

WSC 2014-2015, Conference 10

Case 1. Tissue from a cat.

**MICROSCOPIC DESCRIPTION:** Lung: Diffusely, alveolar spaces are filled and often expanded variable combinations and concentrations of viable and degenerate neutrophils **(1 pt.)**, alveolar macrophages, edema fluid **(1 pt.)**, polymerized fibrin, hemorrhage, and cellular debris **(1 pt.)**. Enmeshed within the alveolar contents are large extracellular **(1 pt.)** colonies of basophilic 2µm coccobacilli **(1 pt.)**. There is diffuse marked congestion of alveolar capillaries **(1 pt.)**, and septa are often expanded by edema fluid **(1 pt.)** and polymerized fibrin **(1 pt.)**, as well as increased numbers of circulating neutrophils. Multifocally, alveolar septa are necrotic **(2 pt.)** and replaced by fibrin, necrotic cellular debris, hemorrhage, degenerate neutrophils, and coccobacilli. There are rare megakaryocytes within alveolar capillaries. Airways often contain reflux of the exudate present within alveoli **(1 pt.)**; occasionally airway epithelium is sloughed. Multifocally throughout the section, the walls of veins are brightly eosinophilic and occasionally expanded with clear space extruded protein and red blood cells as well as small amounts of cellular debris; nuclei of smooth muscle are occasionally pyknotic (vasculitis) **(2 pt.)**. The pleura is diffusely and moderately expanded by hemorrhage and fibrin. **(1 pt.)**

**MORPHOLOGIC DIAGNOSIS:** Lung: Pneumonia, suppurative, diffuse, severe, with multifocal septal necrosis and abundant extracellular coccobacilli **(3 pt.)**

**CAUSE:** *Yersinia pestis* **(2 pts.)**

**O/C – (1 pt.)**

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Case 2. Tissue from a horse

**MICROSCOPIC DESCRIPTION:** Lymph node **(1 pt.)** and perinodal adipose tissue : Diffusely, nodal architecture is effaced **(1 pt.)** by granulomatous inflammation **(1 pt.)** and abundant haphazardly arranged edematous collagen **(1 pt.)**. These areas contain scattered cross- and tangential sections of adult and larval nematodes which are scattered among and occasionally engulfed by moderate numbers of epithelioid **(1 pt.)** and rarely foreign body-type macrophages, admixed with plasma cells **(1 pt.)**, fewer lymphocytes, and rare neutrophils and eosinophils **(1 pt.)**, plump fibroblasts and cellular debris. Adult nematodes that are 10-25 um diameter with a smooth cuticle, platymyarian-meromyarian musculature, an esophagus with terminal bulb, and numerous deeply basophilic 2-3 um internal structures within the pseudocoelom. **(2 pt.)** Lymphatic vessels in the small amounts of remaining cortex are markedly dilated **(1 pt.)** and contain low numbers of macrophages and rarely cross sections of nematodes, and occasionally, hyaline thrombi which are lined by endothelial cells (recanalization) **(1 pt.)**. The remaining cortex also contains small number of macrophages containing either hemosiderin or anthracotic pigments. The inflammatory process and associated helminths breach the capsule of the node and extends into the adjacent adipose tissue **(1 pt.)**, surrounding and separating adipocytes. Adjacent vessels in the perinodal fat contain fibrinocellular thrombi **(1 pt.)** and often are surrounding by moderate numbers of lymphocytes, plasma cells and rare hemosiderin-laden macrophages. **(1 pt.)**

**MORPHOLOGIC DIAGNOSIS:** Lymph node: Lymphadenitis, granulomatous, diffuse, severe, with numerous adult and larval nematodes. **(2 pt.)**

**CAUSE:** *Halicephalobus gingivalis* **(3 pt.)**

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

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Tissue from a cat.

Note: There is marked slide variation, and not all slides have the all of the features (namely the nematode! In fact, the contributor's writeup for this case does not even mention it – so if your slide doesn't have a nematode in it, best to just move onto the next slide.)

**MICROSCOPIC DESCRIPTION:** Lung: Multifocally, in a random **(1 pt.)** and patchy distribution, alveoli contain variable numbers of eosinophils **(2 pt.)** which range from few to large aggregates **(1 pt.)** which fill and even expand some alveoli **(1 pt.)**. They are admixed with small amounts of alveolar edema **(1 pt.)** and fibrin, and low numbers of alveolar macrophages. Focally, within an airway and extending into adjacent alveoli is a tangential section of an adult nematode **(1 pt.)** with a smooth cuticle, pseudocoelom, coelomyarian-polymarian musculature, and an intestine lined by multinucleated cells. **(1 pt.)** In affected areas, alveolar septa are mildly expanded by congestion and edema **(1 pt.)**. Airways in affected airways contain small amounts of reflux from affected alveoli **(2 pt.)**, and there is moderate hypertrophy of smooth muscle of terminal bronchioles **(2 pt.)**. Throughout the section, pulmonary arterioles are mild to moderately hypertrophy with thickened walls **(2 pt.)** and adventitial is mildly expanded by clear space (edema.)

**MORPHOLOGIC DIAGNOSIS:** Lung: Pneumonia, eosinophilic, multifocal, mild to moderate, with pulmonary and airway smooth muscle hyperplasia and adult strongyle. **(3 pt.)**

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

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Case 4. Tissue from a pig.

(Once again, there are multiple sections that were submitted by the contributor.) This description is of the better slide of the jejunum. A section of ileum was also distributed which demonstrates excellent villar shortening, but not much in the way of the degenerative or necrotic epithelial changes. If you have a section of ileum, just take a look and move on. It doesn't really have 20pts. of change in it.)

**MICROSCOPIC DESCRIPTION:** Jejunum: There is diffuse severe shortening of villi **(2pt.)**. Multifocally, mucosal epithelium at the villar tips is vacuolated **(1pt.)** and swollen (degeneration) **(1pt.)**, with occasionally pyknotic and or karyorrhectic nuclei (necrosis). **(1pt.)** There are large areas in which villar tip epithelium is lost **(2pt.)** and adjacent epithelium is flattened and attenuated **(1pt.)**. The lamina propria often contains low numbers of neutrophils **(1pt.)**, especially within villi in which epithelium has been lost. There is marked crypt hyperplasia **(2pt.)** with mitotic figures which are present along the entire length of the villus **(1pt.)**. The lumen contains sloughed epithelial cells and cellular debris **(1pt.)**.

**MORPHOLOGIC DIAGNOSIS:** Intestine: Enteritis, necrotizing, acute, diffuse, with marked villar blunting, villar epithelial loss, and marked crypt hyperplasia. **(3pt.)**

**CAUSE:** Porcine coronavirus (Porcine Epidemic Diarrhea Virus) (Porcine rotavirus, porcine coronavirus (TGEV) – also ok) **(3pt.)**

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