

NON-SUPPURATIVE MENINGOENCEPHALITIS IN A BRUSHTAIL POSSUM (*Trichosurus vulpecula*) (CASE 1411.1)

CASE HISTORY

A ten year old female brushtail possum (*Trichosurus vulpecula*) was submitted to a veterinary clinic with a unilateral cataract, ataxia, poor weight and pale gums. The animal was thought to have ingested rodenticides and blood tests revealed anaemia (PCV 18 L/L). The possum was treated with amoxicillin and vitamin K, and it improved over the following 2 weeks (the PCV increased to 35L/L). The possum did not eat well, it began losing weight, and its ataxia progressed. The possum became dehydrated (PCV48 L/L, TPP 8.0 g/L) so euthanasia was elected.

GROSS PATHOLOGY

Gross post mortem examination revealed no significant findings. Formalin fixed tissues were submitted to the Registry.

HISTOPATHOLOGY

Lesions are not evident within the following tissues: myocardium, ovary, oviducts/vagina, pancreas, spleen.

Liver: Hepatocytes contain small quantities of brown cytoplasmic pigment. Multifocal hepatocytes contain eosinophilic intranuclear inclusion bodies and have peripheralised chromatin.

Kidney: Scattered renal tubules contain small quantities of mineral or cellular casts. Neutrophils are evident within glomeruli. A small number of interstitial lymphoid aggregates are evident within the renal interstitium.

Eye: The sample is fragmented. The retina is artefactually separated from the choroid. No ganglion cells are evident within the retina. The lens protein at the lateral aspects of the lens is liquefied. Lenticular epithelial cells have migrated to a position within the lenticular protein. The connective tissue surrounding the optic nerve contains a light infiltrate of mononuclear cells and a small number of neutrophils. The optic tract itself contains scattered mononuclear cells and 1 - 2 cell layer perivascular cuffs composed of mononuclear cells.

Brain: An extensive tract of malacia and haemorrhage is evident at the junction of the cerebral cortex and the dorsal thalamus (**Fig 1a**). Blood vessels in this region exhibit fibrinoid necrosis (**Fig 1b**). One to three cell layer thick cuffs

of mononuclear cells surround multifocal blood vessels within the brainstem, cerebral cortex and meninges (**Fig 1c**). Focally the meninges are markedly thickened with a mononuclear cell infiltrate (**Fig 1d**).

MORPHOLOGICAL DIAGNOSIS

Euthanasia

Retinal atrophy and unilateral cataract

Extensive nonsuppurative meningoencephalitis

Focally extensive acute cerebral haemorrhage and malacia

Multifocal eosinophilic intranuclear inclusion bodies - liver

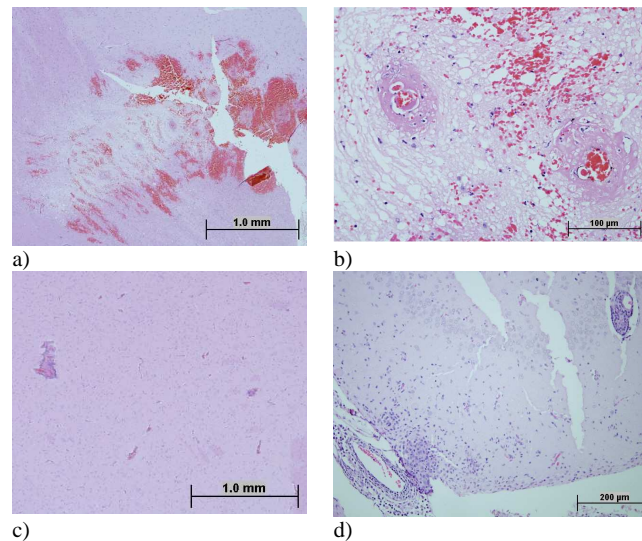


Fig 1. Sections of brain tissue with foci of haemorrhage and malacia (a and b)), and perivascular mononuclear cell cuffs (c) and d)). Clefts in the tissues are processing artefacts H & E

COMMENTS

The lesions in the optic nerve and brain are most suggestive of an acute to subacute viral infection. Eosinophils were not evident within the inflammatory infiltrate within the nervous tissue and there is no other evidence of *Angiostrongylus* sp. or protozoal (*Toxoplasma gondii* or *Neospora caninum*)

infection. The significance of the intranuclear inclusion bodies within the liver of this possum is uncertain.

Non-suppurative meningoencephalitis and choroiditis has been reported in brushtail possums in Australia since 1985, when the clinical syndrome of blindness and ataxia was first described as “wobbly possum syndrome”. A similar set of clinical signs and histological lesions has been identified in brushtail possums in New Zealand, but the relationship between the two syndromes is uncertain. Although there has been speculation that “wobbly possum syndrome” in Australia is likely to be associated with a viral pathogen, no aetiological agent has yet been identified.

REFERENCES (Abstracts on file)

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