

WSC 2022-2023  
Conference 6, Case 1  
Tissue from an ox.

MICROSCOPIC DESCRIPTION: Adrenal gland. Multifocally and randomly, **(1pt)** affecting all three layers of the adrenal cortex **(1pt)** and multifocally extending into the underlying medulla **(1pt)**, there are areas of necrosis and hemorrhage which range up to 2mm in diameter. Within the necrotic areas, adrenocortical cells are fragmented, disassociated, shrunken, and pale with loss of differential staining **(1pt)** (coagulative necrosis) **(1pt)** and at the periphery are vacuolated **(1pt)** and swollen (degeneration) **(1pt)**. Nuclei of the degenerating and necrotic cortical cells at the periphery of necrotic areas (and to a lesser extent in the necrotic area) are expanded due to the presence of a single 2-6µm homogenous eosinophilic intranuclear **(1pt)** viral inclusion **(1pt)** which peripheralizes the chromatin and is occasionally surrounded by a clear halo. **(1pt)** There are rare multinucleated syncytial cells **(1pt)**, often with intranuclear inclusions as well. The necrotic areas contain infiltrating viable and necrotic neutrophils **(1pt)** (primarily at the periphery) admixed with cellular debris and hemorrhage, and vascular spaces in the adjacent unaffected tissue contain numerous neutrophils as well. Rarely, vessels adjacent to necrotic areas contain occlusive and non-occlusive fibrin thrombi. **(1pt)** There are aggregates of low to moderate numbers of lymphocytes, and macrophages within the adrenal capsule. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Adrenal gland, cortex: Adrenitis, necrohemorrhagic **(1pt)**, multifocal to coalescing, moderate, with intranuclear viral inclusions **(1pt)** and viral syncytia **(1pt)**.

CAUSE: Bovine herpesvirus-1 **(2pt)**

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

WSC 2022-2023  
Conference 6, Case 2  
Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Cerebrum, section taken at the level of the internal capsule: Throughout the section, neurons **(1pt.)** are swollen **(1pt.)** up to 50um **(1pt.)** with foamy amphophilic cytoplasm **(2pt.)** which often displaces the nucleus **(2pt.)** and Nissl substance **(1pt.)** to the periphery. Small numbers of individual neurons are shrunken, with deeply basophilic clumped chromatin material and with variable degree of cytoplasmic hypereosinophilia (necrosis) **(1pt.)** Many glial cells **(1pt.)** are also expanded by vacuolated which displaces the nucleus to the periphery. Within the white matter of the internal capsule, there are few dilated myelin sheaths **(1pt.)** and fewer swollen axons (spheroids) **(2pt.)**.

**MORPHOLOGIC DIAGNOSIS:** Cerebrum, neurons and glia: Vacuolation **(1pt.)**, cytoplasmic **(1pt.)**, diffuse, moderate, with mild gliosis, and multifocal spheroid formation. **(1pt)**

**NAME THE DISEASE:** GM2-Gangliosidosis (the following are also acceptable: GM1-gangliosidosis, sphingomyelinosis, galactosialidosis) **(3pt.)**

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

WSC 2022-2023  
rConference 6, Case 3  
Tissue from a cat.

**MICROSCOPIC DESCRIPTION:** Diencephalon: The lateral and third ventricles are dilated. Multifocally and irregularly expanding the periventricular parenchyma of the lateral and third ventricle **(1pt.)** and the mesencephalic aqueduct, the associated periventricular spaces, and the choroid plexus **(1pt.)** of the third ventricle are innumerable neutrophils **(1pt.)**, macrophages **(1pt.)**, lymphocytes **(1pt.)** and fewer plasma cells admixed with hemorrhage, small amounts of fibrin, which multifocally extends along Virchow Robin's spaces down into the meninges at the base of the brain. There is segmental effacement of the ventricular ependyma **(1pt.)**, and the ventricles are expanded by a high-protein transudate **(1pt.)**. There is periventricular rarefaction and loss of the neuroparenchyma (liquefactive necrosis) **(1pt.)** with replacement by variable amounts of eosinophilic proteinaceous fluid. Within this region, veins are often hypereosinophilic and contain necrotic smooth muscle cells, neutrophils, and cellular debris (phlebitis) **(1pt.)** and are surrounded by the inflammatory infiltrate previously described. Within the adjacent neuroparenchyma there is mild to moderate gliosis **(1pt.)** composed of scattered reactive and gemistocytic astrocytes, gitter cells, and microglia. Neurons within the cerebral gray matter as well as in the hippocampus are occasionally shrunken, angular, and hypereosinophilic with pyknotic nuclei (necrosis) **(1pt.)** and rarely bordered by one or more glial cells. There is spongiosis **(1pt.)** of the periventricular white matter, as well as the internal capsule, with scattered dilated myelin sheaths and rare swollen, hypereosinophilic axons (spheroids) or Gitter cells. There are aggregates of crystalline mineral **(1pt.)** within the endothelial lining and walls of vessels surrounding the ventral aspects of the third ventricle.

**MORPHOLOGIC DIAGNOSIS:** Diencephalon: Ventriculitis **(1pt.)** and periventriculitis, pyogranulomatous **(1pt.)** and lymphoplasmacytic, diffuse, severe, with hydrocephalus, phlebitis **(1pt.)**, choroid plexitis **(1pt.)**, periventricular necrosis and edema, multifocal meningitis, and mineralization **(1pt.)**.

**CAUSE:** Mutated feline coronavirus **(1pt.)**

**CONDITION:** Feline Infectious Peritonitis (FIP) **(1pt.)**

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

WSC 2021-2022,  
Conference 6, Case 4.  
Tissue from a hedgehog.

**MICROSCOPIC DESCRIPTION:** Cross section of head, nasal cavity, and salivary gland: Arising from the oral mucosa **(1pt)**, and infiltrating dorsally into the palatal soft tissues and skeletal muscle and effacing the facial bones **(1pt)**, and infiltrating the sinus with unilateral effacement of the epithelium and compromise of the lumen **(1pt)**, there is an multilobular, unencapsulated, infiltrative, poorly demarcated, moderately cellular neoplasm. **(1pt)** The neoplasm is composed of polygonal epithelial cells **(1pt)** arranged in cords and trabeculae **(1pt)** on a moderate fibrous stroma **(1pt)**. Neoplastic cells have distinct cell borders with a moderate amount of finely granular eosinophilic cytoplasm. **(1pt)** Nuclei are round with finely stippled chromatin and 1-3 basophilic nucleoli. **(1pt)** Anisocytosis and anisokaryosis are moderate, and mitoses average 12 per 2.37mm<sup>2</sup> field. **(1pt)** There is extensive single and regional necrosis within the neoplasm. **(1pt)** There is hyperplasia of the oral mucosa beneath the neoplasm, infiltration, atrophy, and effacement of facial skeletal muscle **(1pt)**, and infiltration of facial adipose tissue. **(1pt)** There is mild lymphocytic inflammation within infiltrated tissue, including fat, salivary ducts, and the nasal glands, **(1pt)** and mild periosteal proliferation of facial bones in proximity to the neoplasm. **(1pt)**

**MORPHOLOGIC DIAGNOSIS:** Cross section of head: Squamous cell carcinoma. **(4pt)**

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

