

WSC 2014-2015, Conference 13

Case 1. Tissue from an iguana.

(Note – this is a very unusual lesion and even the moderator was not familiar with so you get a lot of latitude on the morphologic diagnosis.)

**MICRSCOPIC DESCRIPTION:** Liver **(2pt.)**: There is diffuse loss of up to 98% of hepatocytes throughout the section **(2pt.)**, and normal hepatic architecture is diffusely lost. **(1pt.)**. The liver parenchyma is replaced by innumerable well differentiated **(1pt.)**, tortuous biliary ductules **(2pt.)**. Lining epithelium is multifocally swollen with numerous poorly delineated clear vacuoles and centrally placed oval nuclei with finely stippled chromatin and 1-3 large basophilic nucleoli. **(2pt.)** Ductules are separated by large amounts of mature collagen **(2pt.)** throughout which are entrapped moderate numbers of plump fibroblasts. **(1pt.)**, which efface hepatic sinusoids **(2pt.)**. Islands of remaining hepatocytes are shrunken and atrophic **(1pt.)**. Islands of melanomacrophages are scattered throughout the section.

**MORPHOLOGIC DIAGNOSIS:** Liver: Biliary hyperplasia, diffuse severe, with marked fibrosis and hepatocellular loss. **(3 pt.)**

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

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Case 2. Tissue from a wombat.

(Note: There are multiple sections on the slide, two of three show extensive congestion and alveolar hemorrhage. I find that difficult to look through, so I'm looking at the one with the least congestion and hemorrhage. Hopefully it is a diffuse lesion!)

**MICROSCOPIC DESCRIPTION:** Lung: Diffusely, alveolar walls are expanded **(1pt.)** by variable combinations and concentrations of histiocytes **(1pt.)** and fewer neutrophils **(1pt.)** admixed with hemorrhage, edema, and fibrin **(1pt.)**, and small amounts of mature collagen **(1pt.)** and cellular debris **(1pt.)**. A similar cellular infiltrate is often present within largely collapsed alveoli. **(1pt.)** Additionally, within alveoli there are mildly increased numbers of alveolar macrophages admixed with occasionally multinucleated giant cell macrophages (of the Langhans **(1pt.)** and foreign body type) **(1pt.)** which often contain a single 75um yeast **(2pt.)** with a 2-3um hyaline wall **(1pt.)** and a mottled blue-purple cytoplasm (adial spores). A similar cellular infiltrate is often refluxed into adjacent airways **(1pt.)** where they are admixed with moderate amounts of mucin **(1pt.)** liberated by hyperplastic goblet cells which line the airways. There are low to moderate numbers of lymphocytes and plasma cells within small aggregates adjacent to bronchioles.

**MORPHOLOGIC DIAGNOSIS:** Lung: Pneumonia, interstitial, granulomatous, diffuse, moderate, with low numbers of intrahistiocytic yeast. **(3pt.)**

**CAUSE:** *Emmonsia parva* **(2pt.)**

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

Case 3. Tissue from a boa constrictor.

MORPHOLOGIC DESCRIPTION: Section of kidney, large vessel, ganglion and epididymis **(1pt.)**: Diffusely, cells of the proximal convoluted tubules **(1pt.)** are mildly swollen with numerous coalescing clear vacuoles (degeneration) **(1pt.)** and one or multiple variably-sized dark red protein inclusions ranging from 4um to 6um in diameter **(2pt.)**. Similar inclusions are present in lesser numbers within the cytoplasm of collecting ducts **(1pt.)**, ureters **(1pt.)**, neurons **(1pt.)** within the ganglia, and epididymal lining epithelium **(1pt.)**. Two other types of pigments are present within the renal tubules in this section. Within the distal collecting ducts, cells of the renal sexual segment contain numerous tiny red protein globules which largely obscure other cytoplasmic details (a normal finding in male snakes). **(1pt.)** Also, cells of the proximal convoluted tubules contain aggregates of variably sized 1-4um brown granular pigment (lipofuscin or iron would be good guesses here.) Diffusely, the glomerular capillary loops are markedly expanded **(1pt.)** by a brightly eosinophilic collagen with effaces capillary loops and compresses mesangial cells, and Bowman's capsule is often dilated. **(1pt.)** Occasionally, the lumen of and occasionally the cytoplasm of renal tubules contains aggregates of lamellated globular blue-black mineral **(1pt.)** ranging up to 8um in diameter.

MICROSCOPIC DIAGNOSIS: 1. Epithelial cells of renal tubules, ureter, and epididymis, neurons: Intracytoplasmic protein droplets, numerous. **(2pt)**

2. Kidney: Glomerulosclerosis, diffuse, moderate. **(2pt.) (full credit if you went glomerulonephritis)**

Name the disease: Boid inclusion disease. **(1pt)**

Name the purported viral etiology: Boid arenavirus **(1pt)**

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

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Case 4. Tissue from an owl.

**MICROSCOPIC DESCRIPTION:** Intestine: Within this moderately autolytic **(1pt)** section of intestine, there is a focally extensive area in which villar architecture is lost **(1pt)** and is replaced by large numbers of necrotic enterocytes and degenerate infiltrating heterophils **(1pt)** and macrophages, admixed with large amounts of hemorrhage, fibrin **(1pt)**, and cellular debris (lytic necrosis) **(1pt)**. Within this area, villar crypts are occasionally dilated and contain moderate numbers of necrotic sloughed enterocytes, heterophils, and cellular debris (crypt abscesses) **(2pt)**. The nuclei of necrotic enterocytes occasionally are expanded by a light eosinophilic intranuclear **(1pt)** viral inclusion **(1pt)** which marginates the chromatin. The necrosis crosses the muscularis mucosa and extends into the submucosa and muscularis, **(2pt)**, in which smooth muscle is brightly eosinophilic and hyalinized (necrotic) **(1pt)**. At the edges of the area of necrosis, vessel walls are expanded by moderate amounts of brightly eosinophilic protein and necrotic cellular debris (vasculitis). **(1 pt.)** Mucosal and submucosal vessels adjacent to areas of necrosis are markedly congested.

**MORPHOLOGIC DIAGNOSIS:** Intestine: Enteritis, necrotizing, transmural, focally extensive, severe, with intranuclear viral inclusions **(3 pt.)**

**CAUSE:** Columbine herpesvirus-1 **(2 pt.)** (Full credit for Strigid herpesvirus -1, as they are likely the same virus.)

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