

WSC 2015-2016, Conference 8
Case 1. Tissue from a horse.

MICROSCOPIC DESCRIPTION: Liver: Both sections contain multiple, often confluent areas of coagulative necrosis **(1 pt.)** (infarcts) **(1 pt.)**, in which hepatocytes, as well as structures within portal areas, have lost differential staining, but maintain structural integrity **(1 pt.)**. Sinusoids within these areas, as well as portal vessels lack viable erythrocytes **(1 pt.)**, and erythrocyte outlines are often stippled with a bright yellow pigment (hematoidin) **(1 pt.)**. Areas of coagulative necrosis are outline by a basophilic rim of cellular debris (lytic necrosis) **(1 pt.)**, and centrifugally, degenerate neutrophils **(1 pt.)**, hemorrhage and polymerized fibrin within sinusoids **(1 pt.)**, as well as small aggregates of histiocytes and hypertrophic Kupffer cells **(1 pt.)**. Within these areas, hepatocytes are mildly to moderately swollen with numerous small cytoplasmic vacuoles (hydropic degeneration) **(1 pt.)** and occasional cytoplasmic lipid droplets (degeneration) **(1 pt.)**. There is marked congestion within areas containing viable hepatocytes. Portal areas are markedly expanded by edema **(1 pt.)** and multifocal hemorrhage infiltrated by low to moderate numbers of neutrophils, histiocytes, admixed with likely pre-existent lymphocytes and plasma cells. Sublobular and lobular veins are often occluded by thrombi of polymerized fibrin of variable density **(1 pt.)**.

MORPHOLOGIC DIAGNOSIS: Liver: Necrosis, multifocal to coalescing with thrombosis and extracellular bacilli. **(3 pt.)**

CAUSE: *Clostridium novyi* **(3 pt.)**

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

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Case 2. Tissue from an ox.

(Great example, but not much of a descriptive slide.)

MICROSCOPIC DESCRIPTION: Brainstem: Diffusely, vessels within the grey **(1pt.)** and white **(1pt.)** matter are cuffed by variable combinations and concentration of lymphocytes **(1pt.)** and histiocytes **(1pt.)** and fewer plasma cells which range from a single cell to up to 10 cell layers thick **(1pt.)**. The most prominent perivascular cuffs are within the grey matter **(1pt.)**. Similar changes are present around meningeal vessels as well **(1pt.)**. Affected vessels are lined by hypertrophied endothelial cells. There is diffuse mild to moderate gliosis **(2pt.)** of the grey matter. Multifocally, within the cytoplasm of large neurons of the brainstem nuclei **(1pt.)**, there are numerous 2-3 irregularly round eosinophilic intracytoplasmic viral inclusions **(1pt.)** (Negri bodies) **(2pt.)**

MORPHOLOGIC DIAGNOSIS: Brainstem: Meningoencephalitis, non-suppurative, diffuse, mild to moderate, with gliosis and numerous neuronal intracytoplasmic viral inclusions . **(3 pt)**

CAUSE: Bovine rhabdovirus (lyssavirus OK) **(3pt)**

O/C: (1pt)

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Case 3. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Cerebrum, thalamus: Within the cerebrum, extending along the meninges (1pt) and compressing the overlying thalamus is an unencapsulated, expansile, densely cellular, well demarcated neoplasm (1pt) composed of three cellular populations (1pt). The neoplasm is variably composed of sheets and lobules (1pt) of neoplastic cells which are subdivided by a moderate fibrous to fibrovascular stroma (1pt) which in some areas subdivides neoplastic cells into discrete nests. The majority of the neoplasm is composed of nests (1pt) of neoplastic cells are irregularly round with a moderate amount of a finely granular amphophilic to eosinophilic cytoplasm and indistinct cell borders (1pt). Nuclei are round, often eccentrically placed, with coarsely stippled chromatin and one to three small basophilic nucleoli. There is mild anisokaryosis. The mitotic rate averages 5-8 per 400X hpf (1pt). In many areas, these cells transition into a second population (1pt), in which their increased amount of cytoplasm is more densely eosinophilic and cytoplasm often contains single large discrete vacuoles (1pt) which peripheralize and compress the nucleus. A third population of cells (1pt) is scattered among these and forms trabeculae and tubules of cohesive epithelioid cells (1pt) which range from cuboidal to tall columnar with centrally placed nuclei with finely stippled chromatin and occasionally exhibit squamous differentiation (1pt). There are large areas of lytic necrosis scattered throughout the neoplasm (1pt). At the advancing edge of the neoplasm, the neoplasm fills and expands Virchow Robins spaces, and in areas of compression of the adjacent white matter, there are moderate numbers of dilated myelin sheaths and spheroids (1pt), as well as mild gliosis primarily in compressed gray matter. (1pt).

MORPHOLOGIC DIAGNOSIS: Cerebrum, thalamus: Suprasellar germ cell tumor (4pt)

O/C: (1pt)

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CASE 4. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Kidney: There are mild changes at all level of the nephron. Glomeruli are segmentally **(1pt)** to globally **(1pt)** hypercellular **(1pt)** and mesangium is expanded **(1pt)** by a brightly eosinophilic protein which also fills and distends Bowman's' space **(1pt)**. Capillary loops are moderate expanded **(1pt)** and rarely fused to Bowman's capsule (synechiae) **(1pt)**. There is mild hypertrophy of parietal epithelium **(1pt)** and thickening of Bowman's' capsule **(1pt)**. Multifocally, the interstitium is expanded by low to moderate numbers of lymphocytes **(1pt)**, and in some areas, moderate fibrosis **(1pt)**. Tubules are multifocally distended with moderate amounts of lacy eosinophilic protein **(1pt)**, and multifocally, tubular epithelium is attenuated **(1pt)**, or focally necrotic **(1pt)** and some tubules contained several mitotic figures within their epithelium **(1pt)**.

MORPHOLOGIC DIAGNOSIS: Kidney: Glomerulonephritis, membranoproliferative, diffuse, mild to moderate with chronic interstitial nephritis. **(3 pt.)**

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