

Diphyllobothriidae Infection in three dogs

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Abstract

Diphyllobothriosis, a parasitic infection caused by broad or fish tapeworms, has been increasingly observed in non-endemic regions of Andhra Pradesh. Three dogs were identified suffering with diarrhoea, loss of appetite, vomiting, chronic weight loss, and abdominal distention. Microscopic examination of their faeces identified elliptical to oval-shaped, operculated eggs characteristic of the *Diphyllobothriidae* family. Serum biochemistry revealed low cobalamin levels (117 ± 14.29 ng/L) in these dogs compared. The dogs were treated with praziquantel and all the dogs showed clinical improvement.

Keywords: Diphyllobothriosis, eggs, praziquantel, cobalamin

Diphyllobothriosis is the disease caused by *Diphyllobothrium* species, a parasitic flatworm that infests the small intestine of mammals. In dogs, this condition is relatively rare and typically occurs when they consume raw or undercooked fish or tadpoles carrying the larval plerocercoid stages of the worm (Scholz *et al.*, 2019). Reports of *Diphyllobothriidae* infection in dogs were very limited in the present geographical region. This article documents the occurrence of *Diphyllobothriidae* infection in dogs.

Three dogs were identified suffering with clinical diphyllobothriosis with signs of diarrhoea, loss of appetite, vomiting, chronic weight loss, and abdominal distention. These dogs were reported to feed with non-edible parts of raw fish while processing of fish for human consumption. Physical examination revealed pale mucous membranes and a distended abdomen. Faecal examination revealed eggs with morphological characteristics of the genus *Diphyllobothrium*. Eggs were brown and ovoid, with a smooth thin wall, and possessed an operculum at the narrower end and a minute terminal knob at the opposite end. They were unembryonated eggs containing vitelline cells of vague limits and granular cytoplasm (Fig. 1 and 2). Serum biochemical analysis revealed low cobalamin levels (108, 145, 98 with mean $\pm$ SE of 117 ± 14.29 ng/L) compared to the apparently healthy dogs (380 ± 50.02 ng/L).

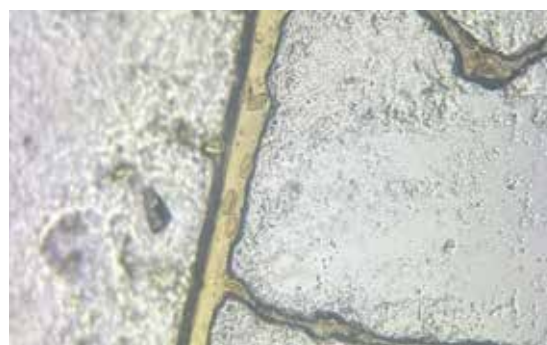


Fig.1. Eggs of Diphyllobothriidae (10x)

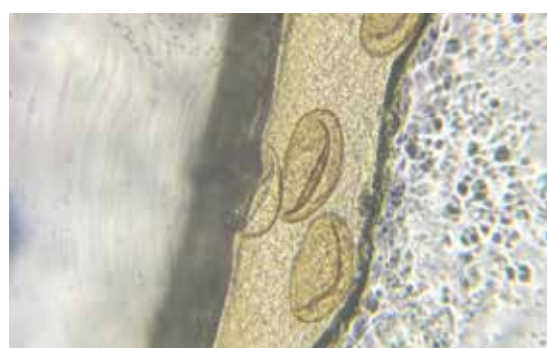


Fig.2. Eggs of Diphyllobothriidae (40x)

The dogs were treated orally with praziquantel at a dose rate of 7.5 mg/kg body weight and was repeated after 15 days along with supportive and symptomatic therapy. The dogs had uneventful recovery. *Diphyllobothrium spp.* is one of the longest intestinal tapeworms of fish-eating mammals, such as humans, dogs, cats, foxes, and other wild canines. The intestinal

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worms directly compete with the host for nutrition, resulting in a deficiency of essential nutrients, especially vitamin B₁₂. In dogs, this condition is relatively rare and typically occurs when they ingest raw or undercooked fish or tadpoles carrying the larval plerocercoid stages of the worm.

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