

WSC 2011-2012, Conference 22

Case 1. Tissue from a mouse.

(Note: There is marked variation in slide quality. My section had four small sections pieces of tissues, presumably from a cross section of the skull. The neoplasm was only in one.)

MICROSCOPIC DESCRIPTION: Nasal cavity, turbinate bones: Within the olfactory lobe of the brain **(1pt)** infiltrating and expanding the nasal turbinates **(1pt)**, undermining the olfactory epithelium **(1pt)**, and extending into the nasal cavity is an unencapsulated, densely cellular, well-demarcated infiltrative neoplasm **(2pt)**. Neoplastic cells are arranged in nests and packets **(1pt)** on a fine fibrovascular stroma **(1pt)**, and often form true rosettes **(2pt)**. Neoplastic cells range from spindled **(1pt)** to polygonal **(1pt)** with a small amount of a finely granular cytoplasm and indistinct cell borders. Nuclei are irregularly round to elongate, with moderately stippled chromatin, 1-3 large basophilic nuclei **(1pt)**, and anisokaryosis **(1pt)** is prominent. The mitotic rate averages up to 8 per 400X field **(1pt)**. There are numerous apoptotic cells throughout the neoplasm **(1pt)**. There is marked lateral deviation of the nasal septum and infiltration of nasal bones with bone loss as well as infiltration of the marrow space by fibrous tissue **(2pt)**.

MORPHOLOGIC DIAGNOSIS: Nasal cavity, olfactory lobe: Esthesioneuroblastoma. **(4pt.)**

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

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Case 2. Tissue from a marmoset.

Pancreas: Diffusely, pancreatic ducts are ectatic, and contain cross and tangential sections of a 200 um diameter adult spirurid nematode **(1pt)** with a 5 um thick smooth cuticle, lateral cords, polymyarian-coelomyarian musculature **(1pt)**, a pseudocoelom **(1pt)** that contains granular eosinophilic material, a triradiate esophagus, an intestinal tract lined by uninucleate cells with an indistinct brush border **(1pt)**, and uterus filled with larvated eggs **(1pt)**. There are low to moderate numbers of neutrophils and fewer eosinophils admixed with the nematodes in the duct lumen **(1pt)**. There are low to moderate numbers of lymphocytes and fewer histiocytes and plasma cells in the periductal fibrous connective tissue. Pancreatic exocrine tissue is diffusely atrophic **(1pt)**, evidence by cellular shrinkage and a distinct loss of zymogen granules **(1pt)**, as well as a **subjective** increase in interlobular fibrous connective tissue (probably just the result of acinar atrophy). There are low numbers of lymphocytes and plasma cells scattered throughout the acinar tissue. There is marked atrophy of peripancreatic fat **(1pt)**with infiltration of low numbers of lymphocytes and histiocytes within the mesentery.

Duodenum: There is marked thinning of the duodenal mucosa as a result of villar blunting and fusion **(1pt)**. The underlying lamina propria is expanded by a moderate amount of a homogenous amphophilic material (amyloid) **(1pt)**which replaces villar crypts and the normal resident population of inflammatory cells. **(1pt)**

Aorta – not present on all slides. The aortic wall is expanded by multifocal aggregates of deeply basophilic material (mineral within the tunica media. In some tangential sections, the intima is thickened by hyaline collagen which effaces the internal elastic lamina.

MORPHOLOGIC DIAGNOSIS: 1. Pancreas, exocrine tissue: Atrophy, diffuse, moderate. **(2pt)**

2. Pancreas, pancreatic ducts: Numerous male and female adult nematodes, with intraluminal neutrophilic exudates. **(1pt)**

3. Duodenum, mucosa: Amyloidosis, diffuse, moderate, with marked villar fusion and blunting. **(2pt)**

4. Aorta, tunica media: Mineralization, multifocal, moderate.

Name the agent: *Trichospirura leptostoma* **(2 pt)**

O/C: (1pt)

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Case 3. Tissue from an African green monkey.

MICROSCOPIC DESCRIPTION:

Lung (multiple sections): Multifocally, bronchi, bronchioles and alveoli are filled by an exudate consisting of numerous viable and degenerate heterophils **(1pt)**, fewer macrophages **(1pt)**, low numbers of lymphocytes and plasma cells, and variable amounts of cellular debris, hemorrhage **(1pt)**, and polymerized fibrin **(1pt)**. Centrally within the section are coalescing areas of lytic necrosis **(2pt)** in which alveolar septa are effaced by inflammatory cells and cellular debris. In less affected areas, alveoli are moderately to markedly distended by abundant hemorrhage, fibrin, and moderate amounts of edema **(1pt)**, and alveolar septa are visible and expanded **(1pt)** by variable combinations and concentrations of congestion, circulating and emigrating neutrophils, macrophages, edema, and fibrin. In some areas, intra-alveolar fibrin is densely eosinophilic, and alveolar septa are lined by hypertrophic type II pneumocytes **(1pt)**, with fibroblasts and collagen expanding the alveolar septa **(1pt)**. Multifocally, the epithelium lining bronchioles is mildly hyperplastic **(1pt)**, characterized by piling up of epithelial cells, and the lumen contains numerous sloughed epithelial cells, heterophils and abundant necrotic debris. The cilia of the bronchiolar airways is expanded by numerous small rod-shaped bacilli **(1pt)**. Arterioles are surrounded by abundant edema **(1pt)**. Focally, the pleura, and to a lesser extent the peribronchiolar fibrous connective tissue is expanded by a moderate amounts of granulation tissue **(1pt)**, containing small numbers of previously described inflammatory cells mixed with hemorrhage, edema, and fibrin; and multifocally, pleural mesothelial cells are hypertrophied (reactive).

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, bronchointerstitial, fibrinosuppurative and necrotizing, diffuse, severe, with numerous cilia-associated bacteria. **(3pt)**

CAUSE: Bordetella bronchiseptica **(2pt)**

O/C: (1pt)

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Case 4. Tissue from a baboon.

MICROSCOPIC DESCRIPTION: Poorly-haired skin (perhaps planum or digit): Within the superficial and deep dermis, elevating the overlying focally eroded **(1pt)** epidermis, there is a well-demarcated area of inflammation containing numerous epithelioid macrophages **(1pt)**, fewer foreign body and Langhan's type multinucleated giant cell macrophages **(2pt)**, admixed with large number of neutrophils **(1pt)** (which rarely form aggregates), and fewer lymphocytes, eosinophils **(1pt)** and plasma cells. The inflamed dermis contains abundant edema **(1pt)**, cellular debris, and numerous small vessels with reactive endothelium (which contain large numbers of marginated neutrophils). Within the cytoplasm of macrophages and giant cells are numerous 5-8um **(1pt)** round to oval yeasts **(2pt)** which often form small chains **(1pt)** and exhibit narrow-based budding **(1pt)**; there are rare yeasts within the extracellular milieu. The overlying epidermis is focally eroded **(1pt)**, and covered by a thick serocellular crust **(1pt)** containing abundant viable and degenerate neutrophils, fibrin, keratin and cellular debris, plant material and bacterial colonies; the adjacent epidermis is covered by a modest amount of orthokeratotic hyperkeratosis.

MORPHOLOGIC DIAGNOSIS: Skin: Dermatitis and cellulitis, pyogranulomatous, focally extensive, severe with numerous intracellular yeasts. **(3pt)**

CAUSE: *Histoplasma capsulatum var. duboisii* **(2pt)**

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