

WSC 2015-2016, Conference 23

Case 1. Tissue from a turkey.

MICROSCOPIC DESCRIPTION: Liver: Randomly and multifocally scattered throughout the section, there are well-defined areas of coagulative necrosis **(2pt)**, in which hepatocellular plate architecture **(1pt)** and differential staining are lost **(1pt)**. Hepatocytes are individualized, rounded up and brightly eosinophilic, **(1pt)** and rarely karyorrhectic **(1pt)**, admixed with small amounts of cellular debris, and rare pyknotic nuclei may be seen in adjacent less affected liver. Portal and sublobular veins occasionally contain partially occlusive fibrinocellular thrombi **(2pt)**, and small amounts of fibrin is often present within sinusoids **(1pt)**. Thrombi often contain colonies of 2-3 um bacilli **(1pt)**; similar bacilli are occasionally present in sinusoids, and within the cytoplasm of Kupffer cells and circulating monocytes. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Liver: Hepatitis, necrotizing, multifocal, moderate with fibrin thrombi and numerous colonies of bacilli. **(4 pt.)**

CAUSE *Erysipelothrix rhusiopathae* **(3pt)**

Name two other organs that may be affected in this animal: Spleen, skin, joints **(1pt)**

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

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Case 2. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Colon **(1pt)**: There is diffuse coagulative **(1pt)** necrosis of the proximal 2/3 of the intestinal mucosa down to the level of the crypts **(1pt)**. Within the necrotic layer, villar architecture is variably maintained, and there is loss of differential staining **(1pt)**. Necrotic tissue is admixed with small amounts of fibrin **(1pt)**, hemorrhage, and abundant bacteria **(1pt)**. Crypts are multifocally dilated **(1pt)** and contain variable amounts of cellular debris and occasionally single or rafts of necrotic enterocytes (crypt abscesses.) **(1pt)** Rare crypts are lined by necrotic enterocytes and contain low to moderate numbers of bacteria. **(1pt)** There are increased numbers of mitotic figures within crypts (crypt hyperplasia) **(1pt)**. The lamina propria contains mildly increased numbers of lymphocytes and plasma cells, with fewer. Infiltrating all levels of the mucosa are numerous round 15-20um amoebae **(2pt)** with granular amphophilic cytoplasm, numerous ingested bacilli, and eccentric nuclei with a prominent karyosome. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Colon, mucosa: Colitis, necrotizing, diffuse, moderate, with numerous amoebic trophozoites. **(3pt)**

CAUSE: *Entamoeba histolytica* **(3pt)**

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

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Case 3. Tissue from a yak.

MICROSCOPIC DESCRIPTION: Kidney: There are changes at all levels of the nephron, but the most severe changes are noted with in the proximal convoluted tubules **(1 pt)**. Proximal tubules show one or more of the following changes: accumulation of protein within their lumina **(1 pt)**, swelling and granularity of cytoplasm (degeneration) **(1 pt)**, tubular ectasia **(1 pt)** with attenuation and basophilia of lining epithelium, epithelial granularity and fragmentation with pyknotic or karyorrhectic nuclei (necrosis) **(1 pt)**, sloughing of necrotic cells into the lumen, and numerous mitotic figures **(1 pt)** in cells which bulge into the tubular lumina. Granular casts **(1 pt)** admixed with cellular debris may be seen in more distal parts of the nephron, often in the deep cortex or medulla. Nuclei often contain one or more hyaline eosinophilic intranuclear inclusions which disperse the chromatin **(2 pt)**. The interstitium is multifocally and moderately expanded by fibrous connective tissue and variable numbers of lymphocytes, plasma cells, and fewer macrophages and neutrophils. **(1 pt)** Within areas of fibrosis, tubules are mildly atrophic **(1 pt)**, with decreased diameter and size of lining epithelium, and increased luminal size. , with an increase in diameter of tubular lumina. There are aggregates of lymphocytes **(1 pt)** with fewer plasma cells scattered throughout the cortex, especially in perivascular areas near the corticomedullary junction, as well as multifocal areas of interstitial hemorrhage. Glomeruli are immature **(1 pt)**, and the mesangium is often mildly expanded by a hyaline eosinophilic protein. There is moderate amounts of refluxed protein within Bowman's space.

MORPHOLOGIC DIAGNOSIS: Kidney, tubules: Degeneration, necrosis, and regeneration, diffuse, marked, with intranuclear hyaline inclusions and mild chronic interstitial nephritis. **(4 pt)**

CAUSE: Lead toxicity. **(2 pt)**

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

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CASE 4. Tissue from a goat.

MICROSCOPIC DESCRIPTION: Cerebrum, section through lateral ventricle: The superficial and submeningeal **(1 pt)** cortex is multifocally fragmented **(1 pt)** in a laminar **(2 pt)** pattern. In most areas, there is neuropil cavitation **(1 pt)** necrosis with only gliovascular strands **(1 pt)** and infiltrating Gitter cells **(1 pt)** remaining. The adjacent neuropil is mildly spongiotic **(1 pt)** and there is gliosis with markedly increased numbers of astrocytes and microglia. In less affected areas, occasional neurons are shrunken and hypereosinophilic with pyknosis (necrosis) **(1 pt)** and occasionally surrounded by one or more lymphocytes (satellitosis). In these hypercellular (but not cavitated) areas, there is mild gliosis **(1 pt)** edema, and glial cells are occasionally pyknotic or karyorrhectic. Vessels within affected areas are often lined by hypertrophied endothelial cells, and perivascular spaces are expanded (edema) **(1 pt)**. The meninges are expanded by clear space and infiltrated by low numbers of macrophages **(1 pt)**.

MORPHOLOGIC DIAGNOSIS: Cerebrum: Neuronal necrosis and loss, cortical, laminar, multifocal to coalescing, with cavitation, spongiosis and gliosis. **(3 pt)**

NAME THE CONDITION: Polioencephalomalacia **(2 pt)**

CAUSE: Thiamine deficiency, lead toxicity, elevated sulfur in diet **(2 pt)**

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