

WSC 2020-2021

Conference 7, Case 1.

Tissue from a brown anole.

MICROSCOPIC DESCRIPTION: Multiple sections of limbs and tail (digit OK): Multifocally, effacing the dermis (**1pt**), elevating the overlying scaled skin, and extending into and multifocally effacing the underlying skeletal muscle (**1pt**) and joint spaces are numerous colonies of bacteria (**1pt**) that form large compressive massive up to XXX diameter (**1pt**). Bacteria are coccobacilli (**1pt**) that are arranged in short chains (**1pt**) surrounded by a clear 2um capsule (**1pt**). Bacterial colonies are also present adjacent to and sometimes within dilated lymphatics. (**0 pts – not on both slides**). Bacterial aggregates are surrounded by low numbers (**1pt**) of inflammatory cells, including macrophages (**1pt**), lymphocytes (**1pt**), and plasma cells (**1pt**). Within the underlying skeletal muscle, infiltrated areas contain fiber loss and remaining entrapped fibers are mildly hypereosinophilic and shrunken. (**1pt**) In areas in which inflammation is present adjacent to bone, there is multifocal bone loss and proliferation of woven bone (**1pt**) which is lined with numerous osteoblasts and osteoclasts and contains prominent reversal lines. In one section there are multiple granulomas (**1pt**) centered on tangential sections of larval nematodes (**1pt**) with a pseudocoelom, musculature, gastrointestinal tract, and lateral alae; nematodes lack gonads (**1pt**). Larva are surrounded by several layers of spindled epithelioid macrophages admixed with few lymphocytes in bands of lamellar collagen.

MORPHOLOGIC DIAGNOSIS: 1. Limbs, tail, dermis, skeletal muscle and bone: Large colonies of cocci (**1pt**) with mild pleocellular (lymphoplasmacytic and histiocytic) dermatitis. (**1pt**)

2. Limb: Granulomas, multiple with nematode larvae. (**1pt**)

CAUSE: *Enterococcus* sp. (**1pt**)

WSC 2020-2021
Conference 7, Case 2.

Tissue from an African hedgehog.

MICROSCOPIC DESCRIPTION: Cerebrum **(1pt)**: Effacing approximately 33% of the section, there is a 0.5mm unencapsulated, well-demarcated, nodular, infiltrative and moderately cellular neoplasm. **(2pt)** The neoplasm is composed of sheets of polygonal **(1pt)** neoplastic astrocytes **(1pt)** on pre-existing stroma. Neoplastic astrocytes have distinct cell borders, range up to 30um in diameter, and have abundant eosinophilic cytoplasm **(1pt)** (resembling gemistocytes) **(1pt)**. Nuclei are irregularly round, with finely clumped chromatin and 1-3 small basophilic nucleoli. **(1pt)** Mitoses are rare. **(1pt)** Numerous neoplastic cells exhibit signs of cellular degeneration, including cellular swelling, accumulation of numerous vacuoles within the cytoplasm, and nuclear hyperchromasia to pyknosis. **(1pt)** Neoplastic cells are separated by small threads of remnant spongiotic parenchyma **(1pt)**, prominent microglia, with dilated and congested blood vessels. At the neoplastic interface, adjacent grey matter and the grey matter of the deep cortical lamina is moderately spongiotic **(1pt)** and mildly gliotic **(1pt)**, and rare axonal sheaths are dilated and contain axonal debris. **(1pt)**

MICROSCOPIC DIAGNOSIS: Cerebrum: Astrocytoma, low grade. (gemistocytic astrocytoma full credit, too.) **(5pt)**

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

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Case 3. Tissue from a leopard tortoise.

Lung. The interstitial septae (**1pt**) and faveoli (**1pt.**) are multifocally expanded by large, coalescing aggregates of heterophilic and histiocytic inflammation composed of a central brightly eosinophilic area of necrotic (**1pt**) cellular debris and more peripherally, large numbers of intact and fragmented heterophils (**1pt – full credit for granulocytes**), macrophages (**1pt.**), and rare foreign body type multinucleated histiocytes. Some inflammatory foci are centered on colonies of 1-2um coccobacilli (**1pt.**). Regions of interstitial inflammation are surrounded by interstitial fibrosis (**1pt**), lymphocytes (**1pt**), and edema. Faveolar pneumocytes are diffusely type II (type II pneumocytes hyperplasia [**1pt**]), and demonstrate a range of changes including ulceration (**1pt**), moderate hyperplasia (**1pt**), and multifocal necrosis. Multifocally and randomly, faveolar (**1pt**) and bronchiolar (**1pt**) epithelium is hypertrophic, inflamed with lymphocytes, and individual pneumocytes contain the following stages of coccidia: intranuclear meronts (full credit for schizonts) (**1pt.**), intranuclear gamonts (full credit for macrogametocytes, zygote, or microgametocytes) (**1pt**), rare intracytoplasmic zoites (full credit for merozoites) (**1pt**), and extracellular/intraluminal oocysts (**1pt**).

MORPHOLOGIC DIAGNOSIS: 1. Lung: Pneumonia (**1pt**), interstitial, granulomatous (granulocytic, histiocytic OK) with bacteria (**1pt**), type II pneumocyte hyperplasia, and interstitial fibrosis.

2. Lung, bronchiolar and faveolar epithelium: Hyperplasia and lymphocytic inflammation with intranuclear gamonts, intranuclear, meronts, intracytoplasmic zoites, and extracellular oocysts (**1pt – full credit for noting any stage of coccidia**)

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

WSC 2020-2021
Conference 7, Case 4.

Tissue from a bearded dragon.

MICROSCOPIC DESCRIPTION: Heart with atrium and ventricle **(1pt)**: Expanding the epicardium **(1pt)** of both the atrium and ventricle and ranging up to 650um at the base of the ventricles and along the atrial appendage is a thick layer of inflamed fibrous tissue. This layer is composed of a combination of mature fibrous connective tissue **(1pt)** and fibroplasia (granulation tissue) and contains large numbers of heterophils **(1pt - granulocytes OK)**, macrophages **(1pt)**, lymphocytes **(1pt)**, plump fibroblasts and rare multinucleated foreign body macrophages scattered diffusely throughout, and admixed with hemorrhage, fibrin **(1pt)**, edema and cellular debris. In some areas, there are poorly formed granulomas **(2pt)** with a central core of brightly eosinophilic necrotic **(1pt)** cellular debris. At the centers of necrotic foci **(1pt)** and within the cytoplasm **(1pt)** of randomly scattered robust macrophages ranging up to 25um in diameter, there are numerous 2x3um **(1pt)**, roughly spherical to ovoid spores **(1pt)** with discernible basophilic nuclei and a thin hyaline wall (microsporidia) **(1pt)**. Fibrosis/inflammation multifocally extends into the underlying myocardium **(1pt)** predominantly in the atrium, but occasionally a short distance into the ventricular myocardium as well. In these areas, degenerative cardiocyte changes are mild, with shrinkage or flattening of cells and a mild pallor to the cytoplasm. Mesothelium is multifocally hypertrophied **(1pt)**.

MORPHOLOGIC DIAGNOSIS: Heart, epicardium: Epicarditis, **(1pt)** granulomatous and heterophilic (granulocytic OK) **(1pt)** diffuse, chronic, severe, marked epicardial fibrosis and granulation tissue formation, with numerous microsporidial spores. **(1pt)**

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