

## Retrospective Study on Spirocercosis in Dogs Presented for Necropsy

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*Spirocercus lupi* is a spirurid nematode of carnivores with worldwide distribution although it is most prevalent in the tropics and subtropics. Dogs become infected with the worm when they ingest either *Spirocercus* infected coprophagous beetle or a paratenic host. Following ingestion of infected paratenic hosts, the L3 larvae of *S. lupi* are liberated in the gastric lumen and subsequently the larvae penetrate the gastric mucosa and migrate towards the caudal aorta through the walls of gastric and celiac arteries. The larvae spend up to three months in the aortic wall, where they molt to L4 and finally to adults. Young adult worms then migrate from the aorta to the oesophagus or elsewhere. Groups of worms (3-6) cluster together in the oesophageal submucosa and induce the formation of nodules. Over a period of time, some of the oesophageal nodules may undergo malignant neoplastic transformation, with subsequent metastasis to other sites.

The aim of this study was to determine the prevalence of *spirocercosis* in 326 necropsies of dogs presented for necropsy to the Division of Veterinary Pathology at the Faculty of Veterinary Medicine and Animal Science during January 2008 to August 2011 and to assess the severity of infection.

Out of the 326, 161 (49.3%) necropsies showed *Spirocercus* nodules in the oesophagus, and among them 10 (6.2 %) were reported as sudden deaths due to acute haemothorax caused by ruptured thoracic aortic aneurysm which was solely caused by *Spirocercus* infection. Another four (2.4%) had fibrosarcoma in the oesophagus which was not the cause of death. One case of death was due to pyothorax initiated by oesophageal perforation as a result of *Spirocercus* induced severe granulomatous inflammation in the wall of the oesophagus. Another case of aberrant migration of *Spirocercus lupi* into the spinal cord resulting in paraplegia and subsequent death was recorded. In the remaining 145 cases (90%) *Spirocercus lupi* was an incidental finding. The age of the affected dogs ranged between 5 months to 16 years; 53 (32.9%) were 6-9 years, 34 (21.1%) were 9-12 years, 25 (15.5%) were 3-6 years, 20 (12.4%) were between 12-16 years and 18 (11.1%) were between 1-3 years while 11 (6.8%) were less than one year old. Majority of the dogs affected were crossbreds (69, 42.8%) while the remaining cases were German shepherds (51, 31.6%), Doberman pinschers (21, 13%), Pomeranians (8, 4.9%), Rottweilers (7, 4.3%) and Labradors (5, 3.1%).

The findings indicate that the prevalence of canine spirocercosis was very high and therefore, more attention should be paid to control and prevent this infection. The potential aberrant migration of the larvae could lead to pathological changes giving rise to a variety of clinical manifestations. The severity of the clinical condition would depend on the organ/s affected and severity of the pathological process. Thus, the affected animal may not show clinical signs or may have noticeable signs only at later stage. If vital organs are affected or pathological sequelae are severe, the disease can be fatal. Since early diagnosis holds the key to successful treatment of the disease, further investigations are necessary to develop a reliable technique for early diagnosis of spirocercosis.