

WSC 2021-2022

Conference 5, Case 1.

Tissue from a sheep.

(This slide is a little pink, so inclusions are hard to find).

MICROSCOPIC DESCRIPTION: Cerebrum at level of thalamus: There is marked cuffing **(1pt.)** of larger diameter vessels throughout all layers of the cortex **(2pt.)** by up to 6 layers of lymphocytes **(2pt.)**, macrophages **(1pt.)**, and few plasma cells **(1pt.)** and neutrophils. **(1pt.)** Inflammatory cells do not extend into the surrounding neuropil. **(1pt.)** There is multifocal mild to moderate gliosis of the grey matter **(1pt.)** in areas in which perivascular inflammation is at its most severe. Scattered throughout these areas, there are occasionally shrunken neurons which are surrounded by few glial cells (necrosis) **(1pt.)**, and rare neurons contain one or more round intranuclear viral inclusions. **(1pt.)** Vessels within the meninges **(1pt.)** are or occasionally cuffed by multiple layers of lymphocytes and histiocytes and similar cells occasionally or present diffusely and expand the meninges. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Cerebrum: Meningoencephalitis **(1pt.)**, lymphohistiocytic **(1pt.)**, diffuse, moderate, with rare neuronal necrosis **(1pt.)** and intranuclear viral inclusions. **(1pt.)**

CAUSE: Ovine bornavirus (rabies virus and ovine flavivirus OK too.) **(1pt.)**

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

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Conference 5, Case 2.

Tissue from a dog.

MICROSCOPIC DESCRIPTION: Cerebellum and brainstem. Multifocally within the cerebellar white matter and extending outward into the folial white matter, **(1pt.)** there are extensive and coalescing areas of spongiosis **(1pt.)**. Within these areas, myelin sheaths are dilated up to 50um and occasionally coalesce (digestion chambers) **(1pt.)**, and there is mild gliosis within this area **(1pt.)**. In more severely affected areas, there is rarefaction of the intervening white matter **(1pt.)** with infiltration of numerous foamy Gitter cells **(1pt.)** ranging up to 20um, increased numbers of hypertrophic microglia, and occasional astrocytes with large nuclei and abundant eosinophilic cytoplasm**(1pt.)** (gemistocytic astrocytes) **(1pt.)** (demyelination) **(1pt.)**. Few Gitter cells are present within myelin sheaths in this area. Multifocally, rare astrocytes **(1pt.)** contain a single 2-3um diameter eosinophilic intranuclear inclusion **(1pt.)**. Adjacent to areas of folial demyelination, Purkinje cells are often lost **(1pt.)** and numbers of granular cells are decreased up to 50%. **(1pt.)** Blood vessel endothelium within the inflamed areas is hypertrophic.

MORPHOLOGIC DIAGNOSIS: Cerebrum: Demyelination **(1pt.)**, multifocal to coalescing, marked, with gliosis **(1pt.)**, Purkinje and granular cell loss, and astrocytic intranuclear inclusions . **(1pt.)**

CAUSE: Canine morbillivirus **(2pt.)**

NAME THE CONDITION: Old dog encephalitis **(1pt.)**

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

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Case 3. Tissue from howler monkey.

(This slide was only scanned by the contributor to 20X).

MICROSCOPIC DESCRIPTION: Liver: There is marked, diffuse centrilobular **(1pt.)** and midzonal **(1pt.)** necrosis **(1pt.)** of hepatocytes characterized by disorganization and individualized hepatocytes **(1pt.)** composed of shrunken, hypereosinophilic cells with pyknotic nuclei or abundant, eosinophilic, granular to globular cellular and karyorrhectic debris. **(1pt.)** There are scattered intracytoplasmic, intensely eosinophilic (acidophilic), irregularly round, 5-25 um diameter inclusions **(1pt.)** (Councilman bodies or cytosegrosomes) **(1pt.)** as well as remnant lipid droplets. **(1pt.)** Within necrotic areas, Kuffer cell nuclei are hypertrophic **(1pt.)** and the area is infiltrated with few viable and necrotic neutrophils. **(1pt.)** Remaining centrilobular and periportal hepatocytes have slightly basophilic vacuolated cytoplasm, vesiculate nuclei, and a prominent central nucleolus, and their cytoplasm contains one or more lipid vacuoles. **(1pt.)** Sinusoids throughout the section contain increased numbers of circulating neutrophils. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Liver: Hepatocellular degeneration and necrosis (necrotizing hepatitis OK, Drs. Cullen and Weisbrode!) **(1pt.)**, centrilobular and midzonal **(1pt.)**, diffuse, severe, with Councilman bodies **(1pt.)** and intracytoplasmic lipid. **(1pt.)**

NAME THE DISEASE: Yellow fever **(2pt.)**

Cause: Primate flavivirus **(1pt.)**

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

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Case 4. Tissue from an ox.

Lung: There is diffuse atelectasis of alveoli throughout the submitted tissue. **(1 pt.)** Alveoli are diffusely filled and often expanded by large numbers of neutrophils **(1 pt.)** and foamy alveolar macrophages **(1 pt.)** and rare multinucleated giant cell macrophages, with small amounts of cellular debris, hemorrhage, edema and fibrin, to the point that septal architecture is obscured. Alveolar septa, when discernable, are expanded **(1 pt.)** by large numbers of circulating neutrophils **(1 pt.)** as well as hypertrophic intraseptal macrophages, edema and patchy Type II pneumocyte hyperplasia. **(1 pt.)** Bronchioles are filled with reflux from surrounding alveoli **(1 pt.)**, including large numbers of neutrophils admixed with fewer macrophages and abundant cellular debris. **(1 pt.)** Lining epithelium is intact **(1 pt.)**, and surrounding fibrous connective tissues and rarely the mucosa is infiltrated by neutrophils. **(1 pt.)** These changes are seen in airways of all sizes, but their severity is inversely proportional to the size of the airways. **(1 pt.)** There is marked BALT hyperplasia surrounding medium- and large caliber airways. **(1 pt.)** Interlobular septa is diffusely moderately edematous and lymphatics are dilated. **(1 pt.)** Similar but less severe changes are present within the pleura.

MORPHOLOGIC DIAGNOSIS: Pneumonia, bronchointerstitial **(1 pt.)**, suppurative **(1 pt.)** and histiocytic diffuse, severe, with marked BALT hyperplasia. **(1 pt.)**

CAUSE: Bovine coronavirus (bovine parainfluenza virus and *Histophilus somni* also acceptable.) I am not giving credit for BRSV (no inclusions or syncytia), bovine influenza or mycoplasmosis or (no necrosis in the airwayshgh)
(3 pt.)

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