WSC 2012-2013, Conference 10

Case 1. Tissue from a dog.

(NOTE: Some sections did not have liver.)

MICROSCOPIC DESCRIPTION: Kidney: Diffusely, glomerular tufts **(1 pt)** are segmentally to globally expanded by variable amounts of amorphous, finely fibrillar to waxy, lightly eosinophilic material **(2 pt)** (amyloid) **(1 pt)** that compresses and obscures glomerular architecture. Small numbers of glomerular tufts are effaced by amyloid, rendering them hypocellular and these contain few pyknotic nuclei or rare karyorrhectic debris (necrosis **(1 pt)**). Multifocally, tubules are lined by swollen, vacuolated epithelial cells (degeneration) **(1 pt)** which occasionally are condensed, brightly eosinophilic and have occasional pyknotic nuclei (necrosis) **(1 pt)**. Occasionally tubules contain small amounts of granular protein and/or cellular debris.

Liver: Diffusely, sinusoids are expanded by large amounts of finely fibrillar to waxy, lightly eosinophilic material **(1 pt)** (amyloid) **(2 pt)** that is primarily within the subepithelial space **(1 pt)**. The amyloid compresses hepatocytes and distorts hepatic plate architecture **(2 pt)**. There are numerous obstructed bile canaliculi **(1 pt)** and bile-laden hepatocytes throughout the section, most heavily in centrilobular areas. Portal lymphatics are mildly to moderately dilated.

MORPHOLOGIC DIAGNOSIS: 1. Kidney, glomeruli: Amyloidosis, segmental to global, diffuse, moderate to severe with mild tubular degeneration and necrosis. **(2 pt)**

2. Liver, space of Disse: Amyloidosis, diffuse, severe, with hepatocyte atrophy and cholestasis. **(2 pt)**

NAME A LIKELY BREED: Shar Pei. **(2 pt)**

O/C: (1 pt)

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Case 2. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Cerebral cortex, telecephalon: The meninges are diffusely and markedly expanded **(1pt)** by large numbers of macrophages **(1pt)** and neutrophils **(1pt)**, and lesser numbers of lymphocytes and plasma cells **(1pt)** which are admixed with abundant cellular debris **(1pt)**. The meninges are further expanded by moderate numbers of plump fibroblasts and small amounts of loosely arranged collagen **(1pt)**. This inflammatory infiltrate multifocally extends into and replaces neuropil of the most superficial cortex **(1pt)**or extends along Virchow Robin's spaces **(1pt)**. Macrophages are plump, up to 25um **(1pt)** in diameter with abundant granular eosinophilic cytoplasm, and occasionally contain one to ten, 2-4um diameter **(1pt)**, round to oval intracytoplasmic yeasts**(1pt)** with a central 1um basophilic nucleus surrounded by a clear zone **(1pt)**. Within some regions of the cortex, there are aggregates of perivascular aggregates of plasma cells and fewer lymphocytes surrounding vessels with reactive endothelium **(1pt)**; in these areas the neuropil is rarified, and oligodendroglia have abundant clear cytoplasm (edema) **(1pt)**. There is mild gliosis within the adjacent, less affected neuropil.

MORPHOLOGIC DIAGNOSIS: Cerebrum: Meningoencephalitis, pyogranulomatous, multifocal, moderate, with intrahistiocytic yeasts. **(3pt)**

CAUSE: *Histoplasma capsulatum* var. *capsulatum* **(2pt)**

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

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Case 3. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Lymph node: There is diffuse loss of normal cortical architecture **(1 pt)**. Cortical lymphoid follicles are diffusely obscured or replaced by necrotic debris **(1 pt)** admixed with fibrin, occasional hemorrhage, numerous macrophages **(1 pt)** and fewer neutrophils **(1 pt)**. Macrophages multifocally contain phagocytosed cellular debris **(1 pt)**. More extensive areas of necrosis occasionally extend into the parafollicular area. There is widespread lymphocytolysis **(1 pt)** and plasmacytosis **(1 pt)**. There is diffuse hemorrhage **(2 pt)** within the subcapsular and medullary sinuses, and occasionally sinuses are widely expanded by hemorrhage and polymerized fibrin **(1 pt).** and siderosis. There is infiltration of the perinodal fat by low to moderate numbers of lymphocytes and plasma cells admixed with cellular debris **(1 pt)**. Rarely, 2-3 um round coccobacilli **(2 pt)** are present within the cytoplasm of macrophages.

MORPHOLOGIC DIAGNOSIS: Mesenteric lymph node: Lymphadenitis, necrotizing, diffuse moderate to severe, with preexistent moderate reactive hyperplasia, hemorrhage, and rare intracytoplasmic coccobacilli. **(4 pt)**

CAUSE: *Neorickettsia helminthoeca* **(3 pt)**

O/C: (1pt)

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Case 4. Tissue from a rabbit.

MICROSCOPIC DESCRIPTION: Liver: Diffusely, within all sections of the hepatic lobule, **(1 pt)** hepatocytes are either degenerate**(1 pt)**, characterized by retention of hepatic cord architecture with granular eosinophoilic cytoplasm and one to numerous clear vacuoles **(1 pt)** within the cytoplasm, or necrotic **(1 pt)** as characterized by loss of plate architecture **(1 pt)**, cytoplasmic hypereosinophilia and nuclear pyknosis, karyorrhexis, and karyolysis. Multifocally bile ducts are ectatic (up to 4 mm) and compress the surrounding hepatic parenchyma. Ducts are lined by a single layer of columnar to cuboidal epithelial cells that form numerous branching papillary projections **(1 pt)** that occlude the lumina and are supported by a coarse fibrovascular stroma. Occasionally, epithelial cells contain protozoal macrogametes **(1 pt)** and microgametes**(1 pt)** in various stages of gametogony. The macrogametes are round, 20-50 um in diameter, with a central nucleus, prominent nucleolus, and brightly eosinophilic 3-4 um diameter peripheral granules. The microgametes are round, 15-25 um in diameter, with peripheral lightly basophilic granules. Within the lumen there are numerous oocysts, admixed with granular eosinophilic cellular debris. The unsporulated oocysts **(1 pt)**are 20-40 um in diameter with thick refractile walls that are often collapsed and contain lightly basophilic, granular cytoplasm with a nucleus. **(1 pt)** Ectatic bile ducts are surrounded by a narrow rim of fibrous connective tissue, moderate numbers of lymphocytes, fewer macrophages and plasma cells, and low numbers of degenerate neutrophils **(1 pt)**, along with increased clear space and ectatic lymphatics (edema). Diffusely, there is mild chronic portal and periportal inflammation with occasional bile duct hyperplasia.

MORPHOLOGIC DIAGNOSIS: 1: Liver: Necrosis, massive, diffuse. **(2pt)**

2. Liver: Cholangiohepatitis, proliferative and lymphoplasmacytic, diffuse, mild to moderate with coccidial oocysts and gametocytes and multiple colonies of bacteria. **(2 pt)**

CAUSE: Lepine calicivirus **(2 pt)** and *Eimeria steidae*. **(2 pt)**

O/C: (1pt)