WSC 2009-2010, Conference 5, Case 1.

Tissue from a dog.

MORPHOLOGIC DESCRIPTION: Liver: Portal areas **(1pt.)** are diffusely and markedly expanded **(1pt.)** by large numbers of plump polygonal macrophages **(1pt.)** with abundant finely granular basophilic cytoplasm **(1pt.)**, which occasionally form nodules **(1pt.)**. Occasionally, negative reliefs of 2-3um bacilli can be seen within macrophage cytoplasm **(1pt.)**. Scattered throughout this infiltrate are low to moderate numbers of neutrophils and lymphocytes with rare plasma cells and foreign body multinucleate macrophages **(1pt.).** There is mild periductular fibrosis and biliary hyperplasia **(1pt.)**. The infiltrate of macrophages breaches the limiting plate, replacing periportal hepatocytes **(1pt.)**. Midzonal and centrilobular hepatocytes are compressed and shrunken (atrophy) **(1pt.)** and there is moderate congestion. There is multifocal bile plugging **(1pt.)**. In some areas, Kupffer cells contain a golden–brown globular pigment (hemosiderin). There is widely scattered EMH within hepatocytes with individual megakaryocytes scattered throughout the section **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Liver: Hepatitis, granulomatous, portal, diffuse, severe, with abundant intracellular bacilli. **(3 pt.)**

Cause: *Mycobacterium avium-intracellulare* **(3 pt.)**

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

WSC 2009-2010, Conference 5, Case 2.

Tissue from a cat.

MORPHOLOGIC DESCRIPTION: Lung: Diffusely, alveolar walls are markedly thickened **(1pt.)** by low to moderate numbers of neutrophils, macrophages, type II pneumocyte hyperplasia **(1pt.)**, fibrin **(1pt.)**, edema, and cellular debris. There is multifocal lytic necrosis of alveolar walls **(1pt.)** with replacement by fibrin and necrotic cellular debris. Rarely, type II pneumocytes are multinucleated. Alveoli are filled with moderate numbers of alveolar macrophages (rarely multinucleated), neutrophils, abundant fibrin, edema, hemorrhage, polymerized fibrin, and necrotic cellular debris. There is diffuse necrosis of airway epithelium **(1pt.)** with sloughing into the lumen, where it is mixed with moderate numbers of viable and degenerate neutrophils, edema fluid, fibrin, and cellular debris **(1pt.)**. Occasionally, necrotic airway epithelial cells have multiple nuclei **(1pt.)** (viral syncytia) **(1pt.)**. Airway walls are often loosely arranged with mural edema and low to moderate numbers of transmigrating neutrophils and cellular debris. Submucosal glands are diffusely necrotic and replaced with degenerate neutrophils, macrophages, necrotic epithelial cells and abundant necrotic cellular debris **(1pt.)**. Multifocally, necrotic airway epithelium, type II pneumocytes, and alveolar macrophages have nuclei which are expanded by a single glassy magenta viral inclusion which peripheralizes the chromatin **(1pt.)**. There are aggregates of moderate numbers of lymphocytes and plasma cells around bronchioles, large veins and subjacent to the pleura**(1pt.)**. The pleura and interlobular connective tissue is mildly thickened by edema **(1pt.)** and there is hypertrophy of the overlying mesothelium **(1pt.)**.

MICROSCOPIC DIAGNOSIS: Lung: Pneumonia, bronchointerstitial, necrotizing, subacute, diffuse, moderate to severe, with viral syncytia and intranuclear viral inclusion bodies. **(4pt.)**

CAUSE: Feline herpesvirus – 1 **(2pt.)**

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

WSC 2009-2010, Conference 5, Case 3.

Tissue from a dog.

MORPHOLOGIC DESCRIPTION: Heart, right ventricle : The outer half of the myocardium **(2 pt.)** is diffusely infiltrated by sheets of well-differentiated adipocytes **(3 pt.)** which replace normal myocardium **(2 pt.)**. In some areas, there is a mild increase in interstitial fibrous connective tissue **(3 pt.)**. Adjacent to the infiltrating adipocytes, cardiomyocytes are rarely shrunken, brightly eosiniophilic and hyalinized with loss of cross-striations, and vacuolated (degeneration) **(2 pt.)**. Rarely, cardiomyocytes are fragmented and the myotube is infiltrated by low numbers of macrophages (necrosis) **(2 pt.)**.

MORPHOLOGIC DIAGNOSIS: Heart: Fibrofatty infiltration, multifocal to coalescing, moderate, with mild myofiber degeneration and necrosis. **(3pt.)**

Name the condition: Boxer cardiomyopathy (ARVC) **(2 pt.)**

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

WSC 2009-2010, Conference 5, Slide 4.

Tissue from a deer.

MORPHOLOGIC DIANGOSIS: Liver: Effacing about 50% **(1 pt.)** of the section is an unencapsulated, well-demarcated, moderately cellular, multifocally infiltrative neoplasm **(2 pt.)**. The neoplasm is composed of polygonal **(1 pt.)** cells arranged in islands and trabeculae **(1 pt.)** on a moderate to dense fibrous stroma**(1 pt.)**. Neoplastic cells have distinct cell borders with abundant pink granular to vacuolated cytoplasm**(1 pt.)**. Nuclei are irregularly round to oval with coarsely stippled chromatin and 1-2 large magenta nucleoli. **(1 pt.)** Mitotic figures average 1-2 per HPF and there are occasional bizarre mitotic figures**(1 pt.)**. There is marked anisocytosis and anisokaryosis **(1 pt.)**. At the periphery of the neoplasm, there are small aggregates of lymphocytes and plasma cells and hemosiderin-laden macrophages**(1 pt.)**. There are large areas of necrosis **(1 pt.)** throughout the neoplasm. At the periphery of the neoplasm, the adjacent hepatocytes are compressed, and there is marked congestion. Scattered throughout the normal tissue, there are aggregates of hemosiderin-laden macrophages **(1 pt.)**, which are larger around large veins and subjacent to the capsule. There is mild biliary hyperplasia **(1 pt.)**.

Lung: (not graded for points): Neoplasm as graded above. There is marked congestion, hemorrhage, fibrin, and edema expanding surrounding alveoli, and aggregations of hemosiderin-laden macrophages. Focally, there are large numbers of lymphocytes and plasma cell ssurrounding vessels, and surrounding alveoli contain moderate numbers of viable and degenerate neutophils and alveolar macrophages. Interlobular septa is expanded by clear space (emphysema).

MORPHOLOGIC DIAGNOSIS: 1. Liver: Hepatocellular carcinoma. **(5 pt.)**

2. Lung: Metastatic hepatocellular carcinoma.

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