

WSC 2011-2012, Conference 23

Case 1. Tissue from a squirrel monkey.

MICROSCOPIC DESCRIPTION: Multifocally throughout the section there are well-demarcated **(1pt)** areas in which hepatocytes are pale **(1pt)** due to loss of differential staining, shrunken, and cytoplasm is often fragmented or condensed into eosinophilic globules **(1pt)**, and nuclei are shrunken but intact (coagulative necrosis). The sinusoids within these areas are often devoid of erythrocytes. **(1pt)** Nuclei at the edges **(1pt)** of the areas of necrosis, as well as in adjacent hepatocytes **(1pt)** often contain a single eosinophilic viral inclusion **(2 pt)** measuring up to 4um in diameter **(1pt)**, which peripheralizes the chromatin **(1pt)**. Diffusely, hepatocytes contain one to multiple clear discrete vacuoles **(1pt)** (lipidosis) **(1pt)**.

MORPHOLOGIC DIAGNOSIS: 1). Liver: Hepatitis, necrotizing, multifocal with intranuclear viral inclusions. **(3pt.)**

2) Liver, hepatocytes: Lipidosis, diffuse, moderate. **(1pt)**

CAUSE: Herpesvirus simplex, varicella virus **(2pt)**

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

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Case 2. Tissue from a red-handed tamarin.

MICROSCOPIC DESCRIPTION: Cerebrum, cerebellum, and brainstem: Multifocally and randomly **(1pt)** scattered throughout all sections, there are numerous discrete aggregates of histiocytes **(1pt)** that replace normal architecture **(1pt)** in both the gray and to a lesser extent, the white matter. These aggregates also contain small amounts of cellular debris **(1pt)**, rare neutrophils **(1pt)** and lymphocytes, and are often present in close association with blood vessels **(1pt)**. Rarely, they are associated with hemorrhage **(1pt)**. The adjacent neuropil is hypercellular (gliosis) **(1pt)** and contains increased numbers of microglia and astrocytes. Scattered throughout the neuropil are pale pink cysts **(2 pt)** ranging up to 140um **(1pt)** containing numerous microsporidian spores **(1pt)**. The meninges are multifocally and mildly expanded by low numbers of histiocytes and lymphocytes. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Brain: Encephalitis: histiocytic and necrotizing, multifocal, severe, with numerous microsporidian cysts. **(3pt)**

NAME THE AGENT: *Encephalitozoon cuniculi* **(3 pt)**

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

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Case 3. Tissue from a rhesus macaque.

MICROSCOPIC DESCRIPTION: Ovary and fimbria: Effacing 95% of the ovary **(1pt)** is an unencapsulated, poorly demarcated, densely cellular, infiltrative neoplasm **(2pt)** composed of sheets **(1pt)** of round to polygonal germ cells **(1pt)** aligned along pre-existent stroma **(1pt)**. Neoplastic cells are polygonal with a moderate amount of granular eosinophilic cytoplasm **(1pt)** and distinct cell borders **(1pt)**. Nuclei are irregularly round with finely stippled chromatin and 1-2 large magenta nucleoli **(1pt)**. There is moderate anisokaryosis **(1pt)**, frequent cytoplasmic invaginations **(1pt)**, and the mitotic rate averages 2-3/400X field **(1pt)**. There is marked cellular degeneration within the center of the neoplasm and the neoplastic cells are separated by abundant edema **(1pt)** which distends capillaries between cells. Cellular apoptosis is extensive **(1pt)**, especially within central areas of the neoplasm, and in more solid areas there is necrosis and dropout, resulting in formation of pseudocystic structures **(1pt)**. Small foci of mineral **(1pt)** are scattered throughout the neoplasm.

MORPHOLOGIC DIAGNOSIS: Ovary: Dysgerminoma **(3pt)**

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

Case 4. Tissue from an African Green Monkey.

MICROSCOPIC DESCRIPTION: Lung: Throughout the section, centered on airways **(1pt)**, are large foci of lytic necrosis **(2pt)** which range up to a centimeter in diameter. Within these sections, normal septal and alveolar architecture is effaced **(1pt)** by infiltrates of large numbers of degenerate neutrophils **(1pt)** admixed with abundant cellular debris **(1pt)**, fewer viable neutrophils and histiocytes, and moderate amounts of fibrin, hemorrhage, and edema. Peripheral to these areas, alveoli are flooded with abundant edema fluid **(1pt)** and polymerized fibrin **(1pt)**, and contain moderate numbers of viable neutrophils, foamy alveolar macrophages, hemorrhage and cellular debris. Alveolar septa are expanded by edema, congestion, circulating neutrophils and histiocytes **(1pt)**. Bronchioles and small bronchi contain a luminal exudate **(1pt)** of numerous degenerate neutrophils **(1pt)**, cellular debris, mucus, edema fluid, and fibrin, and there is multifocal necrosis of lining epithelium with occasional neutrophil transmigration. Throughout the section, atelectasis is marked **(1pt)**, even in unaffected areas of the section. There is extensive hemorrhage and fibrin deposition within the subpleural alveoli, pleura, and mild mesothelial hypertrophy along the pleural surface **(1pt)**.

MORPHOLOGIC DIAGNOSIS: Lung: Bronchopneumonia, necrosuppurative, multifocal, severe, with fibrinous pleuritis. **(3pt)**

CAUSE: *Francisella tularensis* (*Yersinia pseudotuberculosis* and *Bordetella bronchiseptica* OK) **(3pt)**

O/C: (1pt)