantel and levamisole along with the supportive therapy as well as proper care and management.

5. References


