

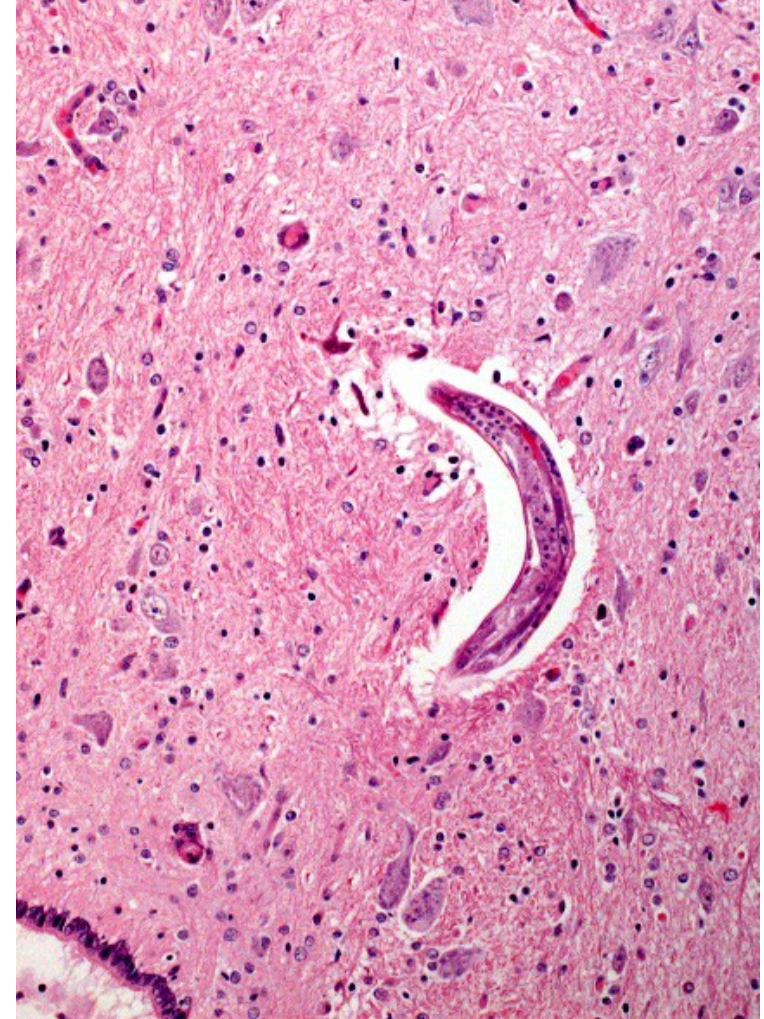
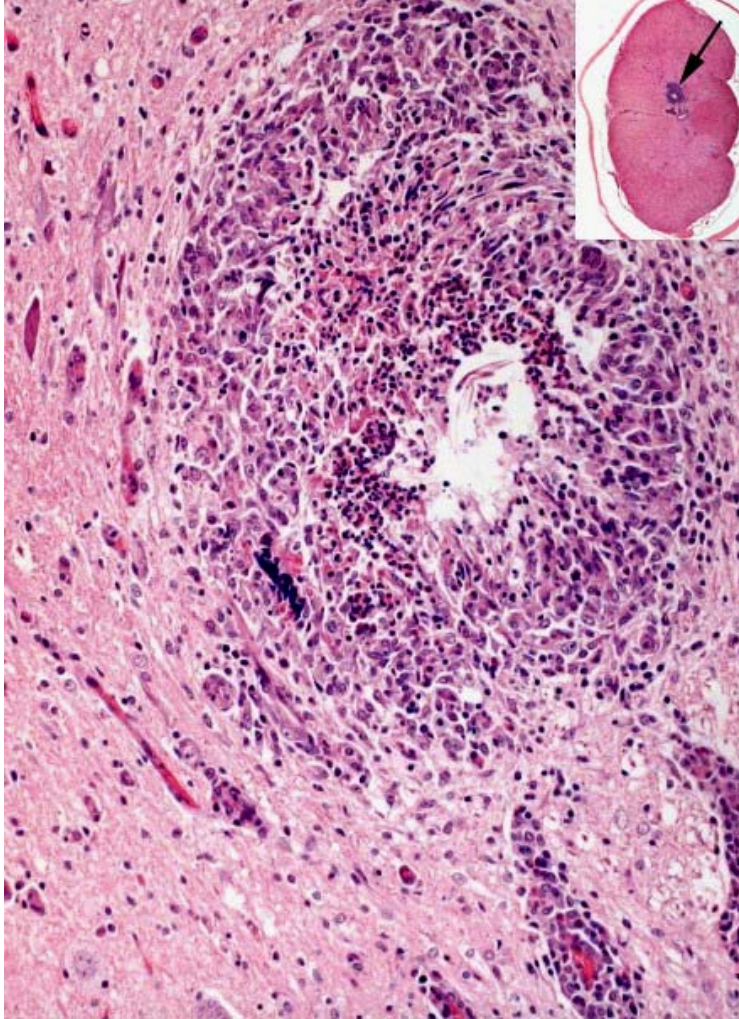
**Case 6.1 –Cerebrum of a pig – changes seen in image #3 were widespread, while those seen in images #1 and #2 were restricted to the pyriform lobe. Review**

**1) – Significant abnormalities include: Images #1&#2 – eosinophilic neurons with multiple, variably-sized dark perineuronal “blebs”; some palor of the neuropil with prominent perivascular and perineuronal spaces. Images #1& #3 – mononuclear cells within and around vessel walls, with a few pyknotic nuclei.**

**2) – Image #2 illustrates what was known in old parlance as “Golgi incrustation“. In fact it is an occasional manifestation of ischemic neuronal degeneration**

**3) – An acceptable MDx could be “Cerebral vasculitis, subacute with associated ischemic neuronal degeneration“. The diagnosis in this case is Classical Swine Fever. A major DDx would be Malignant Catarrhal Fever.**



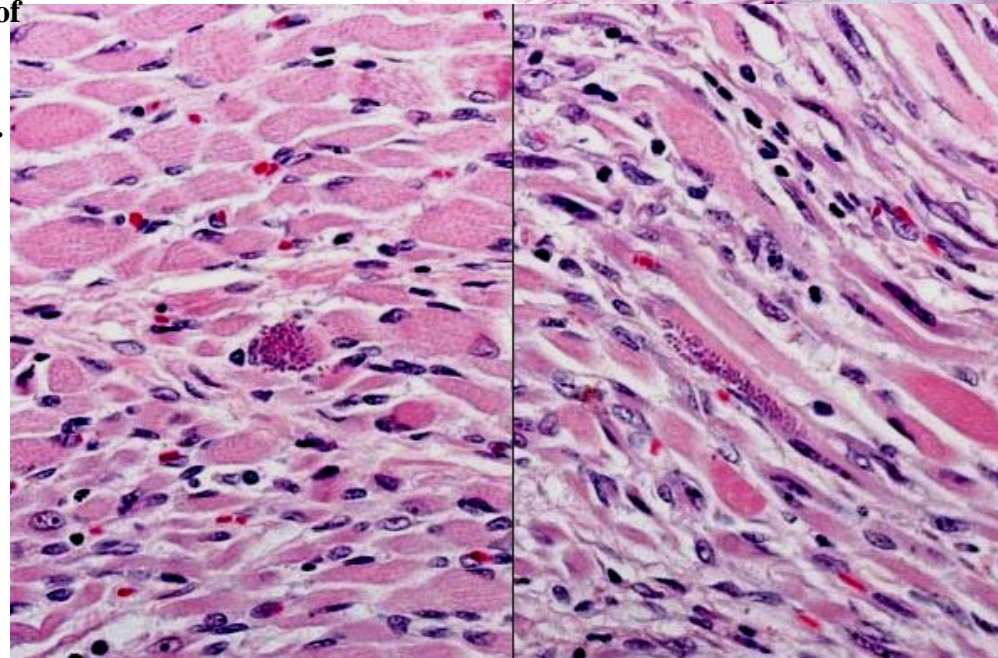
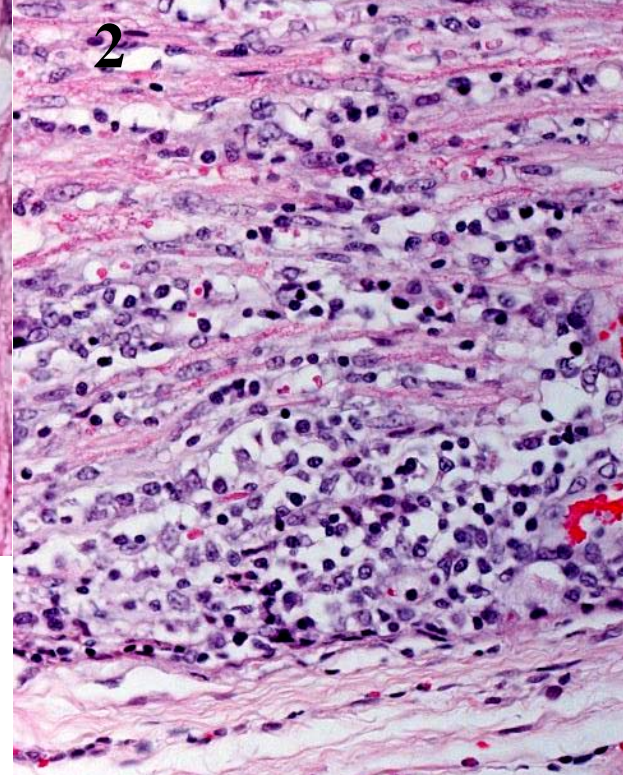
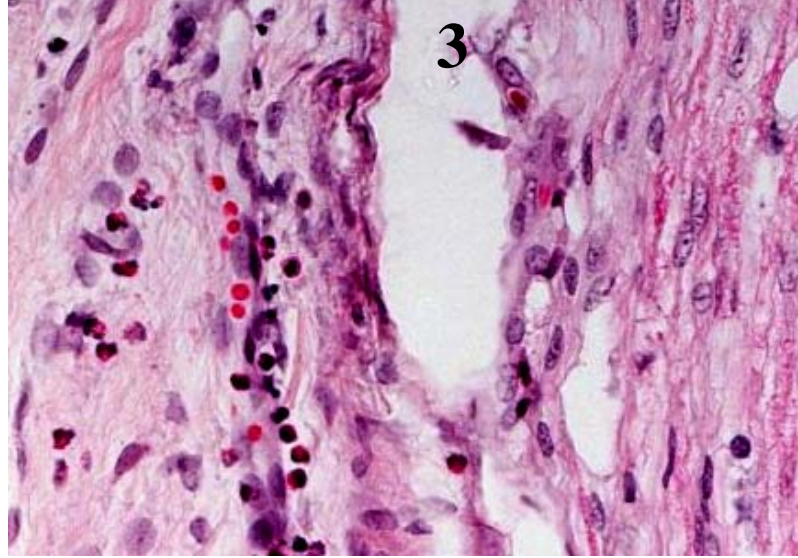
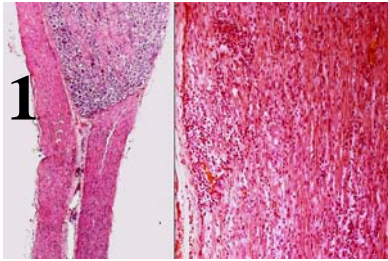


**Case 6.2 – Spinal cord of a dog. Similar lesions were present at varying intensity at many levels.**

**Review – with supplementary image on the right.**

- 1) – Abnormalities evident comprise: A focus of inflammation adjacent to the central canal, with a central core of neutrophilic and eosinophilic infiltration surrounded by a zone of macrophages which includes some giant cells. In the center there is a fragment of foreign material. Nearby blood vessels are cuffed by a similar mix of inflammatory cells.**
- 2) – An acceptable MDx could be “Myelitis, subacute, multifocal, pyogranulomatous and eosinophilic with intralesional nematode larval debris“. The extra image provided here reveals a viable nematode larva at another site. Note the lack of reaction.**
- 3) – A likely aetiology for verminous myelitis in a dog is *Parastrongylus* (formerly *Angiostrongylus*) *cantonensis* larva migrans, which was the Dx in this case. Interestingly, while eosinophils are usually numerous in the meninges, they are more typically sparse in the parenchymal granulomas, but not so in this instance.**





### Case 6.3 – Nerve tissue from a dog.

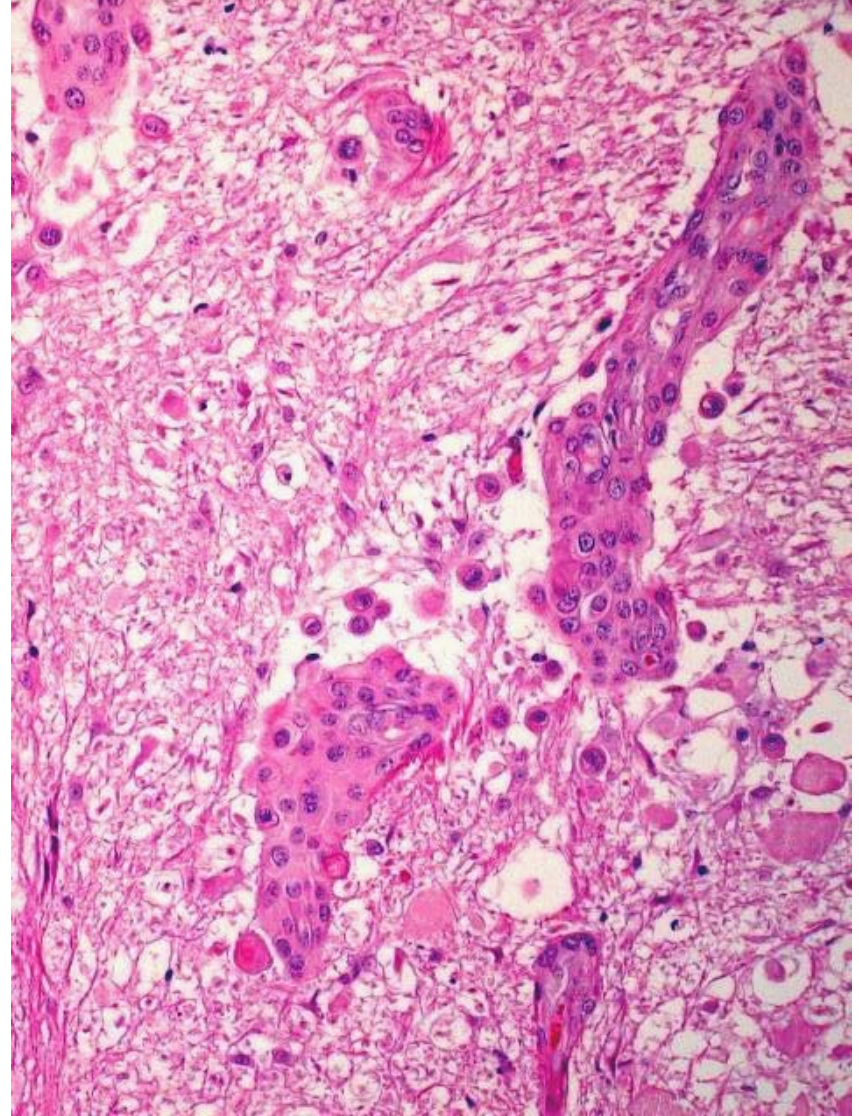
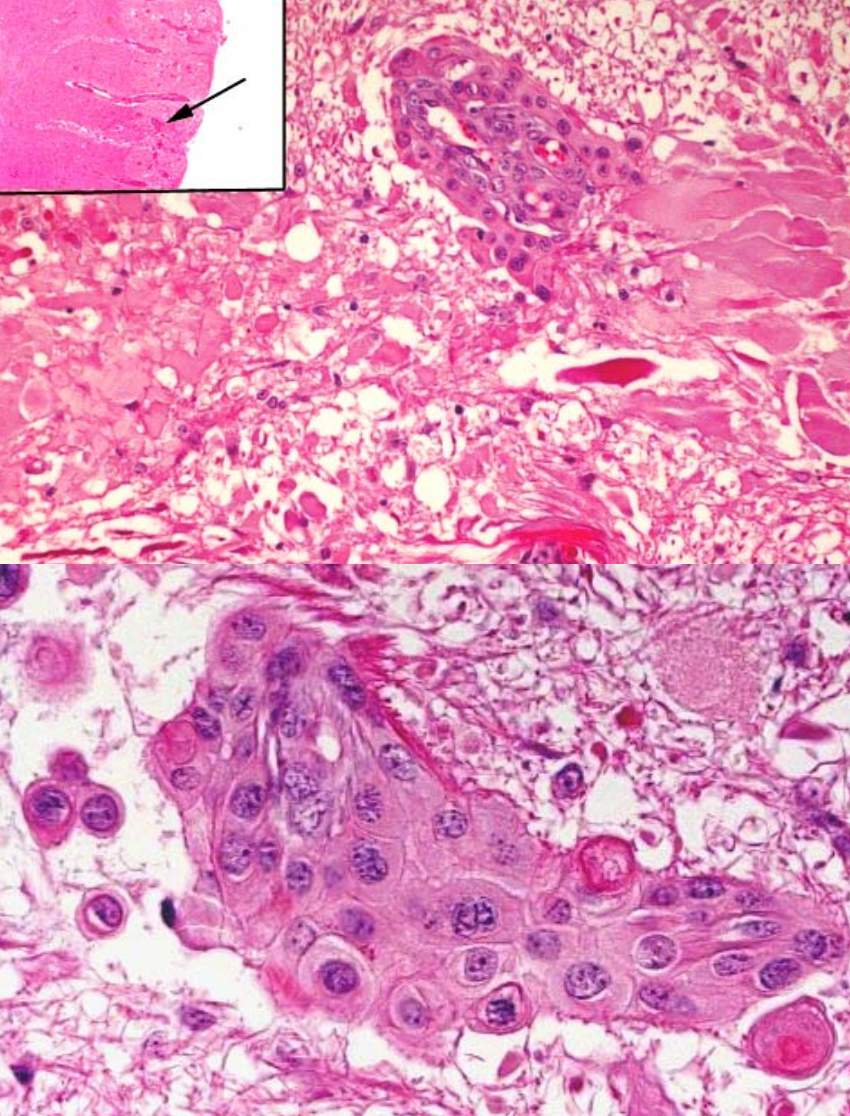
Review – with supplementary image - muscle tissue

1) – The anatomical site is identifiable in image #1 as a spinal nerve root with associated dorsal root ganglion. There are multiple foci of cellular infiltration with associated destruction of myelin and axons. Infiltrating cells are mostly lympho-histiocytic, but some eosinophils are present, particularly in the epineurium (image #3).

2) – The basic pathologic process is multifocal subacute non-suppurative inflammation. An acceptable MDx could be “Ganglioradiculoneuritis, subacute, multifocal, lympho-histiocytic and eosinophilic”.

3) - The likely aetiology is highlighted in the extra image which shows skeletal myocytes from this case, containing protozoan organisms. Positive identification of the organism required immunocytochemistry or ultrastructural analysis. In this case it was identified as *Neospora caninum*.



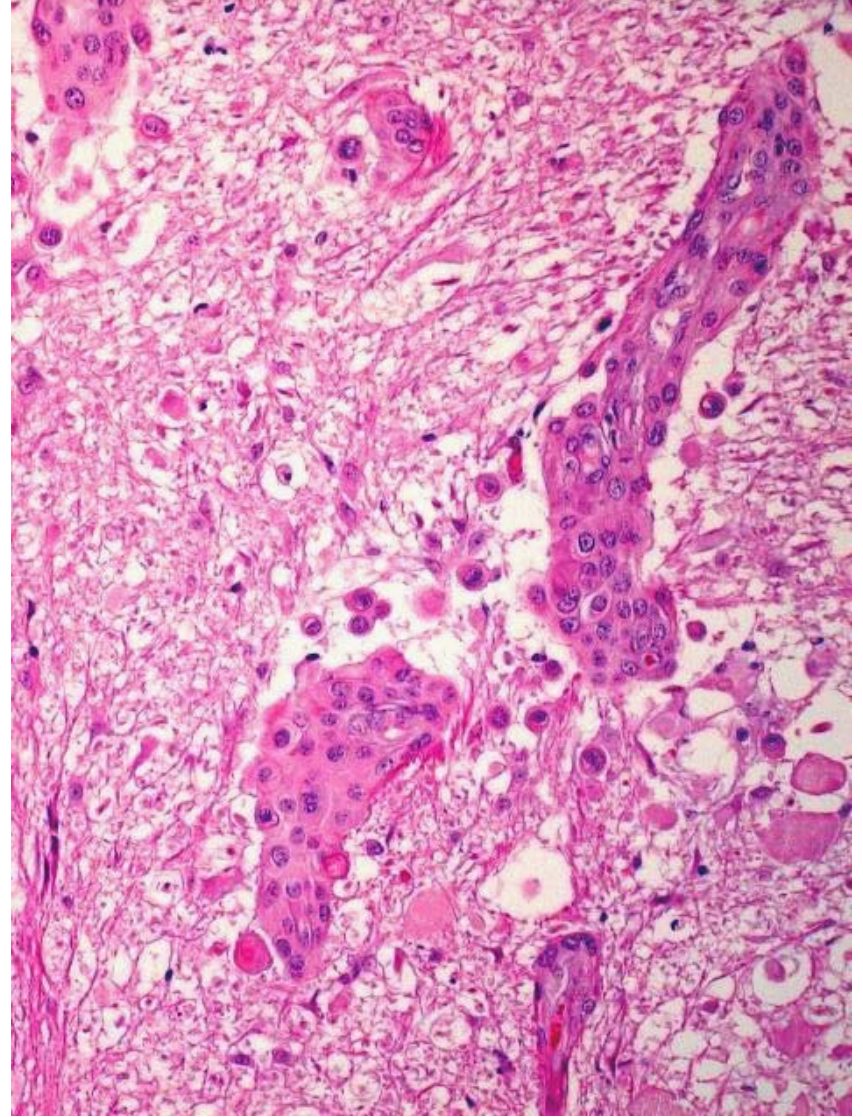
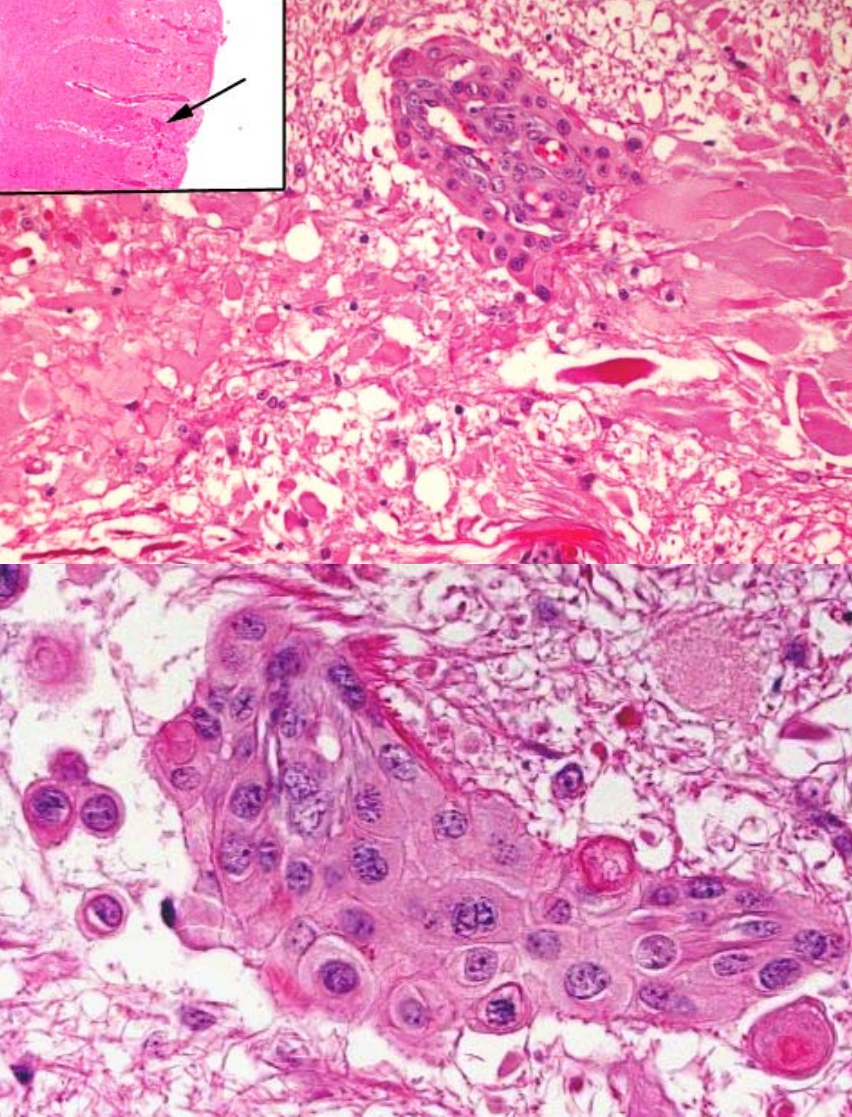


## Case 6.4 – Caudal brainstem from a cow

### Review

- 1) – Significant features include: 1- mildly pleomorphic epithelioid cells, in cords and clusters closely associated with perforating blood vessels, and also occurring singly. Some cells have fibrillar eosinophilic material in their cytoplasm (keratinization). 2- numerous swollen eosinophilic axonal segments. 3- Focal arrays of densely eosinophilic astrocytic fibres adjacent to some cell clusters
- 2) – Pathologic processes are invasive epithelial neoplasia with keratinocytic differentiation, acute ischemic axonal degeneration and fibrillary astrocytosis. (continued next slide)





(continued from previous slide)

3) – A reasonable MDx would be “metastatic squamous cell carcinoma”

4) - A significant feature of the clinical history in this case was prior removal of one eye for ocular SCC.

**Comment:** SCC metastatic to the brain of a bovine is most likely to be primary in the eye, or perhaps a nasal sinus. Malignant cells which gain access to the subarachnoid space can potentially implant anywhere in the brain or spinal cord.



**Case 6.5 –Young adult dog. Diffuse symmetrical thickening of spinal nerves and vago-sympathetic trunk, which is the sample illustrated**

**Review – with supplementary image – lymph node**

- 1)– Changes to nerve structure include: marked disorganization with a paucity of myelinated axons; some presumptive intact “naked“ axons; some presumptive endoneurial fibrosis; marked expansion of the interstitium which appears “empty“ and contains moderate numbers of vacuolated macrophages;**
- 2) – Possible interpretations: an extensive non-inflammatory demyelinating/degenerative process. Interstitial expansion could reflect oedema or the accumulation of some substance extracted by processing. Vacuolated macrophages could reflect a storage process. This is reinforced by their presence in large numbers in the lymph node sinuses.**
- 3) – An acceptable MDx could be“neuropathy, demyelinating, chronic with prominent vacuolated macrophages. This is a case of Fucosidosis in an English Springer Spaniel.**  
**Comment: Lysosomal storage diseases which involve peripheral nerve demyelination include Fucosidosis and Globoid Cell Leukodystrophy**

