WSC 2013-2014, Conference 18

Case 1. Tissue from a horse.

MICROSCOPIC DESCRIPTION: Lung: Within a focally extensive area approximating 30% of the section, alveolar septa are diffusely and markedly thickened up to 5x normal **(1pt)** by abundant mature collagen **(1pt)**, plump fibroblasts **(1pt)**, moderate numbers of neutrophils, fewer histiocytes, congested capillaries, and often a solid lining of hyperplastic type II pneumocytes **(1pt)**. Alveolar spaces are filled by moderate numbers of viable and degenerate neutrophils **(1pt)**, foamy alveolar macrophages **(1pt)**, fewer eosinophils, sloughed degenerate type II pneumocytes, cellular debris, fibrin, and edema fluid **(1pt)**. Rarely, alveolar macrophages contain a single, 4-6 um, smudgy basophilic **(1pt)** intranuclear viral inclusion **(1pt)** which is often surrounded by a clear halo. In less affected areas of the lung, alveolar septa are expanded by small amounts of fibrous connective tissue and marked vascular congestion **(1pt)** and alveolae contain small amounts of fibrin**.** Bronchioles within the affected area contain a similar cellular population to that seen in alveoli (likely as a result of reflux from alveoli.) The lobular septal and pleural fibrous connective tissue is multifocally expanded **(1pt)** up to 2mm and there are numerous thick-walled arterioles with a loosely arranged, myxomatous tunica media scattered throughout this fibrous connective tissue. Interlobular septa are multifocally expanded by moderate edema , and often contains moderate numbers of neutrophils, macrophages and lymphocytes **(1pt)**.

MORPHOLOGIC DIAGNOSIS:

Lung: Pneumonia, necrotizing and fibrosing, interstitial, chronic, focally extensive, severe, with marked type II pneumocyte hyperplasia and rare intrahistiocytic intranuclear viral inclusions **(3 pts)**

NAME THE DISEASE: Multinodular pulmonary fibrosis **(2pt)**

CAUSE: Equine herpesvirus-5 **(2pt)**

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

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Case 2. Tissue from a horse.

(Not a great descriptive case, as inclusion bodies are not present. This is not an uncommon finding in rabies, but it makes it difficult to get to the correct answer.)

MICROSCOPIC DESCRIPTION: Spinal cord **(1pt)**: Throughout the gray matter **(1pt)**, neurons multifocally are swollen **(1pt)** with light pink cytoplasm **(1pt)** (chromatolysis and degeneration) **(3pt)**. There is diffuse mild to moderate gliosis **(1pt)** of the gray matter, and gray matter vessels are surrounded **(1pt)** by two or more layers of lymphocytes and fewer histiocytes and macrophages. There are rare swollen dilated myelin sheaths with swollen axons within the peripheral gray matter (spheroids) **(1pt)**. Within the adjacent white matter, vessels contain perivascular cuffs **(1pt)** of low to moderate numbers of lymphocytes **(1pt)** and plasma cells , and the overlying meninges **(1pt)** are multifocally infiltrated by low to moderate numbers of similar cells.

MORPHOLOGIC DIAGNOSIS: Spinal cord, gray matter: Neuronal degeneration, multifocal moderate, with mild gliosis and lymphoplasmacytic meningitis. **(3pt.)**

CAUSE: Equine rhabdovirus (rabies). (Equine flavivirus or equine arbovirus OK) **(3pt)**

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

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Case 3. Tissue from a chimp.

MICROSCOPIC DESCRIPTION: Heart, right ventricle: Diffusely, myocardiocytes **(1pt)**, especially in subendocardial **(1pt)** and subepicardial **(1pt)** areas are separated, surrounded, and replaced **(1pt)** by anastamosing bands of mature collagen **(2pt)** populated by low numbers of quiescent fibrocytes **(1pt)**, as well as rare small aggregates of mature adipocytes **(1pt)**. Myocardiocytes within these areas exhibit marked variations in fiber size **(2pt)**, are mildly atrophic **(1pt)**, with nuclei that exhibit regenerative changes including a "box car" appearance **(1pt)** or a linear band of condensed chromatin ("Anistchkow cells") **(1pt) .**

MORPHOLOGIC DIAGNOSIS: Heart atrium: Myofiber atrophy and loss, diffuse, moderate, with multifocal cardiomyocayte regeneration. **(4pt.)**

NAME THE DISEASE: Fibrosing cardiomyopathy of great apes. **(2pt)**

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

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Case 4. Tissue from a sheep.

MICROSCOPIC DESCRIPTION: Liver: Portal areas **(1pt)** are diffusely expanded and occasionally bridged by abundant collagen**(1pt)** (portal fibrosis) **(1pt)** and numerous variably-sized bile ducts**(1pt)** (biliary hyperplasia) **(2pt)**, admixed with low numbers of lymphocytes **(1pt)**, plasma cells, and plump fibroblasts **(1pt)**. Fibrous connective tissue frequently surrounds, separates and individualizes periportal hepatocytes **(1pt)**, which are shrunken and brightly eosinophilic (degeneration.) **(1pt)**. Scattered throughout the section, low numbers of bile canaliculi are distended by bile plugs **(1pt)** (cholestasis) **(1pt).**

MORPHOLOGIC DIAGNOSIS: Liver: Fibrosis, portal and bridging, diffuse, moderate, with marked biliary hyperplasia (ductular reaction), and mild lymphoplasmacytic portal hepatitis. **(3 pt.)**

CAUSE: Sporodesmin toxicity **(2pt.)**

NAME THE DISEASE: Facial eczema **(2pt.)**

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