

THERAPEUTIC MANAGEMENT OF SPIROCERCOSIS IN LABRADOR DOG

Yogita R. Game¹, Goutam R. Bhojne², Vinod M. Dhoot³, S.W. Kolte, C.G. Panchbhai², Varad Vinod Dhoot¹ and S.P. Kale¹

1M.V.Sc. Student, 2Assistant Professor, 3Professor & Head, Department of Veterinary Clinical Medicine, Ethics & Jurisprudence, Nagpur Veterinary College, Seminary Hills, Nagpur- 440 006, Maharashtra.

[Received: 15.02.2023; Accepted: 23.05.2023]

{DOI 10.29005/IJCP.2023.15.1.21-22}

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.*, 2000). 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(Figure 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(Figure 2). Complete blood count(CBC) revealed increased neutrophilic leukocytosis, whereas other parameters were within the normal range (Table1.).

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.

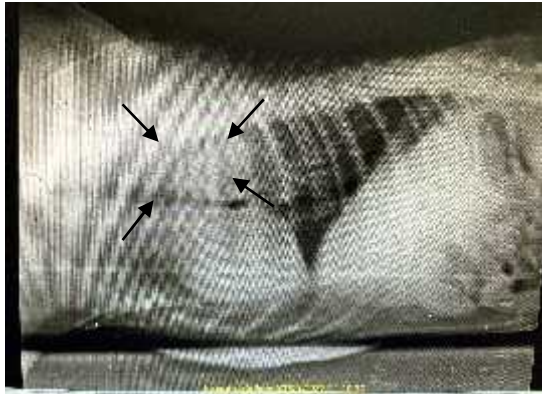


Figure.1.Lateral radiograph showing a radiopaque structure in the mediastinum region



Figure.2.Endoscopy showing an oesophageal granulomatous nodule

TABLE.1. COMPLETE BLOOD COUNT REPORT

Parameter	Observed values
WBC (10^3)	20
PCV (%)	38
Neutrophils (%)	80
Thrombocytes ($10^3/mm^3$)	475

Results and 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. 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 as also reported by Mathios E. Mylonakis, *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 herding breeds are excluded). The multiple subcutaneous injections of doramectin (400 microg/kg) were shown to be effective and safe in the treatment of

canine spirocercosis as also recommended by Lavy E. (2002).

References

- Hylton Bark (2003). Spirocerca Lupi Infection and Control in Dog. World Small Animal Veterinary Association World Congress Proceedings, October, 24-27, 2003; Bangkok, Thailand.
- 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.*, **109**(1-2): 65-73.
- Lobetti, R.G. (2000). Survey of the incidence, diagnosis, clinical manifestations and treatment of Spirocercalupi in South Africa. *J. S. Afr. Vet. Assoc.*, **71**: 43-46.
- Mylonakis, M.E., Rallis, T, and Koutinas, A.F. (2008). Canine spirocercosis. *Compend. Contin.Educ.Vet.*, **30**(2): 111-116.