

FOCAL ENCEPHALOMALACIA CAUSED BY CYST FORMING COCCIDIAN IN A DOBERMANN PINSCHER DOG WITH NEUROLOGICAL DISEASE

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Three cyst forming coccidian species, viz., *Sarcocystis neurona*, *Toxoplasma gondii* and *Neospora caninum* are known to cause fatal neurological diseases in domestic animals. Despite the presence of *T. gondii* and several species of *Sarcocystis*, there are no records of neurological disease caused by these parasites in animals in Sri Lanka. This paper describes a neurological disease in a dog caused by a cyst forming coccidian for the first time in this country.

A 5-year old Dobermann Pinscher intact male dog with a complaint of muscle tremor, seizures and progressive paralysis was examined clinically with particular attention to the functions of the nervous system. The blood and urine samples were also examined for haematological and clinico-pathological parameters. The dog had rectal temperature of 100.5 °F, bounding pulse (90/min), tachycardia, tachypnoea (38/min), monocytosis (46%), pale mucosae and mucopurulent nasal discharge. Neurological examination revealed the presence of muscle tremor, hypesthesia, seizures and hemiplegia on the left side. Despite the clinical attention, the dog died on the seventh day after admission and subsequently, a detailed *post mortem* examination was performed. The vital organs including the brain were examined histopathologically using paraffin embedded tissue sections stained with haematoxylin and eosin (H&E) and periodic acid schiff (PAS) reagents. The gross lesions included a hemorrhagic cerebral infarction, congestion and hyperemia of the leptomeninges, and pulmonary congestion. An area of lequefactive necrosis characterized by the loss of architecture of the neuropil but intact blood vessels, predominance of gitter cells and hemorrhage, was observed histopathologically. Degeneration of endothelial cells, perineuronal and perivascular oedema, micro and arctogliosis, perivascular cuffing with monocytes, macrophages and lymphocytes, and nonsuppurative leptomeningitis were also noted. A number of proliferating coccidian cysts containing PAS positive parasite was found in neurons, astrocytes, macrophages and endothelial cells in the lesion.

The causative coccidian parasite found in this study resembles *T. gondii* and *N. caninum* morphologically. Since it is difficult to distinguish the proliferating stages of these two species by light microscopy, further studies employing immunohistopathological techniques are needed to identify the organism. Furthermore, encephalomalacia and nonsuppurative encephalitis caused by these coccidians could be included in differential diagnosis of neurological diseases in dogs in Sri Lanka.

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