WSC 2010-2011, Conference 3, Case 1.

Tissue from a pig.

MICROSCOPIC DESCRIPTION: Small intestine (jejunum): There is diffuse marked thickening of the mucosa **(1 pt.)** in an accentuated rugal pattern. Villi are markedly blunted and occasionally fused **(1 pt.)**, and villar lacteals are occasionally dilated **(1 pt.)**. There is multifocal loss of epithelium at the villar tips. The villi and glands are lined by hyperplastic columnar epithelial cells **(1 pt.)** up to 4-5 cells thick with amphophilic, vacuolated cytoplasm, vesicular nuclei **(1 pt.)**, and increased mitotic figures**(1 pt.)**. There is a marked decrease in goblet cells **(1 pt.)**. Crypts are elongate, tortuous, and variably lined by attenuated to hyperplastic epithelium and contain abundant eosinophilic cellular and nuclear debris, degenerate neutrophils, and sloughed epithelial cells (crypt abscesses). **(1 pt.)** Multifocally, the lamina propria is mildly expanded by moderately increased numbers of lymphocytes, plasma cells, few neutrophils and macrophages, and rare eosinophils.

Small intestine (ileum): Similar proliferative and inflammatory changes are present as previously described. In addition, there is a prominent necrotic coagulum overlying the ulcerated mucosa, composed of necrotic epithelial cells, degenerate neutrophils, cellular debris, fibrin, and hemorrhage, as well as numerous entrapped 1-2um bacilli. **(2pt.)** (and in some slides, ciliated protozoa consistent with *Balantidium* coli.) There is partial necrosis of the mucosal epithelium **(1 pt.)** within separation of glands by low to moderate numbers of neutrophils and macrophages. There is multifocal crypt herniation into subjacent lymphoid follicles.

Small intestine (jejunum) (Section 2): In this section of jejunum, there is diffuse marked villar loss, blunting and fusion **(1 pt.)**. Villar epithelium is infiltrated by moderate numbers of lymphocytes **(1 pt.)**. The lamina propria is expanded and crypts are separated and surrounded by large numbers of lymphocytes **(1 pt.)**, lesser numbers of macrophages and rare eosinophils, as well as moderate edema.

MICROSCOPIC DIAGNOSIS: 1. Small intestine, jejunum: Enteritis, proliferative, diffuse, moderate to severe, with villar blunting and fusion, mild subacute enteritis and crypt abscesses. **(1 pt.)**

2. Ileum: Ileitis, proliferative and fibrinonecrotic, diffuse, moderate to severe with villar blunting and fusion, crypt herniation, and crypt abscesses. **(1 pt.)**

3. Jejunum: Enteritis, lymphocytic, diffuse, moderate, with marked villar loss, fusion, and blunting. **(1 pt.)**

CAUSE: *Lawsonia intracellulare* **(2 pt.)**

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

WSC 2010-2011. Conference 3, Case 2

Tissue from a cat.

MICROSCOPIC DESCRIPTION: Lung: Approximately 50% of the lung is effaced by nodular **(1 pt.)** areas of granulomatous **(1 pt.)** inflammation in which alveolar architecture is replaced by large numbers of epithelioid macrophages **(2 pt.)** and neutrophils **(1 pt.)** admixed with lesser numbers of lymphocytes **(1 pt.)**, plasma cells and rare multinucleated foreign-body macrophages **(1 pt.)**. The poorly-formed granulomas are centered on individual or groups of 30-60um **(1 pt.)** diameter yeasts **(1 pt.)**which have a 4-5um thick double contour hyaline wall **(1 pt.)** and are filled with granular to flocculent, basophilic material or occasionally few 5-8um round endospores **(1 pt.)**. The inflammatory cells extend into surrounding alveoli, where they are admixed with abundant flocculent edema **(1 pt.)**, large numbers of alveolar macrophages **(1 pt.)**, and marked septal congestion, and patchy type II pneumocyte hyperplasia **(1 pt.)**. Airways are expanded **(1 pt.)** by similar clusters of inflammatory cells admixed with low numbers of yeasts, abundant edema, and rafts of desquamated epithelium .

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, bronchointerstitial, pyogranulomatous, diffuse, severe, with numerous endosporulating yeasts. **(3 pt.)**

CAUSE: *Coccidiodes immitis or posadasii* **(1 pt.)**

O/C – **(1 pt.)**

WSC 2009-2010, Conference 3, Case 3.

Tissue from a dog.

MICROSCOPIC DESCRIPTION: Haired skin: Within the dermis, projecting downward **(1pt.)** from the moderately thickened epidermis, there is a cup-shaped, endophytic **(1pt.)**, well-demarcated, moderately cellular, expansile neoplasm which compresses adjacent adnexa **(1pt.)**. The neoplasm is composed of stratified layers of polygonal epithelial cells **(1pt.)** forming a complex wall **(1pt.)** supported by a moderately thick fibrovascular stroma. Neoplastic epithelial cells are polygonal with abundant eosinophilic cytoplasm and distinct cell borders **(1pt.)**; the majority of cells contain a large amphophilic fibrillar intracytoplasmic inclusion **(1pt.)** which expands the cell. Keratinization is abrupt, however some neoplastic cells contain large clumped keratohyatin granules. . Nuclei are round to oval with finely clumped chromatin and 1-2 small basophilic nuclei **(1pt.)**; many nuclei are swollen by a large basophilic ground-glass intranuclear inclusion which peripheralizes the chromatin and is often surrounded by a clear halo. **(1pt.)** Cytoplasmic invaginations into the nucleus are also common. Scattered through the stratum spinosum are occasional enlarged cells with shrunken nuclei and perinuclear clearing (koilocytes) **(2pt.)**. Mitoses are rare **(1pt.)**. In some areas there is necrosis and loss **(1pt.)** of neoplastic epithelium and mild hemorrhage. The adjacent epidermis is mildly thickened up to six cell layers thick **(1pt.)** and there are small numbers of lymphocytes, histiocytes and rare plasma cells scattered throughout the dermis**.**

MORPHOLOGIC DIAGNOSIS: Haired skin: Inverted viral papilloma. **(3pt.)**

CAUSE: Canine papillomavirus **(2pt.)**

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

WSC 2009-2010, Conference 3, Case 4.

Tissue from a fox.

MICROSCOPIC DESCRIPTION: Liver: There is diffuse disassociation of hepatic cords **(2 pt.)**. Hepatocytes are mildly swollen and hepatocyte cytoplasm often contains one or multiple small discrete clear vacuoles **(2 pt.)**. Hepatocyte nuclei are often swollen by 4-5um magenta intranuclear **(2 pt.)** viral inclusions **(2 pt.)** that are surrounded by a clear halo **(1 pt.)** . Multifocally there are rounded up necrotic hepatocytes**(2 pt.)**. Small aggregates of fibrin are present within the space of Disse and within sinusoids **(1 pt.)** . There are mildly increased numbers of neutrophils within sinusoids**(1 pt.)** .

MORPHOLOGIC DIAGNOSIS**:** Liver: Hepatitis, necrotizing, multifocal, mild, with hepatocellular disassociation and numerous intranuclear viral inclusions. **(3 pt.)**

CAUSE: Canine adenovirus type 1 (Infectious canine hepatitis virus). **(2 pt.)**

NAME ANOTHER AFFECTED ORGAN: Kidney (cornea ok) **(1 pt.)**

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