First report of *Troglotrema salmincola* infection in dog, in Iran

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**Abstract.** *Troglotrema salmincola* causes salmon poisoning. Salmon poisoning by *T. salmincola* is a rare parasitosis found in tropical and sub tropical condition in dogs. In our report, the parasite eggs observed from the feces of dogs were identified as *Troglotrema salmincola* due to their structure and typical morphology. Treatment was carried out using praziquantel and after administration, no parasitic element was detected. This is the first report of infection with *T. salmincola* of dogs in Iran.

**Keywords:** *Troglotrema salmincola;* Salmon poisoning; Dog; Iran.

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**Introduction**

*Nanophyetus salmincola* (Chapin, 1926) Chapin, 1927 (syn. *Troglotrema salmincola* Witenberg, 1932) belongs to the *Nanophyetidae* Dollfus, 1939, and infects various mammals including humans, dogs, cats, raccoons, foxes and three species of birds on the Pacific coast of North America and Canada, and Eastern Siberia (Beaver et al., 1984; Millemann and Knapp, 1970). It is small, pyriform, and possesses two large testes in the posterior half of the body. Its snail host is *Oxytrema silicula* and the second hosts are salmonid (trout, salmon) and non-salmonid fish (Millemann and Knapp, 1970). Nanophyetiasis is endemic in the far-eastern part of Russia including Amur and Ussuri valleys of Khabarovsk territory and north Sakhalin (Sen-Hai et al., 2003; Sen-Hai and Mott, 1994). In local ethnic minorities, the prevalence is 20%, and reaches up to 60% in some localities. In USA, 20 human cases have been reported since 1974 (Eastburn et al., 1987). Infected people may experience mild diarrhea, abdominal discomfort, and eosinophilia. In animals such as dogs, foxes, and coyotes, however, the fluke has been shown to be the vector of a rickettsia, *Neorickettsia helmintheca*, which causes a serious and often fatal systemic infection known as ‘salmon poisoning’, which has not been reported in humans. Another species, *Nanophyetus schikhobalowi*, described from natives of far-eastern Siberia, is regarded as a subspecies, *N. salmincola schikhobalowi*; the major difference from *N. salmincola* is that this subspecies is apparently not a vector for the rickettsial organism (Millemann and Knapp, 1970).

The our study, suggested the first report of *Troglotrema salmincola* infection in dogs, in Iran.

**Case report**

In October 2011, a female dog referred to Veterinary Faculty of Shahid Bahonar...
University of Kerman, Iran. She experienced epigastric tenderness, mild gastrointestinal symptoms (including, fever, diarrhea, stomach pain, nausea, vomiting, weight loss).

Stool sample were subjected to direct smear and formalin-ether sedimentation methods. Microscopic examination of all sample obtained eggs, measuring approximately 87 µm to 97 µm by 38 µm to 57 µm (figure 1). After careful examination, they were finally identified as eggs of *Troglotrema salmincola*, based on their characteristic morphology according available source include Soulsby (Soulsby, 1986).

![Figure 1. Egg of *Troglotrema salmincola*](image)

Praziquantel and niclosamide were the drugs of choice for treating *Troglotrema salmincola* infestation. Therefore the dog received treatment with praziquantel. After the treatment, the diarrhea ceased and other symptoms disappeared and the patient expressed of gastrointestinal pain relief. In stool sample examined ten days after treatment, no parasitic elements (eggs) was detected.

**Discussion**

According to morphology and structure of the eggs in direct smear and formalin-ether sedimentation methods, they were identified as eggs of *T. salmincola* using the following special characteristics, light brown, ovoid and operculate at one end, with a small blunt projection at the other end. They measured 87 µm to 97 µm by 38 µm to 57 µm.

The source of our dog’s infection is not clear, but, he had a habit of eating fresh and raw meat which, can be the source of infection. Migratory fish-eating birds may be as the source infection, too.

Generally, dog infections are rare and few cases were reported in tropical and sub tropical condition. So, this is the first report of infection with *T. salmincola* of dog in Iran. The clinical manifestations and other aspects of such condition are not well-known, thus, there is a need for more studies.

**References**


