WSC 2016-2017 Conference 1.

Case 1. Tissue from a ferret.

MICROSCOPIC DESCRIPTION: Vertebral body (atlas): Unilaterally effacing the vertebral body and transverse processes, and infiltrating the adjacent lateral and dorsal epaxial musculature **(1pt.)**, there is an unencapsulated, infiltrative, well-demarcated, moderately cellular, multinodular neoplasm **(1pt.)**. The neoplasm is composed of nests and packets of polygonal **(1pt.)** cells surrounded by moderate to large amounts of a homogenous basophilic to eosinophilic cartilaginous matrix **(1pt.)**. The neoplasm is often subdivided into lobules by thin bands of collagenous stroma. Neoplastic cells (physaliferous cells) **(2pt.)** range from 10-25um with abundant vacuolated cytoplasm and distinct cell borders. **(1pt.)** Nuclei are small, hyperchromatic, and often indented **(1pt.)**, and mitoses are rare **(1pt.)**. Centrally within some areas, there is condensation of the matrix to form spicules of mineralized bone **(1pt.)** which contain osteocytes within lacunae and is lined by osteoblasts.). **(1pt.)** The spinal cord is unilaterally and transversely compressed **(1pt.)**, and on the area of compression, there are moderate numbers of dilated axon sheaths. There is occasional swelling and pallor of neurons in the grey matter, primarily within the dorsal horn on the side of compression. There is marked resorption of lamellar vertebral bone **(1pt.)** which is occasionally replaced or supplemented by irregular projections of woven bone **(1pt.)** (osteophytes.) Adjacent skeletal muscle which is compressed by the expanding neoplasm contains shrunken, variably-sized myofibers (atrophy) **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Vertebra (axis): Chordoma. **(5pt.)**

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

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Case 2. Tissue from a mink.

MICROSCOPIC DESCRIPTION: Lung: There is diffuse marked hyperplasia of airway epithelium **(1pt.)**. Airway epithelium contains one or more 2-4um brightly eosinophilic irregularly round viral inclusions. **(2pt.)** There is individual cell necrosis of airway epithelium **(1pt.)** and the lumen contains flocculent eosinophilic protein, small amounts of hemorrhage, and few necrotic cells. **(1pt.)** Alveoli diffusely contain abundant edema fluid and low numbers of foamy alveolar macrophages, as well as occasionallymultinucleated syncytial macropahges. Bth alveolar macrophages and syncytial cells rarely contain eosiniophilic intracytoplasmic viral inclusions. **(1pt.)** There is diffuse congestion of septal capillaries and a mild neutrophilia, as well as scattered necrotic cells of undetermined origin. **(1pt.)** There is patchy type II pneumocyte hyperplasia **(1pt.)** and rare Type II pneumocytes are multinucleated **(1pt.)**. Type II pneumocytes also occasionally contain eosinophilic cytoplasmic viral inclusions **(1pt.)**. Focally, at the edge of the section, septa are markedly expanded by fibrous connective tissue **(1pt.)** which effaces alveolar architecture and makes syncytia more apparent. There are scattered foci of osseous metaplasia within the lung**(1pt.)**. There is mild mesothelial hyperplasia.

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, bronchointerstitial, necrotizing and histiocytic, mild, with marked bronchiolar epithelial hyperplasia **(1pt.)**, viral syncytia **(1pt.)**, and numerous intraepithelial intracytoplasmic inclusions **(1pt.)**.

CAUSE: Canine morbillivirus **(3pt.)**

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

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Case 3. Tissue from a cat.

Tissue from a cat.

MICROSCOPIC DESCRIPTION: Liver: Diffusely, hepatocyte plates are dissociated **(2 pt)** and normal sinusoidal architecture is lost **(1 pt)**. Hepatocytes contain one to numerous lymphocytes **(1 pt.)** within their cytoplasm **(1 pt.)**. The lymphocytes are often surrounded by a clear halo **(2 pt.)** (emperipolesis) **(2 pt**.) and contain a small amount of cytoplasm with numerous pink granules and hyperchromatic nuclei. There are scattered nodules **(1 pt)** within which hepatocytes often have no lymphocytes , and in which numerous discrete translucent vacuoles (fat) **(1 pt)** are present within the cytoplasm Within areas of prominent hepatic plate disassociation, Kupffer cells contain a brown granular pigment **(1 pt.)** (iron) **(1 pt)**

MORPHOLOGIC DIAGNOSIS: 1. Liver: Hepatotrophic T-cell lymphoma, with intrahepatocytic emperipolesis. **(4 pt.)**

2. Liver: Micronodular regeneration, multifocal, mild. **(1 pt)**

3. Liver: Lipidosis, diffuse, mild to moderate. **(1 pt.)**

O/C – **(1 pt.)**

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Case 4. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Lung: The lung is diffusely hypercellular **(1 pt)** . Alveolar walls are expanded up to 5X normal **(1 pt)** by moderate amounts of marked congestion, multifocal and intraseptal hemorrhage, edema and fibrin **(1 pt)**, moderate numbers of neutrophils and macrophages, patchy type II pneumocyte hyperplasia **(1 pt)**, and a dense mat of polymerized fibrin lining alveoli **(1 pt)** (hyaline membranes) **(2 pt)**. There is patchy septal fibrosis scattered throughout the section. Alveoli contain low to moderate numbers of activated macrophages **(1 pt)** (which are rarely multinucleated) **(1 pt)** and neutrophils **(1 pt)** admixed with small amounts of hemorrhage, fibrin, and cellular debris. Scattered throughout the section, occasionally within macrophages, are low numbers of 10-12 um irregularly round golden brown fungal conidia **(2pt)**. Airways contain small to moderate amounts of refluxed edema fluid which contains low numbers of erythrocytes and neutrophis, and few neutrophils are present within the epithelium and underlying submucosal connective tissue. **(1 pt)** Throughout the section, blood vessels are often surrounded by 2-5 layers of lymphocytes and plasma cells **(1 pt)**, and similar cells often line the pleura. **(1 pt)**

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, interstitial, necrotizing, neutrophilic, and histiocytic, diffuse, moderate to severe, with hyaline membrane formation and rare fungal conidia.**(4 pt.)**

ETIOLOGIC DIAGNOSIS: Pulmonary lycoperdonosis **(1 pt)** **(**Yes – this is a reach – but any other cause of ARDS is acceptable! Gram-negative sepsis, Streptococcal pneumonia, allergic alveolitis, inhalant gases, oxygen toxicity, paraquat, etc. etc.)

O/C – **(1 pt.)**