

WSC 2023-2024
Conference 19, Case 1
Tissue from a corn snake.

MICROSCOPIC DESCRIPTION: Multiple sections from the gastrointestinal tract are submitted for examination, to include stomach, intestine, and colon. There is moderate autolysis. Segmentally, the mucosa **(1pt.)**, and occasionally the submucosa, and inner layers of the muscularis of each of these tissues **(1pt.)** is replaced by a brightly eosinophilic necrotic coagulum **(1pt.)** which is composed of abundant karyorrhectic cellular debris **(1pt.)**, hemorrhage, fibrin edema, bacterial colonies **(1pt.)**, and numerous heterophils **(1pt.)** and hemosiderin-laden macrophages **(1pt.)** with rare multinucleated macrophages. Scattered throughout the coagulum and extending into the underlying remaining muscularis, are low to moderate numbers of 4-8um **(1pt.)** round flagellates **(2pt.)**, with amphophilic smudgy cytoplasm, occasional cytoplasmic vacuoles, and round nucleus **(2pt.)**. The remaining muscularis and serosa are multifocally infiltrated with low to moderate numbers of heterophils and macrophages (often hemosiderin-laden), admixed with cellular debris, hemorrhage and edema. **(1pt.)**

Kidney: There is abundant golden brown pigment within the proximal convoluted tubules. Tubules are multifocally dilated with urates; there are rare urate tophi in which the urates are spicular and surrounded by epithelioid macrophages.

MORPHOLOGIC DIAGNOSIS: 1. Stomach, Gastritis, necrotizing **(1pt.)**, segmental, diffuse, moderate, with numerous flagellates **(1pt.)**
2. Small intestine: Gastritis, necrotizing, segmental, diffuse, moderate, with numerous flagellates **(1pt.)**
3. Colon: Colitis, necrotizing, circumferential, diffuse, moderate, with numerous flagellates **(1pt.)**
4. Kidney: Urate stasis with rare gouty tophi.

CAUSE: *Entamoeba invadens* **(2pt.)**

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

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Conference 19, Case 2

Tissue from a white-eared opossum.

MICROSCOPIC DESCRIPTION: Lung: Three sections of lung are submitted for examination. Diffusely, bronchioles **(1pt.)** are expanded and filled with variable combinations and concentrations of the following: foamy macrophages **(1pt.)**, neutrophils **(1pt.)**, fewer lymphocytes and plasma cells, mucus **(1pt.)**, fibrin, edema fluid, and cellular debris, as well as cross sections of both males and female adult **(1pt.)** metastrongyle **(1pt.)** nematodes, larvae, and embryonated eggs **(1pt.)**. The adult nematodes are 300-400um in diameter **(1pt.)** and have a 5-10 um thick outer cuticle with small ridges **(1pt.)**, a pseudocoelom lined by coelomyarian-polymyarian musculature and prominent lateral cords, a large intestine lined by few uninucleate cells, an ovary, and a paired uterus contain numerous morulated and larvated eggs **(1pt.)**. In some females, the oviduct contains sperm. Males are 125-200um in diameter with a similar iLarvae are 10-12 um in diameter with numerous somatic cell nuclei. Nematodes are also present within adjacent alveoli. Multifocally, bronchiolar epithelium is hyperplastic **(1pt.)**, characterized by piling of epithelium (up to 5 layers), and is often sloughed, necrotic, or absent, and is often infiltrated by low to moderate numbers of lymphocytes, plasma cells and eosinophils, with lesser numbers of histiocytes and macrophages, which are also present within the submucosa **(1pt.)**. Alveolar spaces are multifocally filled with variable combinations and concentrations of foamy macrophages, multinucleated foreign body macrophages **(1pt.)**, neutrophils, lymphocytes, admixed with cellular debris and moderate numbers of metastrongyle larvae. Multifocally, alveolar septa are expanded by macrophages, fewer neutrophils lymphocytes and plasma cells, edema, and mild fibrosis **(1pt.)**. There is mural smooth muscle hyperplasia of pulmonary arterioles.

MORPHOLOGIC DIAGNOSIS: Lung: Bronchopneumonia **(1pt.)**, catarrhal and lymphohistiocytic **(1pt.)**, multifocal, mild to moderate, with metastrongyle **(1pt.)** adults, larvae, and eggs. **(1pt.)**

2. Lung: Pneumonia, interstitial, lymphohistiocytic, diffuse, mild to moderate.

CAUSE: *Didelphostrongylus hayesi* **(1pt.)**

O/C: (1pt.)

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Conference 19, Case 3.

Tissue from a porcupine.

MICROSCOPIC DESCRIPTION: Liver: There is multifocal loss of sinusoidal architecture. **(1pt.)** There are numerous randomly **(1pt.)** scattered foci ranging up to 1mm in diameter **(1pt.)** in which hepatocytes are shrunken, hypereosinophilic (degenerate) **(1pt.)** and pyknotic or fragmented (necrosis) **(1pt.)** Within these areas, there are aggregates of low to moderate numbers of macrophages **(1pt.)**, with fewer neutrophils **(1pt.)**, lymphocytes and plasma cells and scattered hemorrhage. There is swelling of adjacent hepatocytes, with occasional disassociation and rounding up. **(1pt.)** Regionally, these areas also contain hypercellular sinusoids, with hypertrophic Kupffer cells and low numbers of neutrophils, lymphocytes, and occasionally pyknotic cells. **(1pt.)** Scattered rare hepatocytes contain cytoplasmic cysts **(1pt.)** which contain numerous 1-2um round apicomplexan zoites. **(2pt.)** Portal areas are expanded by low to moderate numbers of lymphocytes and plasma cells and mild fibrosis. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Liver: Hepatitis, necrotizing **(2pt.)**, subacute, random, multifocal, mild to moderate with intracytoplasmic apicomplexan zoites **(1pt.)**.

CAUSE: *Toxoplasma gondii* **(3pt.)**

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

WSC 2023-2024
Conference 19, Case 4.
Tissue from a hornbill.

MICROSCOPIC DESCRIPTION: Ventriculus (1pt.): The mucosa is segmentally and multifocally eroded with marked koilin loss (1pt.) and the necrotic mucosa and koilin is replaced by a coagulum (1pt.) of abundant cellular debris (1pt.), sloughed enterocytes, heterophils (1pt.), hemorrhage (1pt.), (sometimes lamellated) fibrin (1pt.), and large bacterial colonies (1pt.) which extends into and fills the lumen. Robust bacilli often palisade along necrotic debris. (1pt.) There is infiltration of the underlying lamina propria by low to moderate numbers of heterophils. (1pt.) Ventricular glands are multifocally dilated (1pt.) and occasionally sloughed epithelium and heterophils. (1pt.) Mucosal vessels are markedly congested. The inflammation dissects through the submucosa and expands the interstitial fibrous connective tissue within the muscular wall. (1pt.) The walls of scattered blood vessels are expanded by abundant brightly eosinophilic protein and cellular debris (fibrinoid necrosis). The serosa is multifocally expanded by fibrous connective tissue and plump fibroblasts with low numbers of heterophils and lymphocytes scattered throughout. (1pt.)

MORPHOLOGIC DIAGNOSIS: Ventriculus: Ventriculitis, ulcerative and fibrinoheterophilic, (1pt.) multifocal to coalescing, moderate with vasculitis. (1pt.)

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

O/C: (1pt.)