

Diagnosis and treatment of *Toxocara canis* infection in a dog- A case report

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Abstract

A female 2.5 month old Pomeranian pup was presented to Department of Veterinary Clinical Complex, College of Veterinary and Animal Sciences, Meerut, UP with history of inappetence and vomiting for past 4 days. Clinical examination revealed pale mucous membrane with increased capillary refill time, melena and white coloured worms in faeces. Faecal sample and the worms from the faeces were collected and sent for examination and identification of the worm. On direct faecal smear examination, large number of brownish, spherical unembryonated eggs of *Toxocara* spp were found. The microscopic morphological study on adult parasite revealed it as *Toxocara canis*. The male worm had a curved posterior end and female worms were straight tailed. Cephalic alae were present on the anterior end. The pup was treated with pyrantel pamoate @ 5 mg/kg body weight orally for three days and supportive therapy for 2 weeks. The pup showed marked recovery after 7 days of treatment.

Keywords: *Toxocara canis*, Dog, Adult worm, Pyrantel pamoate, Melana

Toxocariosis is a zoonotic parasitic infection of both domestic and wild dogs. It is caused by a nematode parasite *Toxocara canis* which get localized in the small intestine of dogs. *T. canis* are ascarid nematodes in the order Ascaridida and family Toxocaridae. Paratenic host for toxocara includes different species of mammals and birds. Source of infection for dogs include ingestion of food contaminated with *Toxocara* spp ova, transmammmary, transplacental and through cutaneous route (Nijssseet *al.*, 2016). It is worldwide in distribution but more cases are reported from developing countries. It can cause subclinical or clinical infections which can become serious or fatal in dogs. Larvae 2 (L2) cause visceral larval migration and ocular larval migration in paratenic host (Fisher, 2003). Incidence of clinical disease is highest in young dogs less than 6 month age and in adult dogs even if present, it does not exhibit any clinical signs hence act as a reservoir of infection in particular area (Sagar *et al.*, 2006). Clinical manifestation in toxocariosis depends on the adult worm load and the immune status of the host (Reddy and Sivajothi, 2017). *Toxocara spp.* eggs are unembryonated in the faeces of dogs and embryonation and development to infective larvae depends on the soil type and the environmental conditions and usually takes around one to several months (Parsons, 1987). Diagnosis can be done by coproparasitological techniques or by checking for worms in faecal samples. In this report,

we are presenting a case of toxocariasis, its clinical presentation, diagnosis and treatment.

Case history, Observations and Treatment

A female 2.5 month old Pomeranian pup was presented to Department of Veterinary Clinical Complex, College of Veterinary and Animal Sciences, Meerut, U.P. with a history of inappetence and vomiting for past 4 days. On clinical examination the pup was slightly lethargic and dull. Rectal temperature, heart rate and respiratory rate were found apparently normal. Visible mucus membranes were pale and capillary refill time was more than 3 seconds. Melena with white coloured worms expelled in faeces was also observed (Fig.1). Faecal sample and the worms from the faeces were collected and sent for examination and identification of the worm. Faecal sample was subjected to direct smear examination for identification of the parasitic ova. Direct faecal smear examination revealed large number of brownish, spherical unembryonated eggs of *Toxocara spp* (Fig.2). The microscopic morphological study on adult parasite revealed it as *Toxocara canis*. The male worm-had a curved posterior end and female worms were straight tailed. Cephalic alae were present on the anterior end (Fig.3, 4). On the basis of clinical signs, faecal sample examination and parasitic morphological study, the clinical condition was diagnosed as toxocariasis. The pup was treated with pyrantel pamoate @ 5 mg/kg

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Fig. 1. Melena along with adult worms

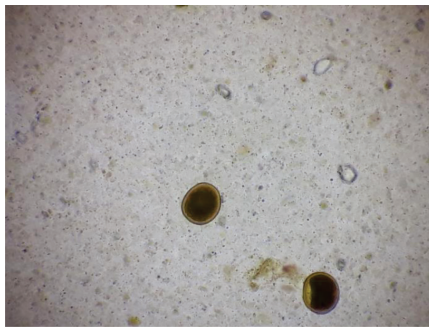


Fig.2 *Toxocara canis* ova in faecal sample (100x)



Fig. 3. Recovered adult *Toxocara canis* worm from faeces



Fig.4 Cephalic alae of *T. canis*

body weight orally for three days. Supportive therapy included Inj. ranitidine @ 0.5mg/kg body weight I.M. OD for 03 days and syrup aRBCe pet 2 ml P.O, BD for 15 days. The pup showed marked recovery after 7 days of treatment.

Discussion

Toxocara canis is an infection of dogs and humans are accidental host only. Toxocariasis being a zoonotic infection, proper antiparasitic therapy should be done to prevent its spread to the pet owner. It is a very important gastrointestinal parasitic disease of dogs and it acquires infection either through ingestion of ova or through paratenic hosts (Strube *et al.*, 2013). In dogs after oral ingestion of eggs, the larvae hatch in the small intestine. Adult dogs are also susceptible to infection and also act as paratenic host and carry L2 larvae and transmit infection to offspring either transplacentally or transmammary route. Clinical signs in pups include anorexia, weight loss, abdominal pain, diarrhea, nausea, vomiting, mild fever, anemia and other gastrointestinal signs such as constipation and in severe cases bowel obstruction. (Ahaduzzaman *et al.*, 2014 and Andrea *et al.*, 2019). In the case presented, animal showed inappetence,

anemia, vomiting with melena as the characteristic clinical signs. Coproscopy is the rapid diagnostic method for toxocariasis (Khuroo, 2003). Based on clinical signs, identification of parasitic ova and morphological characterisation of adult worms, the case was diagnosed as toxocariasis. Treatment of animal with pyrantel pamoate led to complete recovery (Raguvaran *et al.*, 2017).

Conclusion

The present article reports the diagnosis and successful treatment of natural toxocara infection in dog.

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