

WSC 2015-2016, Conference 18

Case 1. Tissue from a chicken.

**MICROSCOPIC DESCRIPTION:** Small intestine: There is partial thickness (**1 pt.**), circumferential (**1 pt.**) coagulative (**1 pt.**) necrosis (**1 pt.**) of the proximal 33% of the mucosa, characterized by hypereosinophilia, loss of differential staining and retention of the cellular architecture of the mucosal epithelium and lamina propria (**1 pt.**). The remaining crypts are multifocally dilated (**1 pt.**), lined by regenerative epithelium (**1 pt.**) with basophilic cytoplasm and vesicular nuclei, and often contain degenerate neutrophils and necrotic epithelium admixed with necrotic debris (crypt abscesses) (**1 pt.**). The lamina propria is expanded by large numbers of histiocytes, and fewer lymphocytes and heterophils, admixed with cellular debris and multifocal hemorrhage. (**1 pt.**) The mucosa and overlying necrotic pseudomembrane contains and is lined by (**1 pt.**) innumerable 2x5 robust bacilli (**2 pt.**).

**MORPHOLOGIC DIAGNOSIS:** Small intestine: Enteritis, necrotizing, circumferential, diffuse, severe, with numerous mucosa-adherent bacilli (**3 pt.**)

**NAME THE CONDITION:** Necrotic enteritis (**2 pt.**)

**CAUSE:** Clostridium perfringens type A or C (**2 pt.**)

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

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Case 2. Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Heart **(1 pt.)** Scattered throughout the section are multilamellar mucopolysaccharide cysts (“onion skin cysts”) **(2pt.)** composed of concentric lamellations **(1 pt.)** of amphophilic, mucinous material ranging up to 200 um **(1 pt.)** in diameter. Occasionally, within the center of these cysts is a host cell with abundant granular cytoplasm **(1 pt.)** and a single nucleus with a prominent nucleus. This cell occasionally contains a peripheral vacuole with a 5-6 round developing apicomplexan schizont **(1 pt.)**. The cysts rarely include atrophic myocytes within their cytoplasm, and are surrounded by 1-3 layers of spindle cells **(1 pt.)**. Scattered throughout the section are small to medium sized aggregates of macrophages, lymphocytes, and plasma cells. **(2 pt.)** Within some inflammatory foci, macrophages contain a single intracellular spherical 3-4 merozoite **(2 pt.)**. In other inflammatory foci, cardiac myocytes are variably shrunken and pale (atrophy) **(1 pt.)**, and rarely macrophages contain moderate amounts of intracellular oxidized lipid in the form of yellow-brown granules.

**MORPHOLOGIC DIAGNOSIS:** Heart: Myocarditis, histiocytic and lymphoplasmacytic, multifocal, mild with small numbers of apicomplexan cysts and merozoites. **(3 pt.)**

**CAUSE:** Hepatozoon americanum **(3pt)**

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

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Case 3. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Kidney: Diffusely, there is moderate tubular loss **(1pt)**. Tubular epithelium at all levels of the nephron exhibits varying combinations of the following: cytologic swelling **(1pt)**, vacuolated to brightly granular eosinophilic cytoplasm **(1pt)** (degeneration) **(1pt)**, pyknosis and karyorrhexis **(1pt)** with sloughing of the cells into the lumen (necrosis) **(1pt)**, as well as rare epithelial cells with mitotic figures. Within the superficial cortex, tubular epithelium also contains numerous discrete lipid vacuoles **(1pt)**. Tubular lumina diffusely contain flocculent protein **(1pt)** and occasionally, birefringent fan-shaped crystals (oxalates) **(2pt)**. Some tubules are dilated, lined by attenuated epithelium and filled with a homogenous pink protein cast **(1pt)**. The renal interstitium is diffusely dilated by edema, fibrillar non-compact collagen **(1pt)**, variable combinations and concentrations of histiocytes **(1pt)**, lymphocytes **(1pt)**, and plasma cells.

MORPHOLOGIC DIAGNOSIS: Kidney: Tubular degeneration, necrosis, and loss, diffuse, moderate to severe, with marked tubular atrophy, tubular lipidoses, protein casts and rare oxalate crystals. **(4pt.)**

CAUSE: Lily intoxication. (Aminoglycoside, ethylene glycol, heavy metal also OK) **(3pt)**

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

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CASE 4. Tissue from a cat.

**MICROSCOPIC DESCRIPTION:** Gastric pylorus **(1pt)**: Transmurally **(1pt)** effacing the wall of the pylorus is a proliferation of innumerable large fibroblasts **(1pt)** arranged in long streams and bundles **(1pt)**. Fibroblasts have large oval nuclei with finely clumped chromatin, prominent nucleoli, and up to 3 mitoses per 10 hpf **(1pt)**. Large bands of fibrous connective tissue in varying degrees of compaction are arrayed in a herringbone pattern throughout the mass **(2pt)**. The population of fibroblasts is admixed with large numbers of eosinophils **(2pt)**, and fewer macrophages and plasma cells **(1pt)**. Within the overlying/adjacent mucosa, glands are decreased in number and often dilated, and the lamina propria is expanded by increased amounts of fibrous connective tissue, and slightly increased numbers of lymphocytes, plasma cells, histiocytes, and eosinophils. **(1pt)** The interface between the remaining mucosa and the fibrous mass is composed of a large bed of granulation tissue **(1pt)** which blends imperceptibly with the advancing front of the fibrous mass. At the edges of the fibrous mass, muscle fibers of the muscular tunics shrunken and hypereosinophilic (atrophic) and surrounded by infiltrating fibrous connective tissue. **(1pt)** Fibrous connective tissue infiltrates and expands perivascular tissue throughout much of the remaining muscular tunics. There are multiple lymphoid nodules with the serosa, and serosal vessels often surrounded by edema and moderate numbers of eosinophils and lymphocytes **(1pt)**.

**MORPHOLOGIC DIAGNOSIS:** Stomach: Gastritis, necrotizing, focally extensive, with marked fibrosis and eosinophilic and lymphohistiocytic inflammation. **(2pt)**

**NAME THE CONDITION:** Feline gastrointestinal eosinophilic sclerosing fibroplasia **(2pt)**

**CAUSE:** Exaggerated peritoneal response to bacterial leakage from GI tract **(1pt)**

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