



## Case Report

### Gut Obstructive Toxocariasis in a Puppy

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#### ABSTRACT

*Toxocara spp.* are common resident of intestine especially in puppies reared in unhygienic condition devoid of deworming. A gut obstructive case was found as sequel of *Toxocara canis* in a 2.5 months old puppy manifested by obstipation and distended abdomen. Oral administration of pyrantel pamoate (@5mg/kg B.W) and magnesium hydroxide @ 5ml (total dose) with other supportive therapy was found effective. Reported therapy can be implemented as alternative for surgery in gut obstructive case.

**Key Words:** Toxocariasis, Puppy, Pyrantel pamoate, Gut obstruction

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Toxocariasis is a globally important gastrointestinal parasitic disease of canids particularly a young ones that frequently acquire infection through contaminated environment extensively by ingestion of infective ova from infected one and exposing paratenic hosts (Strube et al., 2013). The infestation could be occurred from contact with contaminated soil, dirty hand, raw vegetables and nutrition disorder such as pica has also an important role in the infestation with *Toxocara spp.* (Tavassoli et al., 2012). The risk of environmental contamination and subsequent infection in offspring increases with infected definitive hosts shedding ova into the environment. Infection rates in Europe range from 3.5% to 34% among *T. canis* infected dogs from different environments (Lee et al., 2010). The well established clinical symptoms of this disease include anorexia, weight loss, abdominal pain, diarrhea, nausea, vomiting, mild fever, anemia, bloat (due to obstruction of the alimentary tract) and increased irritability. In Chittagong district of Bangladesh the highest seasonal prevalence of Toxocariasis found 35.71% in stray dogs during the summer season (Das et al., 2012). It seems to be an emerging problem in puppies as comparison to other enteric parasites as infections with intestinal nematodes are less frequently diagnosed in hospitalized patients despite that they are quite common. The therapeutic issue is a matter of great controversy not only because of inadequate availability, limited potency of anthelmintic drugs in terms of parasite eradication, but also because of confusion about the benefits of therapy as most *Toxocara* infections are self-limiting like few other enteric nematode (Othman, 2012). Many animal studies were conducted employing different drugs, regimens and conditions, yet the results were variable and inconsistent. Therefore, current investigation was

carried out to find the therapeutic outcome of intestinal obstruction and complications due to *Toxocara canis*.

A 2.5 months old non-descriptive puppy (young dog) was admitted to the S.A.Q. Teaching Veterinary Hospital, Chittagong Veterinary and Animal Sciences University, Chittagong, Bangladesh, with a history of anorexia, vomiting with worm (single time) and absence of voiding for 48 hours with no deworming history. Clinical examination revealed that the puppy heart rates 120 bpm (beats per minute) and 99°F rectal temperature with respiration rates 23 breaths/minute. Physical examination found pale mucous membrane, mild dehydration (CRT=3 seconds) and abdominal distention (Figure: 1).

Fecal sample was collected by using rectal swab and direct smear was made to perform the coproscopy under the light microscope. On coproscopy characteristics eggs of *Toxocara canis* were found, that confirmed by ova morphology (Figure: 2). Other parasites or their eggs were not observed (except *Toxocara canis*) in further coproscopy of fecal sample by adopting floatation and sedimentation techniques. On the basis of clinical signs/symptoms and coproscopy findings it was confirmed that puppy was infected with *Toxocara canis*.

The puppy was treated with orally Pyrantel pamoate (Delentin syrup<sup>R</sup>, 50mg/ml, Renata Ltd., Bangladesh) @5mg/kg body weight for single time and repeated dose two weeks apart to prevent re-infection; Magnesium hydroxide (Milk of magnesia<sup>R</sup>, 40mg/ml, Acme Pharmaceutical Ltd., Bangladesh) @ 5ml orally at a time as laxative, intravenous 5% dextrose normal saline @ 30ml for two consecutive day for mimicking dehydration and providing energy;



Figure 1: Puppy showing pendulous abdomen with obstipation due to gut obstruction by *Toxocara canis*

and intramuscular vitamin B-complex (B<sub>50</sub> Injection, Square pharma. Ltd., Bangladesh) @ 1ml/day for five days to combat anemia and weakness. Following therapy defecation occurred after three hours with expulsion of *Toxocara canis* with feces. In follow up there was no further complication observed.

*Toxocara* is the ubiquitous parasite and infected animals may have mild symptoms included nausea and intermittent abdominal discomfort. Some animals remain asymptomatic or develop organ specific signs. Therefore, coproscopy is suggested as easily approached rapid clinical diagnostic technique as supported by Khuroo (2003). A retrospective parasitological examination was conducted by Barutzki and Schaper (2011) of dog faecal samples and found significantly higher infection rate in the age group up to 3 months of age that agreed with our study puppy age.

Functional obstipation is one of the most common, frustrating and durable pediatric gastrointestinal disorders prod by a great extent including enteric parasite. Treatment of functional obstipation is often based on experience rather than evidence (Tabbers and Benninga, 2013). Therapeutic selection of laxatives may vary across regions and countries. The most relevant laxative groups are the osmotic salts, sugars and sugar alcohols, macrogol, anthraquinones etc. categorized as both organic and inorganic compounds. Milk of magnesia is an inorganic laxative and can effectively used in obstipation without any adverse effect, as agreed to the findings of Fanning and Hojat (2011).

Pyrantel pamoate is widely used as a dewormer against round worms in dogs, cats and many other species. It was first launched in the market for the practitioner in the 1970s. Schmid et al. (2010) reported 94.3% efficacy in 20 dogs experimentally infected with *Toxocara canis*, and 100% efficacy in naturally infected dogs. Since Pyrantel is poorly absorbed by the host's intestine and causes paralysis of the worm and expulsion with void (Mora et al., 2006); so it can be used effectively with purgative for rapid expulsion of worm in non-severe cases prior to surgical approach along with other supportive therapy such as vitamin B-complex as agreed with Katona and Katona-Apte (2008).

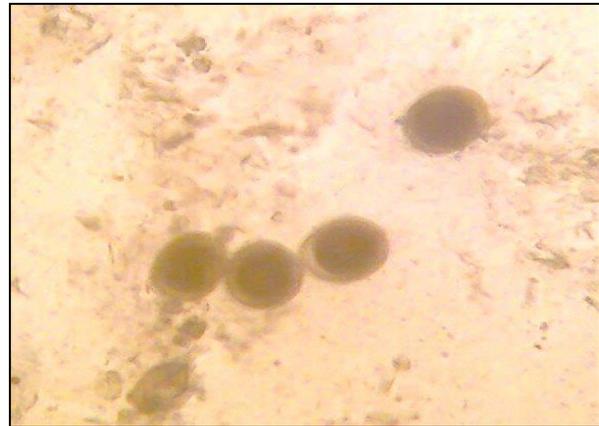


Figure 2: Thick wall, oval shape, granulated eggs of *Toxocara canis* (Under 10X light microscopy).

Obstruction of alimentary tract due to ascariasis may occur in variety of extent that's leads to scanty feces, mild colic to bloat, enterotoxaemia, absent of defecation and even death due to functional abnormality. Based on clinical assessment the appropriate therapeutic measures should be taken prior to surgical intervention in serious obstructive cases.

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#### COMPETING INTEREST STATEMENT

Authors declare that they have no competing interests

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