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Endoscopic evaluation of *Spirocerca lupi* infection in a non-descript dog: A case report

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Abstract

A non-descript dog about three years was presented with the history of vomiting for three weeks with yellow colour vomitus. Lateral survey radiography of thorax revealed elevated thoracic trachea with enlarged mediastenal lymph node and nodular lesion underneath at the level of third intercostal space. On endoscopic examination, the oesophageal mucosa was pale pink in colour with two glistening nodules in the proximal thoracic oesophagus. Histopathological examination of oesophageal nodular biopsy revealed fibrous tissue infiltrated with inflammatory cells. Coprological examination demonstrated presence of ova of Spirocerca lupi worms and the condition was diagnosed as a case of Spirocerca lupi infection. The dog was treated with doramectin, rabeprazole and ondansetron and became asymptomatic within three weeks of treatment.

Keywords: *Community dog, vomiting, endoscopy, Spirocerca lupi*

A non-descript dog of about three years age was presented with the history of vomiting since past three weeks with yellow colour vomitus. The animal was treated with ondansetron and pantoprazole, no improvement was noticed. On general examination, the animal was showing difficulty in breathing and on physical examination, the physiological parameters were in normal range. The animal was dull and dehydrated.

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On abdominal palpation, thickened intestinal loops were noticed. Lateral survey radiography of thorax revealed elevated thoracic trachea, enlarged mediastinal lymph node and nodular lesion underneath at the level of third intercostal space (Fig. 1).Stomach and loops of intestine were found distended with air and radiopaque granular materials were seen scattered at different locations of the intestine. Hence, endoscopical evaluation was resorted to.

Endoscopy was performed using Karl Storz Veterinary Video Endoscope PV-SG 28 – 300 under general anaesthesia. On endoscopic examination; the oesophageal mucosa was pale pink in colour with two glistening nodules in the proximal thoracic oesophagus (Fig. 2). Gastric mucosa was normal bright pink.

Biopsy samples were collected from the oesophageal nodules using round cupped endoscopic biopsy forceps. Biopsy samples from the oesophageal nodules were preserved in 10% neutral buffered formalin. Histopathological evaluation of oesophageal nodular biopsy using Haematoxylin and Eosin staining revealed chronic fibrous connective tissue proliferation and infiltrated with inflammatory cells (Fig. 3). On coprological examination, *Spirocerca lupi* eggs were demonstrated in the faecal sample of the dog (Fig. 4).

Based on the clinical signs and observations in radiography, endoscopy, histopathology and coprological examinations, the condition was diagnosed as *Spirocerca lupi* infection. The dog was treated with Inj. doramectin (0.2mg/kg body weight subcutaneously, three doses at two week

Fig.1. Skiagram of plain radiograph of lateral thorax

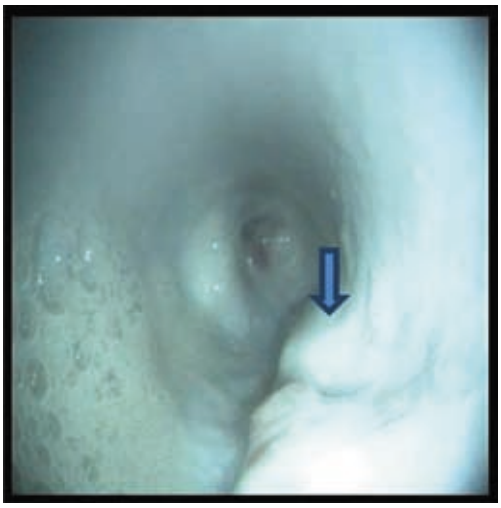

Fig. 2. Oesophageal nodules

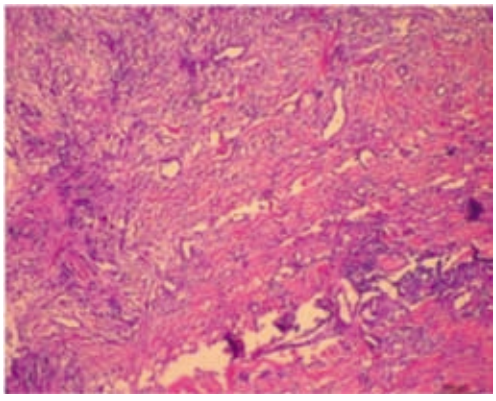

Fig. 3. Histomorphograph of oesophageal Nodules (Haematoxylin and Eosin,10X) (10X,A12)

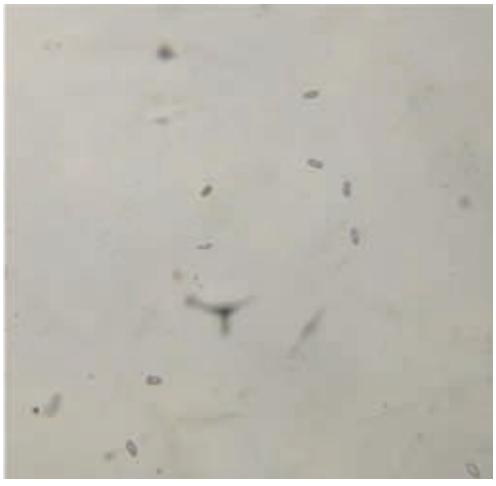

Fig. 4. Eggs of *Spirocerca lupi*

interval) along with Tab. rabeprazole (20mg once daily) and Tab. ondansetron (0.5mg/kg body weight twice daily) orally for two weeks. Clinically the dog improved after treatment.

Van der Merwe *et al.* (2007) suggested that dogs with the history of chronic vomiting may be subjected to endoscopic examination of oesophagus and stomach in addition to radiography of thorax and abdomen. The dog was subjected to coprological examination and *Spirocerca lupi* eggs were demonstrated in the faecal sample, which was in agreement with observations of Van der Merwe *et al.* (2007) in *Spirocerca lupi* infection in dog. It was also reported that the dogs infected with *Spirocerca lupi* were presented with chronic vomiting and dullness.

Two glistening nodules were visualised in mid oesophagus during endoscopic evaluation which was in agreement with the observations made in the lateral survey radiograph. Similar observations was made by Psader *et al.* (2017) who had observed oesophageal granuloma in Hungarian dogs with *Spirocerca lupi* infection using endoscopy. Biopsy samples were collected endoscopically from the oesophageal nodules in dog using round cupped forceps (Ruiz *et al.,* 2017). Histopathological findings of the biopsy samples collected were similar to the observations of Wijekoon *et al.* (2018). In that study the authors observed eosinophils, fibroblasts and mature connective tissue, vascularized with small blood vessels forming the fibrovascular tissue in the nodule.

The dog was treated with doramectin subcutaneously for six weeks along with ondansetron and rabeprazole orally for two weeks and became asymptomatic. Okanishi *et al.* (2013) opined that doramectin and milbemycinoxime were effective in treatment of *Spirocerca lupi* infection in dogs.

Summary

Spirocerca lupi is a parasitic nematode; it mostly affects carnivores, especially dogs. This is the report of *Spirocerca lupi* infection diagnosed in the oesophagus using endoscopy followed by radiographic and faecal sample examination in a non-descript dog. The dog was successfully treated with doramectin, rabeprazole and ondansetron for three weeks.

Conflict of interest

The authors declare that they have no conflict of interest.

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