WSC 2025-2026
Conference 18, Case 1
Tissue from a sheep.

MICROSCOPIC DESCRIPTION: Cerebellum, brainstem, and cervical spinal cord: Sections from these areas are submitted for examination, and all are similar, with the severity of lesions in this order cervical spinal cord>brainstem>cerebellar white matter. **(1pt.)** Within each section, there are multifocal areas of cellular infiltration, rarefaction and necrosis **(1pt.)** of white matter, and within the cervical spinal cord, the inflammation is multifocally present in the grey matter as well. This area is infiltrated by low to moderate numbers of viable and degenerate neutrophils **(1pt.)**, often forming small clusters of lytic necrosis (microabscesses) **(1pt.)** admixed with cellular debris and small amounts of edema and rare hemorrhage **(1pt.)** Within areas of suppurative inflammation, there are low numbers of dilated myelin sheaths **(1pt.)** and dilated axons (spheroids) **(1pt.)** which are often abutted or surrounded by neutrophils. **(1pt.)** Neurons in areas of inflammation are either swollen and pale (degenerating) (1pt.), or shrunken and hypereosinophilic with pyknotic nuclei (necrosis) **(1pt.)** and surrounded by glial cells and neutrophils. Vessels in areas of inflammation are surrounded by several layers of neutrophils which are often transmigrating the wall as well as edema **(1pt.)**; and in adjacent areas are surrounded by 3-5 layers of lymphocytes, macrophages, and fewer lymphocytes and plasma cells. **(1pt.)** A similar population of lymphocytes and macrophages expands the meninges, multifocally as well. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: 1. Cervical spinal cord: Meningomyelitis**(1pt.)**, suppurative, multifocal, moderate, with microabscesses. **(1pt.).**
2. Brainstem and cerebellar white matter: Leukencephalitis **(1pt.)**, suppurative, multifocal, mild to moderate, with microabscesses **(1pt.)** and mild to moderate lymphohistiocytic meningitis

Cause: *Listeria monocytogenes* **(3pt.)**

O/C: **(1pt.)**

WSC 2025-2026
Conference 18, Case 2
Tissue from a dog.

MICROSCOPIC DESCRIPTION: Cerebrum: Within the cerebral gray matter **(1pt)**, blood vessels exhibit one or more of the following: perivascular hemorrhage **(1pt)** with fibrin polymerization, perivascular cuffing **(1pt)** by one to three layers of neutrophils **(1pt)** and lymphocytes **(1pt)**, expansion of the wall by extruded eosinophilic protein and necrotic cellular debris (vasculitis) **(1pt)** partial to totally luminal occlusion by fibrin thrombi, or total mural necrosis with loss of differential staining. **(1pt)**. Endothelial cells **(1pt)** often contain a prominent basophilic intranuclear **(1pt)** viral inclusion **(1pt)** which occasionally enlarges the nucleus. Neutrophils extend into the adjacent parenchyma **(1pt)** where they are admixed with hemorrhage and cellular debris. In areas of hemorrhage and vascular damage, neurons are occasionally degenerate (loss of differential staining) **(1pt).** There is infiltration a of the adjacent meninges by moderate numbers of macrophages, neutrophils, lymphocytes, and rare plasma cells, and vascular changes which are similar to, but not as severe as seen within the neuropil. **(1pt)**

MORPHOLGIC DIAGNOSIS: Cerebrum: Vasculitis **(1pt)**, neutrophilic **(1pt)** and lymphocytic, multifocal to coalescing, marked, with thrombosis, mild lymphohistiocytic meningitis **(1pt)** and intraendothelial intranuclear viral inclusions. **(1pt)**

CAUSE: Canine adenovirus-1 (This one is CAV-2, interestingly) **(2pt)**

O/C: **(1pt)**

WSC 2025-2026
Conference 18, Case 3.
Tissue from a dog.

MICROSCOPIC DESCRIPTION: Cerebrum: One section of cerebrum is submitted for examination. The lateral ventricle is mildly dilated. **(1pt.)** Throughout all layers but most predominantly within the ependymal lining, but extending into the periventricular and subcortical gray matter and focally into the internal capsule **(1pt.)**, there are areas of neuropil rarefaction **(1pt.)** which are infiltrated by moderate numbers of macrophages **(1pt.)**, neutrophils **(1pt.)**, lymphocytes **(1pt.)** and plasma cells which extend into the surrounding neuropil and are admixed with edema **(1pt.)** and small amount of cellular debris. Infalmed areas often have increased numbers of astrocytes and activated microglia (gliosis). Vessels in this area are cuffed by 3-8 layers of similar inflammatory cells. **(1pt.)** Some vessels contain numerous inflammatory cells within their wall and there is extensive edema into the surrounding tissue (vasculitis). **(1pt.)** Scattered throughout these areas are numerous 20um **(1pt.)** diameter protozoan cysts **(1pt.)** containing numerous 2um round zoites. **(1pt.)** Within the inflamed and rarefied area within the internal capsule, there are large numbers of Gitter cells, macrophages, lymphocytes and plasma cells, dilated axon sheaths **(1pt.)** and swollen eosinophilic axons (spheroids). **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Cerebrum, grey and white matter: Meningoencephalitis **(1pt.)**, necrotizing and lymphohistiocytic **(1pt.)**, multifocal to coalescing, marked with vasculitis and numerous apicomplexan cysts. **(1pt.)**

CAUSE(S): *Toxoplasma gondii* (*Neosporum caninum* OK, too) **(2pt.)**

O/C: **(1pt.)**

WSC 2025-2026
Conference 18, Case 4.
Tissue from a calf.

MICRSCOPIC DESCRIPTION: Cerebellum: There is multifocal loss **(1pt)** of Purkinje cells and neurons within the granular cell layer **(1pt)**. Multifocally, the cytoplasm of Purkinje cells **(1pt)** and neurons within the folial white matter **(1pt)** and rarely within the granular cell layer **(1pt)** are moderately to markedly expanded **(1pt)** by the presence of numerous small discrete clear cytoplasmic vacuoles **(1pt)**, which occasionally surround a central area of normal cytoplasm. Empty baskets are present within the Purkinje cell layer. **(1pt)** Astrocytes within the granular cell layer are often reactive. **(1pt)** There are low to moderate numbers of swollen axons (spheroids **(1pt)** and torpedoes **(1pt)** based on how they are cut) within the granular cell layer **(1pt)** and to a lesser extent within both the molecular layer and folial white matter. T**(1pt)**

MORPHOLOGIC DIAGNOSIS: Cerebellum, Purkinje cells and neurons in the cerebellar white matter: **(1pt)** Cytoplasmic vacuolation **(1pt)**, diffuse, severe, with Purkinje cell loss **(1pt)**, and spheroid formation **(1pt)**

Name the condition: Alpha-mannosidosis (Any lysosomal storage disorder other than globoid cell leukodystophy or ceroid lipofuscinosis would be okay…) **(2pt)**

O/C: **(1pt)**