WSC 2018-2019 Conference 2.

Case 1. Tissue from a ferret.

(Please note that two slightly different sections were submitted by the contributor. In one section the lung is diffusely effaced by the inflammation lesion described below. The second section, which is scanned and available online has additional changes which contribute to a better slide description. I'm describing the second slide.)

MICROSCOPIC DESCRIPTION: Lung: Approximately 50% of the pulmonary architecture is effaced by numerous coalescing poorly-formed pyogranulomas **(1pt)** which are composed of a central core of numerous viable and degenerating neutrophils **(1pt)** admixed with abundant cellular debris. These cells are surrounded by a thick layer of epithelioid macrophages **(1pt)** and more peripherally, moderate numbers of lymphocytes **(1pt)** and plasma cells **(1pt)** enmeshed in concentric laminations of collagen and fibroblasts. The architecture of the pulmonary parenchyma between the areas of inflammation parts is variably effaced by numerous foamy macrophages and occasional multinucleated foreign body macrophages **(1pt)** admixed with lymphocytes plasma cells smaller numbers of neutrophils and abundant cellular debris, as well as small amounts of edema fluid, polymerized fibrin **(1pt)** and occasional cholesterol clefts **(1pt)** and crystalline mineral. In subpleural areas, alveolar septa remain, and alveoli are modestly expanded by activated intraseptal macrophages. The surrounding alveoli are filled with inflammatory cells, polymerized fibrin, and edema fluid as previously described. Within areas of inflammation, airways are filled by reflux of edema and inflammatory cells as previously described.**(1pt)** which is further admixed with mucin and slough airway epithelium, including goblet cells. Peribronchiolar and perivascular connective tissue is infiltrated by moderate to large numbers of lymphocytes and plasma cells, and is multifocally edematous; **(1pt)** similar changes are present in the pleura overlying inflamed areas. Within the adjacent less affected areas, the airway epithelium is mildly to moderately hyperplastic, with numerous transmigrating neutrophils, and the lumen contains abundant brightly eosinophilic proteinaceous material with scattered low to moderate numbers of degenerate neutrophils and cellular debris. **(1pt)** Adjacent alveoli are filled with abundant pink proteinaceous fluid (edema) and small numbers of macrophages with lymphocytes and rare neutrophils. At one edge of the section in the less affected areas subpleural alveoli **(1pt)** are filled with foamy macrophages **(1pt)** admixed with occasional lymphocytes to a depth of approximately ½ mm (endogenous lipid pneumonia).

MORPHOLOGIC DIAGNOSIS: 1. Lung: Pneumonia, interstitial **(1pt)**, pyogranulomatous **(1pt)**, multifocal to coalescing, severe, with cholesterol clefts.

2. Lung, subpleural alveoli: Histiocytosis, focally extensive, moderate **(1pt)**

CAUSE: Ferret coronavirus **(3pt.)**

NAME THE CONDITIONS: Ferret coronavirus-associated disease, endogenous lipid pneumonia

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

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Case 2. Tissue from an ox.

MICROSCOPIC DESCRIPTION: Liver: There is diffuse periportal **(2pt)** hepatocellular necrosis **(2pt)** throughout the section which often extends into midzonal hepatocytes as well **(1pt)**. Periportal and midzonal hepatocytes are either rounded up, disassociated, brightly eosinophilic with granular cytoplasm and pyknotic to karyorrhectic nuclei **(2pt)** (necrotic) or totally lost and replaced by abundant hemorrhage **(2pt)** and few infiltrating neutrophils. Within areas of necrosis, sinusoidal lining cells remain as well as occasional hypertrophic Kupffer cells. **(1pt)** Lymphatics are moderately dilated within adjacent portal areas **(1pt)**; portal areas also contain hemorrhage, few infiltrating neutrophils, and low numbers of pre-existing lymphocytes and plasma cells. Remaining midzonal and centrilobular hepatocytes are swollen, with one or multiple discrete cytoplasmic vacuoles. **(2pt)** Hepatocellular swelling effaces is sinusoids in these areas. There is mild dilation of capsular lymphatics. There is extensive acid hematin deposition (artifact) throughout the section.

MORPHOLOGIC DIAGNOSIS: Liver: Hepatocellular necrosis **(1pt)**, periportal **(1pt)** to midzonal, diffuse, with hemorrhage **(1pt**.)

NAME THE CONDITION: Acute bovine liver disease. **(3pt.)**

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

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Case 3. Tissue from a dog.

(NOTE: Interesting entity, not a particularly descriptive slide. If you have better things to do, note the changes, and move on..)

MICROSCOPIC DESCRIPTION: Tonsil: The fibrous connective tissue framework **(2pt)** of the tonsil is markedly expanded **(1pt)** by the presence of numerous dilated lymphatic vessels **(3pt)** which are lined by a single layer of endothelium **(2pt)** and surrounded by small amounts of collagen **(1pt)**. There is no smooth muscle wall present **(2pt)**. Tonsillar veins and venules are moderately congested (likely a result of excision). Dilated lymphatics often contain small amounts of fibrin hemorrhage lymphocytes and rare macrophages and neutrophils. **(1pt)** There is mild hyperplasia of tonsillar follicles several secondary follicles with prominent mantle zones oriented toward the overlying epithelium, as well as expansion of the interfollicular lymphoid tissue. **(1pt)** As is the custom in normal tonsils, lymphocytes and fewer neutrophils infiltrate the overlying surface epithelium as well as crypt epithelium. Several crypts are dilated with abundant keratin debris, sloughed epithelial cells, and rare neutrophils and lymphocytes. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Tonsil: tonsillar lymphangiomatous polyp. **(5pt)**

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

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Case 4. Tissue from a dog.

(Multiple punch biopsies of skin are submitted for evaluation. The description below is a cumulative description for the aggregate biopsy. Make sure you examine all of the sections to ensure you have seen all of the diagnostic features described.)

MICROSCOPIC DESCRIPTION: Haired skin: Multifocally within the superficial dermis, the ostia of numerous hair follicles is dilated. **(1pt)** Affected follicles exhibit mild to moderate follicular keratosis and marked pseudoepitheliomatous hyperplasia **(2pt)** of follicular epithelium, with anastomosing cords of follicular epithelium outward in all directions from the follicle. **(1pt)** Proliferating epithelial cells display prominent intercellular bridges, mild intercellular edema, and occasional mitotic figures. **(1pt)** The superficial dermis surrounding hypertrophic follicles contains low to moderate numbers of fibroblasts separated by abundant amphophilic mucin **(2pt)** and small numbers of macrophages (muciphages). The nodules composed of hyperplastic follicular epithelium and associated mucin are 1.5mm in diameter and compress the adjacent adnexal structures. **(1pt)** In several sections, the follicle contains a cross section of a degenerate arthropod **(1pt)** measuring approximately 175um in diameter, with a chitinous exoskeleton, jointed appendages, and cross sections of skeletal muscle. **(1pt)** The arthropod parasite is separated from the follicular keratin layer and epithelium by a homogenous hyaline material up to 50 µ in diameter. **(1pt)** Throughout all sections, there is multifocal mild edema particularly within the superficial dermis and lymphatics are often dilated, but minimal inflammatory infiltrate. **(1pt)** In some sections, the superficial dermis and epidermis R throat and thrown into small papillary folds. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Haired skin, follicles: Pseudoepitheliomatous hyperplasia, **(2pt)** multifocal, severe, with marked perifollicular mucin **(1pt)**, and occasional intrafollicular trombiculid nymphs. **(1pt.)**

CAUSE: Trombiculid mite or chigger (full credit). This one is *Straelensia cyanotis*. **(2pt)**

O/C – **(1 pt.)**