WSC 2024-2025
Conference 15, Case 1
Tissue from a chicken.

MICROSCOPIC DESCRIPTION: Cross section of head with eye, wattle and infraorbital sinuses: The infraorbital sinuses **(1pt)** are filled with an exudate composed of abundant mucus **(1pt)**, numerous sloughed and necrotic epithelium, and small number of heterophils. The sinus mucosal epithelium is markedly hyperplastic **(1pt)** thrown into villar-like folds, **(1pt)** and pluristratified up to three cell layers thick. The epithelium is infiltrated by low to moderate numbers of heterophils and fewer macrophages, **(1pt)** and in perivascular areas contains aggregates of lymphocytes and plasma cells. **(1pt)** There is scattered granulomatous inflammation centered on cores of heterophils within the submucosa **(1pt)** surrounding the infraorbital sinus, and perivascular aggregates of lymphocytes and plasma cells within the adjacent adipose tissue. Similar changes are present in the nasal cavity. **(1pt)** There is degeneration of epithelium of the adjacent mucous lacrimal glands, and lymphoplasmacytic inflammation of the Harderian gland. **(1pt)** There is scattered heterophilic inflammation within the infraorbital conjunctiva, and perivascular aggregates of lymphocytes and plasma cells. **(1pt)** There is a focal vessel in the conjunctiva which is filled with heterophils and the wall is necrotic (vasculitis.) There is mild edema of the lining of air spaces within the facial bones. **(1pt)** The normal architecture of the wattle is effaced and wattle contains a core of abundant heterophilic **(1pt)** cellular debris measuring up to 2mm thick. Surrounding the necrotic core **(1pt)**, there is a layer of epithelioid and fewer multinucleated foreign body macrophages, **(1pt)** and centrifugally, dense maturing granulation tissue **(1pt)** with abundant collagen with numerous congested vessels and an infiltrate of large numbers of viable and degenerate heterophils and abundant cellular debris. There are moderate numbers of lymphocytes ad plasma cells, primarily in perivascular areas.

MORPHOLOGIC DIAGNOSIS: 1. Nasal cavity and infraorbital sinuses: Rhinitis and sinusitis, heterophilic and granulomatous, chronic, diffuse, severe. **(1pt)**
2. Wattle: dermatitis, necrotizing and heterophilic, chronic, diffuse, severe. **(1pt)**
3. Harderian and conjunctival lacrimal glands: Dacryoadenitis, lymphoplamacytic, diffuse, mild to moderate. **(1pt)**

CAUSE: *Avibacterium paragallinarum, Mycoplasma gallisepticum or synoviae* **–** sinonasal lesion
Pasteurella multocida is a good differential for the wattle lesion (but A. paragallinarum was isolated from it as well.) **(2pt)**

WSC 2024-2025
Conference 15, Case 2
Tissue from a pig.

MICROSCOPIC DESCRIPTION: Long bone (rib): Two sections of bone are submitted for examination. Both sections contain a diaphyseal fracture **(1pt)** with mature callus **(1pt)**. At the periphery of the callus, the periosteum is elevated **(1pt)** by a proliferation of anastamosing trabeculae of woven bone **(1pt)** on both sides of the rib. The trabeculae of woven bone increase in length toward the fracture site, and are lined by numerous osteoblasts **(1pt)** which are incorporated into the woven bone in large numbers, as well as low numbers of osteoclasts **(1pt)** within Howship's lacunae. The overlying periosteum is thickened up to 100um and is hypercellular. **(1pt.)** The actual fracture site contains an organized hematoma **(1pt)** with small amount of hemorrhage and abundant polymerized fibrin **(1pt)**. Overlying the break, the hypercellular periosteum is expanded by horizontally arranged trabeculae of woven bone **(1pt)** with large areas of cartilage **(1pt)**and areas of maturing granulation tissue **(1pt)** which in some areas has formed dense fibrous tissue **(1pt)** with numerous fibroblasts. Scattered throughout the granulation tissue and infiltrating the adjacent bone marrow are aggregates of low to moderate numbers of neutrophils, with fewer macrophages, lymphocytes and plasma cells, and rare multinucleated giant cell macrophages. **(1pt)** Skeletal muscle fibers exhibit one or more of the following changes: marked variation in fiber size (atrophy) **(1pt)**, hyalinization and loss of cross striations (degeneration) **(1pt)**, vacuolation (1pt.), proliferation of satellite nuclei, and myofibers are separated by varying amounts of hemorrhage, collagen and proliferating blood vessels. Mild mixed inflammation extends into the mildly atrophic adipose tissue. **(1pt)** The walls of small muscular arteries in the area of the fracture are mildy hypertrophic. **(1pt)** The physis is morphologically normal with the exception of a variation in secondary spongiosis entering the metaphysis with occasional horizontal bridging. **(1pt)**

MORPHOLOGIC DIAGNOSIS : Bone, rib: Diaphyseal fracture with maturing callus. **(2pt)**

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

WSC 2024-2025
Conference 15, Case 3.
Tissue from a pig.

MICROSCOPIC DESCRIPTION: Colon **(1pt.)**: There is multifocal partial- to full-thickness necrosis v of the mucosa **(1pt.)** extending down into the submucosa **(1pt.)**. Areas of ulceration are covered by a necrotic and hemorrhagic pseudomembrane **(1pt.)**, and replaced by abundant cellular debris and in deeper areas, large numbers of infiltrating neutrophils **(1pt.)** and fewer macrophages **(1pt.)**. Neutrophils and macrophages extend downward into the edematous submucosa **(1pt.)** effacing normal submucosal architecture, and Peyer's patches **(1pt.)**, and peripherally into the adjacent lamina propria on either side of the ulcer . Submucosal vessels are congested and multifocally either totally or partially occluded by fibrin thrombi **(1pt.)** (most commonly beneath areas of ulceration), and in some vessels, neutrophils infiltrate the brightly eosinophilic wall which contains cellular debris (vasculitis) **(1pt.)**. Diffusely, Peyer's patches are depleted. **(1pt.)** The lamina propria is diffusely infiltrated and expanded by neutrophils, macrophages, lymphocytes and plasma cells. **(1pt.)** Within the lumen and rarely infiltrating the ulcerated mucosa, there are low numbers of 20-30um ciliated protozoa. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Colon: Colitis, ulcerative **(1pt.)**, multifocal, marked, with vasculitis **(1pt.)**, thrombosis, and diffuse Peyer's patch depletion. **(1pt.)**

CAUSE: *Salmonella enterica* (this is the best answer due to the vasculitis and thrombosis, but partial credit for *Brachyspira* sp. **(3pt.)**

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

WSC 2024-2025
Conference 15, Case 4.
Tissue from a turkey

MICROSCOPIC DESCRIPTION: Tendons and tendon sheaths consistent with gastrocnemius tendon and digital flexor tendons **(1pt.)**: Multifocally the tendon sheaths and synovium are mildly hyperplastic **(1pt.)** and there are numerous infoldings of synovium within the joint space. The synovium exhibits multifocal and extensive areas of chronic inflammation with one or more of the following changes: synovial hyperplasia with pluristratification **(1pt.)** as well as synoviocyte loss **(1pt.)**, infiltration of the synovium by moderate numbers of, lymphocytes **(1pt.)**, plasma cells**(1pt.)**, fewer macrophages **(1pt.)** and rare heterophils **(1pt.)**. There are multifocal aggregates of lymphocytes and plasma cells within perivascular areas. **(2pt.)** Inflammatory cells multifocally extend into the overlying synovium. **(1pt.)** Tendon sheaths are heavily vascularized. There is focally extensive fibrous adhesion of the gastrocnemius tendon to the tendon sheath. **(2pt.)** Throughout the section, tendons and tendon sheaths contain increased amounts of amphophilic ground substance **(1pt.)** within the interstitial tissue. **(1pt.)** There are large areas of mature cartilage at one edge of the section (I think this may be may be from the tarsus).

MORPHOLOGIC DIAGNOSIS: Gastrocnemius tendon with digital flexor tendings: Tenosynovitis, **(1pt.)** lymphoplasmacytic, **(1pt.)** chronic, multifocal to coalescing, moderate, with synovial edema. **(1pt.)**

CAUSE: Avian orthoreovirus **(3pt.)**

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