WSC 2016-2017, Conference 19

Case 1. Tissue from a squirrel.

MICROSCOPIC DESCRIPTION (of digital slide): Section of diencephalon with hippocampal formation. Multifocally within the hippocampal formation **(1pt.)**, thalamus **(1pt.)**, and hypothalamus **(1pt.)**, there are multifocal, random and bilateral foci of cavitation **(1pt.)** necrosis **(1pt.)** which affect both grey and white matter. Foci of necrosis measure up to 600um in diameter and contain aggregates of moderate numbers of macrophages **(1pt.)**, fewer eosinophils **(1pt.)** and Gitter cells **(1pt.)**, and rare neutrophils. Several of the foci contain cross- and tangential sections of larval nematodes **(1pt.)** which measure up to 75um in diameter with coelomyarian polymyarian musculature, a pseudocoelom, large lateral chords, an intestine with tall columnar epithelium, and prominent lateral alae **(1pt.)**. The adjacent neuroplil contains increased numbers of astrocytes, and microglia (gliosis) **(1pt.)** as well as few eosinophils. There are moderate numbers of lymphocytes and plasma cells within perivascular spaces. **(1pt.)** Adjacent meninges are expanded by low to moderate to large numbers of macrophages, lymphocytes, plasma cells, eosinophils, and rare neutrophils. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Cerebrum at level of diencephalon: Encephalitis, necrotizing **(1pt.)** and eosinophilic **(1pt.)**, multifocal, random, with eosinophilic and lymphohistiocytic meningitis **(1pt.)** and larval ascarids. **(1pt.)**

CAUSE: *Baylisascaris procyonis* **(2pt.)**

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

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Case 2. Tissue from an elk.

MICROSCOPIC DESCRIPTION: Junction of esophagus and rumen **(1pt.)**: Extending over about 75% of the section, there is a large area of necrosis affecting primarily the submucosa, muscular layers and the serosa; **(1pt.)** architecture of the tissues is retained, but cell definition and staining affinity is lost **(1pt.)** (coagulative necrosis **(1pt.)**) At one edge of the section, the esophagus is transmurally **(1pt.)** affected, with clefting within the submucosa undermining variably necrotic and viable mucosa. Within necrotic areas, vessels (including several large arterioles) are variably thrombosed **(1pt.)**, are outlined by eosinophilic protein (fibrinoid necrosis) **(1pt.)**, or totally necrotic with only architectural outlines remaining (those incorporated in larger areas of necrosis). Rarely, endothelial cells**(1pt.)** are the few remaining vessels contain a single, lightly basophilic glassy intranuclear viral inclusion **(1pt.)** which enlarges the nucleus. There is abundant globular basophilic clumped nuclear debris as well as large colonies of bacilli **(1pt.)** scattered in aggregates throughout the devitalized tissue. Much of the tissue contains maximally devitalized neutrophils and clouds of basophilic cellular debris. **(1pt.)** Within the overlying vital submucosa, submucosal vessels are dilated, occasionally contain non-occlusive fibrin thrombi, and numerous neutrophils which emigrate into the adjacent submucosa. **(1pt.)** Rumenal papilli are multifocally eroded and there is multifocal ulceration **(1pt.)** with moderate numbers of neutrophils within the mildly edematous submucosa and mucosa.

MORPHOLOGIC DIAGNOSIS: Esophagus, rumen: Coagulative necrosis (infarction) **(1pt.)**, transmural, **(1pt.)**focally extensive, with multifocal vasculitis, thrombosis, and fibrinoid necrosis**(1pt.)** and rare endothelial intranuclear viral incliusions. **(1pt.)**

Cause: Bovine adenovirus **(2pt.)**

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

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Case 3. Tissue from a chameleon.

MICROSCOPIC DESCRIPTION: Lung: Faveolar septa **(1pt.)** are multifocally and markedly expanded by aggregates of macrophages **(1pt.)** underneath the epithelium **(1pt.)**, and which multifocally replace the epithelium. Macrophages range up to 30um in diameter, and contain numerous gray filamentous **(1pt.)** bacilli **(1pt.)** within their cytoplasm. Faveolar septa are also expanded by moderate congestion **(1pt.)** and multifocal hemorrhage **(1pt.)** and infiltration by moderate numbers of lymphocytes. Occasionally blood vessels contain partially occlusive thrombi which contain filamentous bacilli. **(1pt.)** There is multifocal necrosis of faveolar epithelium **(1pt.)**, as well as ciliary loss **(1pt.)** in less affected areas. The lumen contains mild hemorrhage, proteinaceous fluid and clumps of filamentous bacilli. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Lung: Faveolitis **(1pt.)**, histiocytic **(1pt.)**, multifocal to coalescing, moderate, with numerous intracytoplasmic filamentous bacilli. **(1pt.)**

CAUSE: *Mycobacterium cheloniae* (or other appropriate *Mycobacterium* species). **(3pt.)**

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

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CASE 4. Tissue from a sea lion.

MICROSCOPIC DESCRIPTION: Urinary bladder **(1pt.)**: Transmurally **(1pt.)** infiltrating the bladder wall and extending downward from the mucosal surface, there is an unencapsulated, infiltrative, moderately cellular, poorly demarcated neoplasm. **(2pt.)** Neoplastic cells are arranged in nests and cords **(1pt.)**, and supported by a fine fibrovascular stroma **(1pt.)**. Neoplastic cells are polygonal **(1pt.)** and have a moderate amount of a finely granular eosinophilic cytoplasm. **(1pt.)** Nuclei are irregularly round with finely stippled chromatin and often a single prominent eosinophilic nucleus. **(1pt.)** Mitotic figures average 2-3/400X field. **(1pt.)** Large nests of neoplastic cells often contain central areas of necrosis. **(1pt.)** Neoplastic cells are occasionally present within dilated lymphatics. **(1pt.)** The overlying mucosa is multifocally eroded and or ulcerated. **(1pt.)** The mucosal is multifocally edematous, infiltrated by neutrophils in areas of ulceration, and contains moderate numbers of lymphocytes (occasionally in aggregates between tumor nests), and submucosal vessels are often dilated and congested. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Urinary bladder: Transitional cell carcinoma. **(5pt.)**

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