DIROFILARIASIS IN A DOG

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Commonly known as heartworm disease, dirofilaria is a parasitic disease caused by a nematode called “Dirofilaria immitis”, which in its adult form lives in the right side of the heart and pulmonary arteries. Dirofilaria is a serious illness which can affect cats and dogs that get it from mosquito bites, which inoculate microfilariae through the skin from an infected animal into a healthy one (Arnold P. et al., 1994 and Levy J.K. et al., 2011).

Normally after 6 months from the time the contagion occurred, the tiny microfilariae that are traveling through the bloodstream reach their adult form and accumulate in the heart’s right ventricle and pulmonary arteries. Most frequent signs in dogs associated to the parasite’s location are: loss of appetite, weight loss, cough, laboured breathing and the presence of blood in respiratory secretions, among others. Cats, on the other hand, can also develop asthma and tachycardia. The severity of these and other clinical signs depends on the number of worms, the animal’s activity and its immune response the worm. Therefore, in some animals it can derive in a congestive heart failure, abdominal against oedema or oedema of the extremities, and even death due to a large number of worms in the heart (Hoch H. and Strickland K., 2008).

A novel approach for the treatment of cardiopulmonary dirofilariosis is targeting the Wolbachia rickettsial endosymbionts. Treatment with tetracyclines has been reported to damage D. immitis, even causing death of adult worms (Kramer L. et al., 2008 and Colby K.N. et al., 2011). Long-lasting administration of both Doxycycline and Ivermectin before or in the place of melsarsomite injections can eliminate adult worms and reduce the risk of thromboembolism. Therefore, it has been suggested that a combination of Doxycycline for 30 days and Ivermectin for 6 months has a potential efficacy, as high as 73%, in the adulticide therapy in dogs infested with D immitis (Bazzocchi C. et al., 2008 and Giannelli A. et al., 2013).

A G.S.D. of 3 years old from the Somali region was referred to the Faculty Clinic of Jigjiga University, Jigjiga with a history of weight loss and rapid fatigue. It was having the symptoms of chronic cough, occasional dyspnoea and poor exercise tolerance with normal appetite. The dog had the temperature of 39.5°C. On clinical examination increased vesicular sounds and dyspnoea after physical excitement and effort were the only abnormal findings demonstrable. Radiologically demonstrated changes of the pulmonary arteries led to a tentative diagnosis of Dirofilariosis. The stool examination was negative for parasitic infestation. The parasitological diagnosis based on serology and the morphology of microfilaria isolated from the blood indicated an infection by microfilariae and adult stages of Dirofilaria immitis. On haematological examination, the haemogram of the dog revealed mild anaemia. However in present case neutrophilia was also recorded.

After premedication with Aspirin, the patient was treated against adult filariae with Caparsolate, and a month later with Ivermectin against the microfilariae. At the time of reexamination, 5 months after initiation of therapy, the dog was clinically healthy and free of any demonstrable infection with Dirofilaria.
Left: *Aedes albopictus* mosquito, a potential vector for Dirofilariasis; Center: *Dirofilaria* and Right: Picture of affected dog.

References

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