

WSC 2009-2010. Conference 1, Case 1.

Tissue from a dog.

MORPHOLOGIC DESCRIPTION: Haired skin. Effacing both the superficial and deep dermis and subcutis (1 pt.), and extending in to the overlying ulcerated epidermis, there is a focally extensive (1 pt.) area of pyogranulomatous inflammation composed of large numbers of viable and degenerate neutrophils (1 pt.), macrophages (1 pt.), and lesser numbers of lymphocytes (1 pt.) and rare plasma cells, admixed with cellular debris and edema (1 pt.). Throughout the infiltrate, macrophages often contain abundant brown granular pigment (1 pt.), or rarely have engulfed neutrophils (1 pt.). Scattered throughout the inflamed areas are numerous foci of neutrophils (1 pt.) centered on variably-sized, irregularly shaped, scalloped-edged (1 pt.) pink-brown (1 pt.) colonies of filamentous bacteria (1 pt.). There is prominent neovascularization of the inflamed areas. Within the overlying dermis, there is mild lymphoplasmacytic periadnexal and perivascular inflammation. In a focal area of the overlying epidermis, there is ulceration, focal keratinocyte necrosis, inter- and intracellular edema, transmigration of low numbers of lymphocytes and neutrophils, and mild parakeratotic hyperkeratosis (1 pt.) – (not all changes present in all sections.)

Organization and clarity: (1 pt.)

MORPHOLOGIC DIAGNOSIS: Haired skin: Dermatitis and cellulitis, pyogranulomatous, chronic, with numerous colonies of pigmented filamentous bacilli. (3 pt.)

CAUSE: *Streptomyces cyaneus* (*Nocardia* sp. or *Actinomyces* OK). (2 pt.)

Name two special stains you'd like to see: Brown-Hopps (or other Gram stain) and Ziehl-Nielsen (or other acid-fast stain) (2 pt.)

WSC 2009-2010. Conference 1, Case 2.

Tissue from a mouse.

Alveolar bone and tooth (1 pt.): Expanding the submucosal tissue, infiltrating and effacing alveolar bone (1 pt.), and compressing adjacent skeletal muscle is an unencapsulated, well-demarcated, poorly circumscribed, moderately cellular, infiltrative (2 pt. – for entire subgross description) neoplasm composed of anastomosing cords (1 pt.) of neoplastic cells that incompletely recapitulate dental elements. The cords are composed of palisades (1 pt.) of tall columnar cells (1 pt.) (ameloblasts) (1 pt.) on a fine fibrovascular stroma that often surround a central focus of loosely arranged small spindle to stellate cells (1 pt.) on a pale myxomatous matrix, recapitulating dental pulp. Rarely, islands have central cystic spaces or areas of necrosis up to 1mm in diameter. The neoplastic ameloblasts have distinct cell borders, moderate amounts of pale eosinophilic fibrillar cytoplasm (1 pt.), a pale, oval to elongate, basillar nucleus (1 pt.), with finely stippled chromatin, and 1-2 distinct nucleoli. Occasionally, ameloblasts have abundant pink cytoplasm (keratinization). Throughout the neoplasm, the neoplastic stellate mesenchymal cells have distinct cell borders, scant eosinophilic fibrillar cytoplasm, and an oval to elongate nucleus (1 pt. – for cytoplasmic and nuclear description), with finely stippled chromatin and a variably distinct nucleolus. In one focus, there is a denticle (1 pt.) in which interposed between the ameloblasts and the underlying mesenchymal tissue, are columnar cells (odontoblasts) (1 pt.) . The odontoblasts have distinct cell borders, small amounts of eosinophilic granular cytoplasm, and an irregularly round to oval nucleus, with finely stippled chromatin and an indistinct nucleolus. There are multifocal aggregates of eosinophilic homogenous to fibrillar material (dentin) often with prominent dentin tubules and basophilic, amorphous, homogenous to lamellated material (mineral or enamel) (1 pt.). Mitoses are rare in all cell populations. (1 pt.). The overlying gingival epithelium is mildly hyperplastic.

Diagnosis: Alveolar bone: Ameloblastoma (Odontogenic tumor –OK) (4 pt.)

Organization and Clarity - (1 pt.) (Use of neoplasm description is key)

WSC 2009-2010. Conference 1, Case 3.

Tissue from a goat. Spinal cord: Within the white matter (1 pt.) , but also extending into the overlying meninges and adjacent grey matter, there is a perivascular (1 pt.) infiltrate of large numbers of lymphocytes (1 pt.) , and small numbers of histiocytes (1 pt.) and plasma cells which extends expands Virchow-Robin's space and extends (1 pt.) into the adjacent neuropil. These vessels are lined by hypertrophied endothelial cells. The adjacent white matter contains numerous macrophages (1 pt.) , with foamy cytoplasm (gitter cells) (1 pt.) , moderate numbers of plump astrocytes (1 pt.) and microglia, occasional lymphocytes, swollen axons (spheroids) (1 pt.) , and rare dilated empty axon sheaths with mineralization (1 pt.) . Within the adjacent grey matter (1 pt.) , the perivascular space is mildly expanded by moderately expanded by few lymphocytes and macrophages, and there is mild gliosis (1 pt.) . The overlying leptomeninges are moderately expanded by a thick band of large numbers of lymphocytes, and lesser numbers of macrophages and rare plasma cells (1 pt.) .

MORPHOLOGIC DIAGNOSIS: Spinal cord, white matter: Meningomyelitis, necrotizing and lymphohistiocytic, focally extensive, severe with gliosis (3 pt.)

CAUSE: Caprine lentivirus (CAE virus) - (3 pt.)

Organization and clarity: (1 pt.)

WSC 2009-2010. Conference 1, Case 4.

Tissue from an ox.

MORPHOLOGIC DESCRIPTION: Heart (1 pt.): Separating and replacing cardiomyofibers are multifocal to coalescing (1 pt.) areas of granulomatous inflammation containing large numbers of macrophages (1 pt.), lesser numbers of lymphocytes (1 pt.), multinucleated macrophage giant cells (1 pt.) (foreign body (1 pt.) and Langhans'-type (1 pt.)), and low numbers of eosinophils (2 pt.) and neutrophils. Within these areas, skeletal muscle fibers exhibit one or more of the following: decrease in size (atrophy), hyalinization (1 pt.), fragmentation, necrosis, internalization of satellite nuclei, and mineralization (1 pt.). With a subepicardial cardiomyocyte there are numerous 2-4um oval dark blue zoites (sarcocyst) (1 pt.) (– not present in all sections.)

MORPHOLOGIC DIAGNOSIS:

1. Heart, myocardium: Myocarditis, granulomatous and eosinophilic, multifocal to coalescing, severe. (3 pt.)
2. Heart: Sarcocyst, focal. (1 pt.)

Cause: Hairy vetch toxicosis (3 pt.)

O/C – (1 pt.)