

## Therapeutic Management of Spirocercosis In Labrador Dog

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### Abstract

A male seven-year-old Labrador dog was presented to Veterinary Clinical Complex, Nagpur, with a history of chronic vomiting since last three weeks, inappetence and coughing. Radiographic examination shows a radiopaque structure in the mediastinal area. On faecal sample, examination revealed the presence of eggs of nematode *Spirocerca lupi*. For confirmatory diagnosis, an endoscopy was performed, which validated the presence of an oesophageal granulomatous nodule. The case was successfully treated with Doramectin @ 400 mcg/kg once weekly for seven weeks, along with supportive treatment.

**Keywords:** Spirocercosis, Oesophageal granuloma, Chronic vomiting

The nematode *Spirocerca lupi* is primarily a parasite of dogs, which causes typical lesions of esophageal nodular granulomas, aortic aneurysms, and spondylitis (Lavy E *et al.*, 2002). Canines are infected by ingesting an intermediate host (coprophagus beetles) or other paratenic hosts (e.g., birds, lizards, mice, and rabbits). Larval stage three (L3) penetrates the stomach wall and migrates in the walls of gastric arteries to the thoracic aorta to the oesophagus. Adult *S.lupi* generally live in esophageal and gastric nodules. Clinically significant lesions are related to the parasite's migration route and final destination (Lobetti R *et al.*, 2012). Esophageal lesions are associated with regurgitation and or persistent vomiting, ptyalism, and dysphagia, followed by weakness and emaciation. Sudden death may be caused by the rupture of an aortic aneurysm induced by the migration of worms in the aortic wall (Hylton Bark *et al.*, 2003).

### Case History and Observations

A seven-year-old male Labrador was presented to the Veterinary Clinical Complex, Nagpur, with a chief complaint of chronic vomiting since last three weeks, inappetence, regurgitation, and coughing with inspiratory dyspnea. On physical examination, the rectal temperature was 101.2°F. Stridor sound was heard on auscultation in the cranial thorax; for further investigation, thoracic radiography was performed, which revealed the presence of a radiopaque structure in the mediastinal area above the carina along with narrowing of the trachea (Fig. 1). Faecal sample examination was performed, and the sample was found positive for eggs of *Spirocerca*

*lupi*. For confirmatory diagnosis, an esophagoscopy was performed, which validated the presence of an oesophageal granulomatous nodule (Fig. 2). Complete blood count (CBC) revealed increased neutrophilic leukocytosis, whereas other parameters were within the normal range (Table 1).

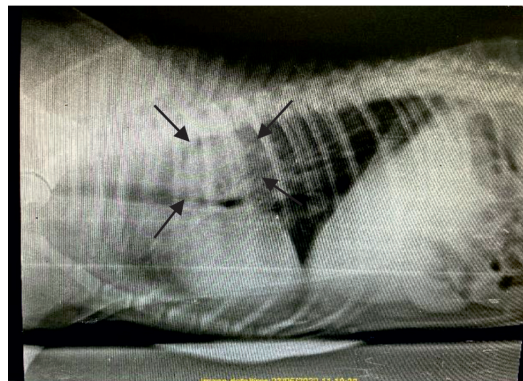


Fig. 1. Lateral radiograph showing a radiopaque structure in the mediastinum region.

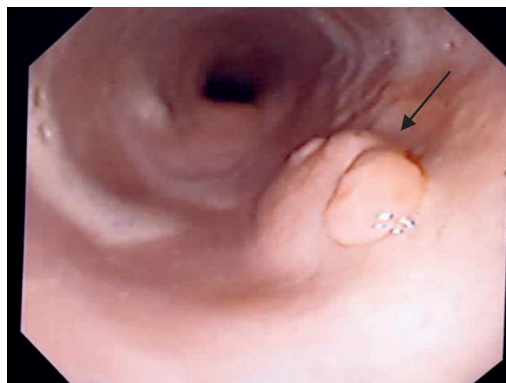


Fig. 2. Endoscopy showing an oesophageal granulomatous nodule

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**Table 1. Complete Blood Count report**

Parameter	Observed values
WBC (10 <sup>3</sup> )	20
PCV (%)	38
Neutrophils (%)	80
Thrombocytes (10 <sup>3</sup> /mm <sup>3</sup> )	475

### Treatment

The dog was treated with Doramectin @ 400 mcg/kg once in week s/c for seven weeks along with Inj.Ranitidine @ 2 mg/kg b.wt BID, Inj Ondansetron @ 0.3 mg/kg b.wt BID, Inj Amoxicillin & clavulanic acid 20 mg/kg b.wt BID with fluid therapy for three days. Regurgitation reduced after one week of treatment and the dog regained his appetite. Coughing decreased significantly in two weeks.

### Discussion

In spirocercosis, lesions are caused by migration and persistent presence of larvae and adult organisms in the tissues, where oesophageal granulomas, aortic scars, and aneurysms are most commonly seen lesions. Michal Mozaki (2002) mentioned that large breeds were predisposed to infection compared to small breeds, among which the Labrador Retriever was significantly over represented. Hylton (2003) stated that the size of granulomas decides the severity of clinical signs and symptoms such as regurgitation, persistent vomiting, difficulty in swallowing, and ptyalism. Oesophageal granuloma appears on radiograph when they are large enough. Esophagoscopy is a confirmatory and sensitive

diagnostic modality that directly visualises typical broad base protuberance with nipple like orifice (Mathios *et al.*, 2008). Several anti-helminthics (diethylcarbamazine, disophenol, levamisole, albendazole, and fenbendazole) are used to treat canine spirocercosis but have limited efficacy, whereas avermectins; ivermectin and doramectin have better efficacy (Collies and other breeds are excluded). Lavy (2002), reported that multiple subcutaneous injections of doramectin (400 microg/kg) were shown to be effective and safe in the treatment of canine spirocercosis.

### References

- Berry W.L. 2000. *Spirocerca lupi* esophageal granulomas in 7 dogs: resolution after treatment with doramectin. *J Vet Intern Med.* Nov-Dec; **14(6)**:609-12.
- Hylton Bark 2003. *Spirocerca Lupi* Infection and Control in Dog. World Small Animal Veterinary Association World Congress Proceedings. <https://www.vin.com>
- Lavy E, Aroch I, Bark H, Markovics A, Aizenberg I, Mazaki-Tovi M, Hagag A and Harrus S. 2002. Evaluation of doramectin for the treatment of experimental canine spirocercosis. *Vet Parasitol.* Oct16; **109(1-2)**:65-73.
- Lobetti RG. 2000. Survey of the incidence, diagnosis, clinical manifestations and treatment of *Spirocerca lupi* in South Africa. *J S Afr Vet Assoc*; **71**:43-46.
- Mathios E. M, Timoleon R and Alexander F. K, 2008. Canine Spirocercosis. <https://vetfolio-vetstreet.s3.amazonaws.com>.
- Okanishi H, Matsumoto J, Aoki H, Kagawa Y, Asano K, Nogami S, and Watari T. 2013. Successful resolution of esophageal granulomas in a dog infected with *Spirocerca lupi*. *J Vet Med Sci.* Dec 30; **75(12)**: 1629-32.

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