

WSC 2024-2025

Conference 20, Case 1

Tissue from a cherry shrimp.

MICROSCOPIC DESCRIPTION: Sagittal section of entire animal : The subcutaneous tissue is markedly expanded by hemolymph and heavily infiltrated by predominantly granulated hemocytes. **(1pt)** Hemocyte cytoplasm is often expanded by large number of intracytoplasmic 1-2um coccobacilli **(1pt)** (rickettsia-like organisms.) **(1pt)** Many thalli **(1pt)** protrude externally within the pleopodal regions **(1pt)** and consisted of multinucleated basal cells) that penetrate the cuticle **(1pt)** and measure 20 µm in diameter. **(1pt)** They have externally branching erect filaments that ranged from 8 to 15 µm in diameter with numerous terminal zoosporangia **(1pt)** of varying maturational stages. Fully sporulated zoosporangia measure up to 800 µm in length and 100 µm in diameter and consist of numerous peripherally located zoospores. **(1pt)** The perforating basal cells are associated with a branching network of hyphal-like rhizoids **(1pt)** that infiltrate the epidermis and subcutis, range from 4 to 8 µm in diameter, are uninucleate and partitioned **(1pt)**, and occasionally contain granular material. Rhizoids and associated inflammatory infiltrates extend to and surround the ventral nerve cord **(1pt)** and multifocally (but minimally) invade the adjacent abdominal flexor musculature. **(1pt)**

MORPHOLOGIC DIAGNOSIS: . **1.** Body as a whole: Hemocytosis **(1pt)**, chronic, diffuse, severe with hemocytic and multisystemic cytoplasmic bacterial inclusions (rickettsia-like organisms) **(1pt)**
2. Ventral carapace: Dermatitis, necrotizing **(1pt)**, acute, regionally extensive, mild with invasive algae **(1pt)**

CAUSE: *Cladogonium sp.* **(2pt)**

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

WSC 2024-2025
Conference 20, Case 2
Tissue from a betta

MICROSCOPIC DESCRIPTION: A sagittal whole-body specimen is submitted for examination, and there are multiple pathologic processes. Multifocally, within the kidney **(1pt)**, intestine, liver **(1pt)**, and gills **(1pt)**, there are multifocal to coalescing granulomas **(1pt)**. Granulomas are often centered on a brightly eosinophilic mass of necrotic granulocytes **(1pt)** admixed with abundant cellular debris and brown granular pigment **(1pt)** which are surrounded by multiple layers of epithelioid macrophages **(1pt)**, fewer lymphocytes (1pt.) and rodlet cells, and often enmeshed with lamellations of collagen. **(1pt)** In larger, more longstanding granulomas, macrophages have undergone epithelioid transformation with desmosome formation. Multifocally within the intestinal mucosa, there are several 1.5mm microsporidial **(1pt)** xenomas **(1pt)**, characterized by a thin eosinophilic wall and contain numerous eosinophilic, 2-4 µm, round to oval eosinophilic spores. **(1pt)** One xenoma contains a large hypertrophic host cell nucleus **(1pt)** amongst the spores. Multifocally, within cysts in the skeletal muscle, there are numerous cross and tangential sections of larval trematodes **(1pt)** which are characterized by a 5µm tegument, a rim of somatic cell nuclei beneath the tegument, oral suckers, **(1pt)** a spongy body cavity and cross sections of paired ceca. **(1pt)**

MORPHOLOGIC DIAGNOSIS :

1. Liver, kidney, intestine, gill: Granulomas, numerous. **(1pt)**
2. Intestine, mucosa: Xenomas, multiple. **(1pt)**
3. Skeletal muscle: Metacercaria,, numerous. **(1pt)**

CAUSE: Mycobacterium sp. (and you don't need to give a species on the flukes or the microsporidial, **(1pt)**)

O/C: (1pt)

WSC 2024-2025

Conference 20, Case 3.

Tissue from a cockatiel.

MICROSCOPIC DESCRIPTION: Spinal column: Multiple sections of vertebrae and spinal cord from various levels in the spinal column are presented for examination **(1pt)**, and the changes in the spinal cord are similar. At all levels of the cord **(1pt)**, neurons **(2pt)** within the grey matter **(1pt)**, and to a lesser extent within the white matter **(1pt)** and the spinal nerves **(1pt)** and the dorsal root ganglion **(1pt)** are expanded by one to multiple lamellated deeply basophilic **(1pt)** round inclusions (LaFora bodies) **(1pt)** which range up to 30um**(1pt)** in diameter and are surrounded by a thin rim of pale cytoplasm**(1pt)**. There are dilated axon sheaths **(1pt)** within the white matter and spinal nerve with rare spheroids. Scattered skeletal muscle fibers in the epaxial muscles are shrunken, hyalinized with loss of cross striations. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Spinal cord, spinal nerves, and dorsal root ganglion, neurons:

Intracytoplasmic polyglucosan **(2pt)** (Lafora) bodies, numerous, with mild spongiosis.

2. Spinal muscles: Atrophy, multifocal, mild to moderate **(1pt)**.

Name the condition: Lafora disease **(3pt)**

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

WSC 2024-2025
Conference 20 Case 4.
Tissue from a whale.

MICROSCOPIC DESCRIPTION: Telecephalon **(1pt.)**: Mildly expanding the leptomeninges but profoundly expanding Virchow-Robin spaces **(1pt.)** in the subjacent grey matter are cuffs of up to 8 layers of lymphocytes **(1pt.)**, plasma cells **(1pt.)**, and macrophages **(1pt.)** which extend into the surrounding rarefied **(1pt.)** neuroparenchyma. There is marked gliosis **(1pt.)** with numerous Gitter cells **(1pt.)** within these areas. Within the gray matter, neurons exhibit one or more of the following changes: swelling, loss of Nissl substance (chromatolysis) **(1pt.)**, contraction with hypereosinophilia with pyknotic nuclei **(1pt.)**, satellitosis **(1pt.)**, and occasional neurons and fewer glial cells contain a 2µm intranuclear **(1pt.)** viral inclusion which is surrounded by a halo or occasionally peripheralizes the chromatin. Additionally, rare neurons and glia may also contain one or more 2-6µm eosinophilic intracytoplasmic inclusions. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Cerebrum: Meningoencephalitis **(1pt.)**, lymphoplasmacytic and necrotizing **(1pt.)**, diffuse, moderate with neuronal necrosis **(1pt.)**, Gitter cells **(1pt.)**, and occasional intracytoplasmic and intranuclear viral inclusions. **(1pt.)**

CAUSE: Cetacean morbillivirus **(1pt.)**

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