WSC 2021-2022 Conference 4
Case 1 – Tissue from an ox.

MICROSCOPIC DESCRIPTION: Nasal mucosa (per contributor – full credit for oral mucosa or lip, but it's not tongue – not enough skeletal muscle) **(1 pt)**: Expanding the nasal submucosa, there are numerous well-formed pyogranulomas **(2 pt)** . Pyogranulomas are centered on surrounded by radiating, club-like brightly eosinophilic material **(1 pt)** (Splendore-Hoeppli material) **(2 pt)** and are composed of numerous viable and degenerate neutrophils **(1 pt)** admixed with cellular debris and more peripherally, numerous epithelioid macrophages **(1 pt)**, few lymphocytes and plasma cells **(1 pt)**, enmeshed in tight lamellations of fibrous connective tissue. **(1 pt)** There is diffuse fibrosis **(1 pt)** of the submucosa between pyogranulomas which extends into the underlying skeletal muscle. Entrapped skeletal muscle fibers demonstrate increased eosinophilia, shrinkage (atrophy) **(1 pt)** and mild hypertrophy of satellite nuclei. Low numbers of neutrophils, macrophages, lymphocytes and plasma cells are spread thinly throughout the fibrotic submucosa **(1 pt)**, and salivary gland tissue contains few lymphocytes and plasma cells within the interstititum. **(1 pt)**

MORPHOLOGIC DIAGNOSIS: Nasal mucosa (or lip) **(1 pt)**: Rhinitis , pyogranulomatous **(1 pt)**, chronic, multifocal to coalescing, moderate, with Splendore-Hoeppli material **(1 pt)**.

Cause: *Actinobacillus lignieresi* **(2 pt)**

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

(Note: If you described bacilli in the colonies of Splendore-Hoeppli material, they aren't visible on the HE (or even a Gram stain.)

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Case 2 – Tissue from a cat.

Kidney: Diffusely, there are changes at all levels of the tubule. Approximately 20% of tubules at all levels within the cortex and less commonly, the medulla **(1pt)** contain sheaves or fan-like arrangements of birefringent translucent crystals **(2pt)** (oxalates) **(2pt)**, which occasionally rupture the basement membrane **(1pt)**. Ruptured tubules are surrounded by loosely arranged collagen and low numbers of lymphocytes and plasma cells. **(1pt)** In many crystal-laden tubules,ff lining epithelium demonstrates a range of morphologic changes: swelling and vacuolation (degeneration) **(1pt)**, shrunken with pyknosis and sloughed into the lumen (necrotic) **(1pt)**, and some tubules are lined by attenuated epithelium and contain luminal protein **(1pt)**. Bowman's space is filled with granular reflux and there is hypertrophy of parietal epithelium. **(1pt)** There are three empty subcapsular cysts, the largest being 1.7mm in diameter.

Cerebrum: Perivascular areas within the meninges and extending down along Virchow-Robin spaces are multifocally expanded by clear space (edema) **(1pt)**. Birefringent crystals are present within both vessel lumina and in perivascular areas. **(1pt)**

MORPHOLOGIC DIAGNOSIS: 1. Kidney, tubules: Degeneration and necrosis **(1pt)**, diffuse, marked , with marked numerous intratubular oxalate crystals **(1pt)**.

2. Cerebrum, vessels: Rare intramural oxalate crystals. **(1pt)**

CAUSE: Ethylene glycol toxicosis, (primary oxalosis OK). **(3 pt.)**

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

Conf. 4, Case 3.
Tissue from an ox.

MICROSCOPIC DESCRIPTION: Haired skin: Diffusely within the superficial dermis there is a perivascular, periadnexal, and perifollicular **(1pt.)** inflammatory infiltrate composed of large numbers of eosinophils **(1pt.)** and macrophages **(1pt.)** with fewer neutrophils, lymphocytes and plasma cells. **(1pt.)** Multifocally, hair follicles are dilated and contain at their base, several cross and tangential sections follicle of adult **(1pt.)** filarid **(1pt.)** nematodes that are 100 um in diameter **(1pt.)** with a 5 um thick smooth cuticle, polymyarian-coelomyarian musculature **(1pt.)**, a pseudocoelom, lateral alae, a thick walled intestine lined by uninucleate cuboidal cells, and reproductive organs including paired uteri containing microfilariae **(1pt.)** and eosinophilic discs (female) or a testis (male). **(1pt.)** At least one follicle is ruptured, with adult nematodes free in the dermis where they (and liberated keratin debris) incite a profound inflammation reaction of neutrophils and macrophages. **(1pt.)** Multifocally, hair follicles are ectatic, lined by attenuated epithelium, and filled with lamellations of keratin and occasionally degenerate neutrophils and necrotic debris (luminal folliculitis) **(1pt.)**; the follicular epithelium is also occasionally infiltrated by neutrophils (mural folliculitis). Rarely follicles are surrounded by dense fibrous connective tissue and are hyperplastic and tortuous. **(1pt.)** There is mild orthokeratotic hyperkeratosis **(1pt.)** and diffuse epidermal hyperplasia **(1pt.)** characterized by rete ridge formation, acanthosis, prominent intercellular bridging (spongiosis), and intracellular clear space (intracellular edema) . There are multifocal intracorneal pustules **(1pt.)** that contain degenerate neutrophils, cellular debris, acantholytic keratinocytes, and proteinaceous fluid. Multifocally there are serocellular crusts **(1pt.)** containing degenerate neutrophils, serum, cellular debris, hemorrhage, and entrapped plant material and bacterial colonies.

MORPHOLOGIC DIAGNOSIS: Haired skin: Dermatitis, perifollicular, periadnexal and perivascular, **(1pt.)** eosinophilic **(1pt.)** and histiocytic, diffuse, moderate, with folliculitis, furunculosis, dermal microfilariae, and few intrafollicular adult filarid nematodes **(1pt.)**

CAUSE: *Stephanofilaria stilesi* **(3pt.)**

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

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Case 4. Tissue from a cynomolgus macaque.

MICROSCOPIC DESCRIPTION: Pancreas. Diffusely throughout the pancreas, islets are increased both in number **(2pt.)** and in size **(2pt.)**, ranging up to .5mm in diameter. Within affected islets, islet cells are hypertrophied with marked anisokaryosis **(1pt.)**, prominent nucleoli and occasionally form acini. Many, if not all islets are infiltrated by low to moderate numbers of lymphocytes **(2pt.)** which separate islet cells and occasionally form large aggregates **(1pt.)**, effacing parts of the islets. There are occasionally single necrotic cells surrounded by lymphocytes in infiltrated islets. **(1pt.)** The vast majority of islets are further expanded by a variable accumulation of a waxy, hyaline material **(1pt.)** (amyloid) **(2pt.)** that separates, compresses and often replaces islet cells, infiltrating lymphocytes, and minimally extends into the surrounding parenchyma. Islet cells in amyloid-effaced islets often have vacuolated cytoplasm (degeneration) **(1pt.)** or are shrunken and pyknotic (necrosis) and/or mineralized. **(1pt.).** Acinar cells are generally unremarkable but occasionally have clear lipid vacuoles in their cytoplasm.

MORPHOLOGIC DIAGNOSIS: 1. Pancreas, islets: Hyperplasia **(1pt.)**, diffuse, moderate with islet cell hypertrophy**(1pt.)**.
2. Pancreas, islets of Langerhans: Amyloidosis, diffuse, severe. **(1pt.)**
3. Pancreas, islets of Langerhans Insulitis, lymphocytic, multifocal, moderate. **(1pt.)**

NAME A LIKELY CLINICOPATHOLOGIC ABNORMALITY: Hyperglycemia (1pt.)

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