

WSC 2023-2024
Conference 8, Case 1
Tissue from a horse.

MICROSCOPIC DESCRIPTION: Small intestine: There is diffuse and marked villar blunting **(1pt.)**. There are numerous mitotic figures within the crypts (crypt hyperplasia) **(1pt.)**. Paneth cells are prominent within crypts. Multifocally expanding the remnant villi, there are numerous apicomplexan **(1pt.)** life stages **(1pt.)**. Microgamonts **(1pt.)** range up to 165um in diameter and reside within hypertrophied host epithelial cells **(1pt.)** with a hyaline 8um wall **(1pt.)** and an excentric hypertrophied basophilic nucleus **(1pt.)** and a large parasitophorous vacuole containing innumerable basophilic nuclei. **(1pt.)** Macrogamonts **(1pt.)** are approximately 75-90um in diameter in a similarly modified host cell which contain 4 or more eosinophilic globules ranging up to 8um. **(1pt.)** The lamina propria of the intestine is moderately expanded by increased numbers of lymphocytes **(1pt.)**, plasma cells **(1pt.)** and fewer eosinophils **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Small intestine: Enteritis, lymphoplasmacytic **(1pt.)** and eosinophilic, diffuse, moderate, with villar atrophy, crypt hyperplasia **(1pt.)**, and numerous intraepithelial apicomplexan gamonts. **(1pt.)**

CAUSE: *Eimeria leukarti* **(2pt.)**

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

WSC 2023-2024
Conference 8, Case 2
Tissue from a pig.

MICROSCOPIC DESCRIPTION: Lung: There is patchy to lobular areas of inflammation scattered throughout the lung, markedly obscuring normal alveolar architecture. **(1pt.)** Within affected areas, alveolar septa are variably expanded **(1pt.)** up to 5X normal by variable combinations and concentrations of macrophages **(1pt.)**, lymphocytes, neutrophils, plasma cells, and necrotic debris, and are occasionally lined by hyperplastic type II pneumocytes **(1pt.)** and/or compacted lamellae of polymerized fibrin (hyaline membranes). **(1pt.)** Multifocally, alveolar lumina are filled and occasionally expanded by variable combinations and concentrations of occasionally necrotic macrophages **(1pt.)**, rare multinucleated giant cell macrophages **(1pt.)**, lymphocytes, viable and degenerate neutrophils **(1pt.)**, as well as abundant hemorrhage, fibrin and edema. **(1pt.)** A similar exudate is refluxed into surrounding airways; there is multifocal necrosis of bronchiolar epithelium with loss and attenuation of remaining epithelial cells and mild multifocal smooth muscle hyperplasia. **(1pt.)** Bronchiolar associated lymphoid tissue is multifocally hyperplastic and there is occasional lymphocytolysis. **(1pt.)** Throughout the section, small vessels are often surrounded by cuffs **(1pt.)**, of 4-5 layers of lymphocytes and plasma cells and rarely, the wall of small caliber arterioles are smudgy, and focally thickened by small amounts of intramural protein and necrotic debris (vasculitis) **(1pt.)**. Interlobular septa and the overlying pleura are mildly edematous **(1pt.)**, and infiltrated by low numbers of lymphocytes, plasma cells, and macrophages. Scattered throughout the section, both within airways and scattered throughout the parenchyma, are numerous cross and tangential sections of ascarid larvae **(1pt.)** which measure 40-60 um in diameter, with a smooth cuticle, prominent lateral alae **(1pt.)**, coelomyarian-polymyarian musculature **(1pt.)**, large lateral chords, and a large intestine with uninucleate cells. There is no evidence of gonads or eggs. There is a higher proportion of eosinophils within the inflammatory exudate in proximity to the larvae. The epithelium in airways contain larvae is occasionally hyperplastic.

MORPHOLOGIC DIAGNOSIS: 1. Lung: Pneumonia, interstitial **(1pt.)**, lymphohistiocytic **(1pt.)**, patchy, marked, with type II pneumocyte hyperplasia, hyaline membrane formation, and intra-alveolar macrophage necrosis and marked peribronchiolar and perivascular lymphoid hyperplasia.

2. Lung: Pneumonia, interstitial, histiocytic and eosinophilic, multifocal, mild, with eosinophilic bronchiolitis and intraparenchymal and intrabronchiolar ascarid larvae. **(1pt.)**

CAUSE: Porcine arterivirus (PCV-2 OK) **(1pt.)** and *Ascaris suum* **(1pt.)**

WSC 2023-2024
Conference 8, Case 3.
Tissue from an octopus.

NOTE: NOT GRADING THIS OUT – NOT ENOUGH TO DESCRIBE AND THERE IS A LOT OF AUTOYSIS.

MICROSCOPIC DESCRIPTION: A section of digestive gland and one of esophagus are submitted for examination; there is moderate to marked autolysis.

Digestive gland: Arising from the wall of the esophagus and effacing about 15% of the gland, there is a focal area of fibrosis. The area of fibrosis contains a few remaining poorly preserved glands and a single embedded cestode larva. The larva is approximately 600um in diameter with a thin tegument lined by somatic cell nuclei, a spongy parenchyma, numerous 10-12um amphiphilic carcareous corpuscles, and muscular suckers with birefringent hooklets (armed rostellum). The cestode larvae is immediately surrounded by cellular debris. There are low numbers of hemocytes within the adjacent fibrosis. There is overall atrophy of the digestive gland.

Esophagus: A similar cestode is embedded in the muscular wall of the esophagus. It is surrounded by low numbers of hemocytes with hyperchromatic nuclei, and fibrous connective tissue, which infiltrates the adjacent atrophic muscle fibers.

MORPHOLOGIC DIAGNOSIS:

1. Digestive gland and esophagus: Cestodiasis, interstitial and luminal, multifocal, moderate with necrosis and hemocytic inflammation.
2. Digestive gland: Atrophy, diffuse, moderate.

WSC 2023-2024
Conference 8, Case 4.
Tissue from a horse

MICROSCOPIC DESCRIPTION: Colon: There is mild autolysis. Diffusely, the submucosa is markedly edematous **(1pt.)** and contains low numbers of embedded larval **(1pt.)** L4 stage nematodes **(1pt.)** which range up to 140um with a thick cuticle, pseudocoelom, meromyarian-platymerian musculature **(1pt.)**, large lateral cords **(1pt.)**, an intestinal tract composed of few uninucleated cells. (No mature gonads or eggs **(1pt.)** are present within any nematode, suggesting that the nematodes are still larval. The nematodes are contained within poorly formed granulomas **(1pt.)** composed of multiple layers of macrophages, **(1pt.)** rare multinucleated cells, fewer lymphocytes and plasma cells, neutrophils, and eosinophils **(1pt.)**. Similar inflammatory cells are widely dispersed throughout the edematous submucosa. **(1pt.)** Several peripherally sectioned areas of granulomatous inflammation in which nematodes are not evident are scattered throughout the submucosa. The overlying mucosa is also edematous **(1pt.)** and colonic glands are widely separated by moderate numbers of lymphocytes and plasma cells **(1pt.)**, with fewer eosinophils, histiocytes and neutrophils. The mucosa is multifocal ulcerated and focally replaced by eosinophilic cellular debris. There are occasional 20um larval nematodes embedded within the colonic mucosa. **(1pt.)** There are mineralized foci in the endothelium of submucosal vessels.

MORPHOLOGIC DIAGNOSIS: Colon: Colitis, granulomatous, **(1pt.)** multifocal, mild to moderate, with marked submucosal edema **(1pt.)** and small strongyle larvae. **(1pt.)**

CAUSE: Cyathostome (small strongyle) larvae **(3pt.)**

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