

WSC 2013-2014, Conference 2

Case 1. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Heart: Multifocally **(1pt)** and randomly **(1pt)** within the myocardium, there are numerous variably-sized foci of coagulative and lytic necrosis. Within these areas, myofibers are brightly eosinophilic and hyaline with loss of differential staining but maintenance of overall tissue architecture **(1pt)** (coagulative necrosis) **(1pt)**. Primarily at the border of these areas, myofibers are fragmented, swollen, and vacuolated (degeneration), or with with pyknotic nuclei (necrosis) and markedly reactive satellite nuclei and myofibers are often replaced by large numbers of degenerate neutrophils **(1pt)**, rare histiocytes, admixed with cellular debris **(1pt)**, edema **(1pt)**, fibrin, and hemorrhage (lytic necrosis) **(1pt)**. Within areas of lytic necrosis, there are numerous fungal hyphae **(2pt)** that measure 6-8 um in diameter **(1pt)**, pauciseptate **(1pt)**, with non-parallel walls and dichotomous to right angle branching **(1pt)**. There are numerous round eosinophilic 10um fungal conidia intermixed among the hyphae **(1pt)**.

MORPHOLOGIC DIAGNOSIS: Heart, myocardium: Myocarditis, necrotizing, multifocal, severe, with numerous fungal hyphae and conidia. **(4pt)**

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

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Case 2. Tissue from an ox.

(Only the lung is described for points. The lymph node is basically the same, but slightly less complex). Also note that there are two sections that were sent out. I described the one I got, your mileage may vary.)

MICROSCOPIC DESCRIPTION: Lung: Approximately 70% of the section is replaced by coalescing, poorly formed granulomas **(2pt)** composed of a central core of epithelioid macrophages **(1pt)**, admixed with moderate numbers of Langhans giant cells **(2pt)** measuring up to 75um in diameter **(1pt)**, lymphocytes **(1pt)** and fewer plasma cells, and variably thick lamellar bands of vascularized fibrous connective tissue **(1pt)**. The cytoplasm of epithelioid and multinucleated is lightly eosinophilic and granular **(1pt)**. Multifocally, within areas of granulomatous inflammation, there are foci of lytic necrosis **(2pt)**, in which inflammatory cells are replaced mineralized **(1pt)** eosinophilic cellular debris **(1pt)**. At the edge of the inflammatory nodule, alveolar septa are compressed, and often contain **(1pt)** low to moderate numbers of epithelioid macrophages, edema, and fibrin. The pleura is markedly expanded by fibrous connective tissue.

Lymph node: Similar changes are present within the lymph node.

MORPHOLOGIC DIAGNOSIS: 1. Lung: Pneumonia, interstitial, granulomatous and necrotizing, focally extensive, severe. **(3pt)**

2. Lymph node: Lymphadenitis, granulomatous and necrotizing, focally extensive, severe.

CAUSE: Mycobacterium avium (M. bovis OK) **(3pt)**

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

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Case 3. Tissue from a rock hyrax.

Larynx **(1pt)**: Multifocally, there are large areas of mucosal necrosis **(1pt)** and loss, which extend through the submucosa into the underlying mucous glands. The mucosa is covered by a thick layer of fibrin **(1pt)**, cellular debris, viable and intact neutrophils **(1pt)**, sloughed epithelial cells, colonies of robust cocci **(1pt)**, and sloughed epithelial cells, and plant material. The underlying mucosa is multifocal discontinuous. At the edges of the ulcerated areas, remaining viable epithelial cells exhibit marked intracytoplasmic swelling **(1pt)**, and often nuclei are expanded by a single 2-4um irregularly round intranuclear **(1pt)** viral inclusions **(1pt)**. Occasionally, degenerating mucosal epithelial cells have up to 15 nuclei (viral syncytia) **(1pt)** which contain viral inclusions which peripheralize nuclear chromatin. Moderate number of lymphocytes and neutrophils transmigrate the mucosal epithelium. The underlying submucosa is markedly expanded by edema **(1pt)** with infiltration by low to moderate numbers of neutrophils, histiocytes, and lymphocytes in between collagen fibers **(1pt)**. The epithelium lining submucosal gland is multifocally necrotic **(1pt)** and or attenuated, and acini are often ectatic, containing proteinaceous material, mucin, and cellular debris. Small numbers of lymphocytes and neutrophils infiltrate between glands. (Note that there are Pacinian corpuscles surrounding glands (Huh! – new one on me, but I don't look at a lot of rock hyraxes – BHW). Submucosal adipose exhibits mild serous atrophy **(1pt)** with infiltration by moderate numbers of lymphocytes, neutrophils, and histiocytes. There is multifocal mineralization of laryngeal cartilage. **(1pt)**.

MICROSCOPIC DESCRIPTION: Larynx: Laryngitis, necrotizing, multifocal to coalescing, moderate with submucosal edema and intraepithelial viral inclusions and syncytia. **(3pt)**

CAUSE: Rock hyrax herpesvirus **(2pt)**

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

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Case 4. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Pancreas: Effacing 80% **(1pt)** of the pancreas is an infiltrative, unencapsulated, multilobular, well-circumscribed, moderately cellular neoplasm **(2pt)**. Neoplastic epithelial **(1pt)** cells are arranged in well-formed acini **(1pt)** on a moderate fibrovascular stroma **(1pt)**. Neoplastic cells are polygonal to columnar, with moderate amounts of a granular basophilic cytoplasm **(1pt)** with low to moderate numbers of zymogen granules **(1pt)**. Nuclei are basilar, round, with finely stippled chromatin and a single prominent basophilic nucleolus **(1pt)**. Mitoses are rare **(1pt)**. The stroma is expanded by a hyaline eosinophilic material **(2pt)** which occasionally infiltrates acini. Within areas of stromal hyalinization, neoplastic cells are often degenerate **(1pt)** (swollen with eosinophilic cytoplasm) or necrotic (fragmented, with pyknotic to karyorrhectic nuclei). There are large areas of coagulative necrosis **(1pt)** scattered throughout the neoplasm.

MORPHOLOGIC DIAGNOSIS: Pancreas: Pancreatic exocrine adenocarcinoma **(4 pts.)**, hyalinizing type **(1pt)**

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

