

WSC 2015-2016, Conference 5

Case 1. Tissue from a horse.

MICROSCOPIC DESCRIPTION: Glans penis (no way to tell on this section). Effacing approximately 70% of the section, is an exophytic, infiltrative, well-demarcated, unencapsulated, moderately cellular multilobular neoplasm. **(2 pt.)** The neoplasm is composed of lobules, islands, and nests **(1 pt.)** of squamous epithelium on a moderate fibrous stroma **(1 pt.)**. Neoplastic cells are polygonal **(1 pt.)**, with abundant basophilic cytoplasm and distinct cell borders, intracellular bridges **(1 pt.)**, and exhibit abrupt keratinization **(1 pt.)** centrally within lobules, as well as occasionally mineralization **(1 pt.)**. Nuclei are irregularly round with finely stippled chromatin and 1-3 basophilic nucleoli. **(1 pt.)** There is marked anisokaryosis and anisocytosis **(1 pt.)**, and nuclei undergo pyknosis within keratinizing cells. Mitotic figures average 1 per 400X field **(1 pt.)**. There are small to moderate numbers of neutrophils **(1 pt.)** within the neoplasm (often in areas of keratinization), and infiltrating the stroma, as well as aggregates of low numbers of lymphocytes and plasma cells scattered throughout. The surface of the neoplasm is ulcerated **(1 pt.)**. Nests of neoplastic cells infiltrate the underlying submucosa, where they are often surrounded by concentric rings of fibrous connective tissue (desmoplasia) **(1 pt.)**. There is mild proliferation of blood vessels in the mildly edematous submucosa, which are surrounded also by plump fibroblasts and small numbers of lymphocytes and plasma cells. **(1 pt.)**

MORPHOLOGIC DIAGNOSIS: Glans penis: Squamous cell carcinoma. **(4 pt.)**

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

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Case 2. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Lung: Throughout both sections, there are multifocal to coalescing areas of fibrosis composed of abundant collagen **(1pt)** and numerous fibroblasts **(1pt)** which efface alveolar architecture **(1pt)**, surrounding and separating remaining airways, smooth muscle, and blood vessels. At the periphery of these areas of diffuse fibrosis, alveolar septa are diffusely and markedly thickened **(1pt)** up to 5x normal by abundant mature collagen, plump fibroblasts, low numbers of histiocytes, congested capillaries, and often a solid lining of hyperplastic type II pneumocytes **(1pt)**. Alveolar spaces **(1pt)** are filled by moderate numbers of viable, foamy alveolar macrophages **(1pt)** and small amounts of cellular debris, fibrin, and edema fluid **(1pt)**. Airways **(1pt)** are often filled with an exudate composed of numerous intact neutrophils **(1pt)** admixed with fewer foamy macrophages, moderate amounts of cellular debris, and sloughed epithelium. The lining epithelium is mildly hyperplastic . **(1pt)** The submucosa is infiltrated by low to moderate numbers of lymphocytes and plasma cells **(1pt)** and there is both smooth muscle **(1pt)** and submucosal glandular hyperplasia. Within areas of fibrosis, lymphatics are dilated. The overlying pleura is multifocally expanded by fibrosis and lined by a single layer of hyperplastic mesothelial cells. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Lung: Fibrosis, interstitial multifocal to coalescing, moderate to severe, with diffuse smooth muscle hyperplasia and alveolar hyperplasia . **(4 pt)**

NAME THE CONDITION: Idiopathic pulmonary fibrosis **(2pt)**

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

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Case 3. Tissue from a rat.

MICROSCOPIC DESCRIPTION: Liver: There is diffuse mild bridging portal fibrosis (**2 pt.**) separating and surrounding hepatic lobules. These areas of fibrosis are multifocally expanded by varying combinations and concentration of macrophages (**1 pt.**) and eosinophils (**1 pt.**) with fewer lymphocytes. In one area, the area of fibrosis contains numerous variably sized granulomas (**1 pt.**) ranging up to 3mm which are centered on abundant brightly eosinophilic acellular debris (**1 pt.**). Multifocally, some areas of fibrosis contain numerous 40 x 60 µm embryonated nematode eggs (**1 pt.**) with a 10-15 µm thick shell with radial striations and bipolar opercula. (**1 pt.**) Rarely, eggs are surrounded by crystalline mineral (**1 pt.**). Multifocally within the hepatic parenchyma, there are occasional cross- and tangential sections of adult aphasmid nematodes (**1 pt.**) which range from 250-300µm with an outer cuticle, pseudocoelom, polymyarian-coeloyarian musculature, digestive tract with uninucleate epithelium, and a uterus containing unshelled embryos. (**1 pt.**) Hepatocytes surrounding migrating parasites are brightly eosinophilic with pyknotic nuclei (necrosis) (**1 pt.**) and there are small clusters of necrotic hepatocytes scattered randomly throughout the section (migration tracts) (**1 pt.**).

MORPHOLOGIC DIAGNOSIS: Liver: Hepatitis, granulomatous and eosinophilic, multifocal to coalescing, with aphasmid nematode adults and eggs and diffuse mild to moderate portal fibrosis. (**3 pt.**)

CAUSE: *Capillaria hepatica* (**3 pt.**)

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

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CASE 4. Tissue from a pig.

MICROSCOPIC DESCRIPTION: Lung: Diffusely **(1 pt.)** alveolar septa are variably expanded **(1 pt.)** up to 10X normal by moderate numbers of macrophages **(1 pt.)**, lymphocytes **(1 pt.)**, fewer neutrophils, plasma cells, rare siderophages **(1 pt.)** and necrotic debris, and often lined by hyperplastic type II pneumocytes **(1 pt.)**. Multifocally, alveolar lumina are often atelectatic **(1 pt.)** and are multifocally and variably expanded by foamy macrophages **(1 pt.)**, lymphocytes, viable and degenerate neutrophils, fibrin and necrotic debris **(1 pt.)**. A similar exudate is refluxed into surrounding airways **(1 pt.)**. Throughout the section, small vessels are often surrounded by cuffs of 4-5 layers of lymphocytes and plasma cells **(1 pt.)**, and occasionally, walls of vessels are thickened by abundant pink fibrillar material **(1 pt.)** and cellular debris (fibrinoid necrosis) **(1 pt.)**. Interlobular septa and the overlying pleura are mildly edematous **(1 pt.)**, and infiltrated by low numbers of lymphocytes, plasma cells, and macrophages.

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, interstitial, lymphohistiocytic, diffuse, severe, with type II pneumocyte hyperplasia. **(3 pt.)**

CAUSE: Porcine arterivirus **(2 pt.)**

NAME THE DISEASE: Porcine Respiratory and Reproductive Syndrome (PRRS) **(1 pt.)**

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