WSC 2024-2025
Conference 18, Case 1
Tissue from a pigeon.

MICROSCOPIC DESCRIPTION: Cloaca with bursa and terminal oviduct: There is ulceration of the cloacal mucosa with replacement by a serocellular crust **(1pt.)** containing numerous viable and degenerate heterophils admixed with abundant cellular debris, crystalline mineral, and bacterial colonies. **(1pt.)** Submucosal glands contain numerous heterophils. The necrosis extends into the subjacent soft tissues, extending into adjacent feathered skin, adipose tissue, and skeletal muscle. **(1pt.)** These areas contain abundant viable and degenerate heterophils, macrophages, cellular debris, edema, and greyish ground substance which surrounds, separates, and replaces soft tissue elements. **(1pt.)** Skeletal muscle is variably degenerate, necrotic, and atrophic. **(1pt.)** Macrophages multifocally contain numerous round 2-3um zoites **(1pt.)** within their cytoplasm; similar zoites are seen within skeletal muscle and endothelial cells. Endothelial cells lining vessels are markedly hypertrophic and heterophils transmigrate the wall which is occasionally caught up in the surrounding necrosis **(1pt.)** . The oviduct contains moderate numbers of heterophils, macrophages, sloughed epithelium, and mucus within its lumen **(1pt.)** and moderate numbers of lymphocytes and plasma cells within its wall. **(1pt.).** The bursa is markedly atrophic **(1pt.)** and collapsed with markedly decreased numbers of B-cells. **(1pt.)** The lumen of follicles contains homogenous eosinophilic material. Rare epithelial cells and perifollicular macrophages **(1pt.)** contain purple botryoid inclusions. **(1pt.)** There is multifocal necrosis of feathered skin.

MORPHOLOGIC DIAGNOSIS: 1. Bursa: Atrophy **(1pt.)**, diffuse, severe, with lymphoid depletion and intraepithelial and intrahistiocytic botryoid inclusions. **(1pt.)**
2. Cloaca and associated soft tissues: Proctitis, panniculitis, dermatitis, and rhabdomyositis, necrotizing, **(1pt.)** chronic, diffuse, severe, with intrahistiocytic apicomplexan cysts. **(1pt.)**

CAUSE: Pigeon circovirus **(1pt.)** and *Toxoplasma gondiii* **(1pt.)**

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

WSC 2024-2025
Conference 18, Case 2
Tissue from a cockatiel.

MICROSCOPIC DESCRIPTION: Multiple long bones (one has overlying feathered skin, suggestive of leg:) Effacing the bone marrow **(1pt)** and much of the hematopoetic bone **(1pt)**, and multifocally extending though the multifocal lytic lamellar bone **(1pt)**, there is an infiltrate of innumerable epithelioid **(1pt)** and fewer multinucleated macrophages of both the foreign body **(1pt)** and Langhans cell types **(1pt)** which are regionally admixed with aggregates of large number of heterophils **(1pt)** and cellular debris, and fewer lymphocytes and plasma cells. **(1pt)** Hematopoietic bone is largely lysed, but small irregular spicules remain, with a lining layer of osteoid and a single layer of prominent osteoblasts. **(1pt)** In areas in which lamellar cortical bone is present, the bone is thin and the endosteal surfaced is markedly scalloped. **(1pt)** The infiltrate extends through the lamellar bone at numerous points, and into the periosteum**(1pt)**, and adjacent subcutaneous fat and dermis of the feathered skin **(1pt)**. The inflammatory infiltrate extends into extensor tendons and atrophic skeletal muscle. **(1pt)** The skeletal muscle fibers are shrunken and surrounded by the infiltrating cellular exudate and mature collagen. **(1pt)** Regionally, remaining bone marrow is hyperplastic with profound myeloid hyperplasia. **(1pt)**

MORPHOLOGIC DIAGNOSIS : Long bones: Osteomyelitis, granulomatous **(1pt)** and heterophilic **(1pt)**, multifocal to coalescing, chronic, diffuse, severe, with cortical and medullary bone lysis, **(1pt)** mild periosteal new bone growth, and granulomatous dermatitis, panniculitis, and rhabdomyositis. **(1pt)**.

CAUSE: *Mycobacterium avium sp.* **(2pt)**

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

WSC 2024-2025
Conference 18, Case 3.
Tissue from an elegant crested tinamou.

MICROSCOPIC DESCRIPTION: Ventriculus **(1pt)**: The koilin layer is moderately thickened **(1pt)** by large colonies of 1-2um wide **(1pt)** elongate filamentous yeast **(2pt)** which extend downward in some areas 2/3 of the depth of the mucosal layer. **(1pt)** The lamina propria is diffusely expanded by low to moderate numbers of heterophils **(1pt)**, lymphocytes **(1pt)**, and plasma cells**(1pt)** , and small amounts of congestion and edema. Diffuse, koilin glandular epithelium contains numerous mitotic figures. In some areas, the lamina propria is also expanded by a moderate amount of fibrous connective tissue **(1pt)** and glands are atrophic **(1pt)** with pale-staining, attenuated epithelium. The walls of arterioles **(1pt)** in the submucosa and muscularis contain small amounts of a smudgy, eosinophilic, homogenous material (amyloid.) This material is also present in scattered small aggregates in subepithelial locationsin the lamina propria. **(2pt.)**

MORPHOLOGIC DIAGNOSIS: 1. Ventriculus, koilin layer: Ventriculitis, lymphoplasmacytic **(1pt)**, chronic, diffuse, mild with numerous extracellular filamentous yeasts. **(1pt)**
2. Ventriculus, lamina propria arterioles: Amyloidosis, diffuse, mild. **(1pt)**

CAUSE: *Macrorhabdus onithogaster* **(2pt.)**

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

WSC 2024-2025
Conference 18 Case 4.
Tissue from a blue fronted Amazon parrot.

MICROSCOPIC DESCRIPTION: Vertebral column (synsacrum) and spinal cord with glycogen body **(1pt)**: Within the marrow space of the vertebral body, extending into the underlying meninges, and expanding the submeningeal space **(1pt)**, there are moderate numbers of viable and necrotic heterophils **(1pt)** admixed with abundant cellular debris, hemorrhage, fibrin **(1pt)** and edema **(1pt)**. In some areas of the bone, large aggregates of necrotic heterophils admixed with cellular debris are surrounding by several layers of debris-laden epithelioid macrophages with occasional foreign-body type giant cells (heterophilic granuloma). Scattered throughout this exudate, there are numerous hyphae **(1pt)** which are 3-4um in diameter, with parallel cell walls **(1pt)**, infrequent septations **(1pt)**, rare dichotomous branching, and o evidence of conidia. In areas of inflammtion, there is lysis of medullary bone.There is profound serous fat atrophy within the medullary cavity of the vertebral column. **(1pt)** Numerous heterophils and fewer macrophages extend into and expand the spinal meninges. **(1pt)** Walls of meningeal vessels are hyaline, fragmented with necrosis of mural smooth muscle and infiltration by numerous heterophils **(1pt)**, macrophages, and hyphae (vasculitis) **(1pt)**. Inflammatory cells infiltrate and in some areas efface spinal nerves. **(1pt)** Multifocally, heterophils and macrophages extend along Virchow-Robins spaces**(1pt)** into the adjacent spinal cord, or infiltrate directly from the leptomeninges, resulting in spongiosis of the white matter, dilation of myelin sheaths, and rare spheroids. The inflammatory exudate infiltrates the glycogen body as well. **(1pt)**

Morphologic Diagnosis: Vertebral body (synsacrum) and spinal cord: Osteomyelitis **(1pt)** and meningomyelitis **(1pt)**, heterophilic **(1pt)** and granulomatous, chronic, multifocal to coalescing, marked, with vasculitis.

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

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