WSC 2020-2021
Conference 9, Case 1.

Tissue from a cat.

MICROSCOPIC DESCRIPTION: Heart: Throughout the section in both the left and right ventricles and in the interventricular septum **(1pt.)**, and most prominently in the outer half of the myocardium **(1pt.),** arterioles **(1pt.)** are markedly expanded by a concentric to haphazard arrangement **(1pt.)** of plump spindle cells **(1pt.)**, resulting in mural thickening, partial to total luminal occlusion **(1pt.)**, and compression of surrounding cardiomyocytes. Slit-like lumens containing erythrocytes are rarely present between spindle cells. **(1pt.)** Spindle cells have indistinct borders and a small to moderate amount of pale eosinophilic cytoplasm. **(1pt.)** They have prominent irregularly oval nuclei with finely stippled chromatin and one to two medium nucleoli, and there is mild to moderate anisocytosis and anisokaryosis. **(1pt.)** Mitoses are common (up to 20 per 2.37mm^2). **(1pt.)** Occasionally, tufts of spindle cells are separated by a small to moderate amount of hyaline extruded vascular protein, or contain fibrin thrombi. **(1pt.)** Within affected arterioles, there is mural fibroplasia **(1pt.)** and the adventitia is often expanded by rings of fibroblasts and immature collagen which compresses adjacent cardiomyocytes. **(1pt.)** Within clusters of affected arterioles, there is patchy fibrosis of the myocardium and entrapped cardimyocytes are shrunken and hyalinized (atrophy) with rare loss. **(1pt.)** Cross sections of coronary arteries within the epicardium are unaffected, but there is spindle cell proliferation within vasa vasorum. **(1pt.)** There is a focal area of interstitial hemorrhage within the papillary muscle.

MORPHOLOGIC DIAGNOSIS: Heart, arterioles: Atypical endothelial and pericyte proliferation **(1pt.)** (angioendotheliomatosis), diffuse, severe, with mural and adventitial fibrosis. **(1pt.)**

NAME THE CONDITION: Feline systemic reactive angioendotheliomatosis **(2pt.)**

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

WSC 2020-2021
Conference 9, Case 2.

Tissue from cat.

MICROSCOPIC DESCRIPTION: Multiple sections of small intestine (presumably jejunum), mesenteric lymph node, and pancreas are on the slide.

Jejunum (Several sections have similar changes that vary in intensity). Diffusely, there is marked blunting of mucosal villi **(1pt)**. Multifocally, primarily within the superficial and middle layers of the mucosa, and in some areas traversing the entire depth of the mucosa, there is crypt loss **(1pt)** and stromal collapse **(1pt)**. In this area, crypts are mildly to markedly dilated and lined by necrotic or markedly attenuated epithelium, which is often sloughed into the lumen and mixed with variable amounts of mucin and cellular debris. **(1pt)** The lamina propria between necrotic crypts is expanded by low to moderate numbers of neutrophils and histiocytes, and cellular debris **(1pt)**, which is increased in areas in proximity to mucosal ulceration. There is decreased numbers of lymphocytes within the lamina propria. In ulcerated areas, few colonies of bacilli are also present within the mucosa. **(1pt)** Randomly scattered deep crypts (just above the muscularis mucosa) in areas unassociated with crypt loss are markedly dilated and lined by either necrotic or flattened, attenuated epithelial cells, and their lumina are filled with necrotic epithelial cells, rare neutrophils, and proteinaceous debris (crypt abscess) **(1pt)** In adjacent crypts, epithelial cells have large open-faced nuclei with prominent nucleoli, basophilic cytoplasm, and an increased mitotic rate (hyperplasia). **(1pt)** Multifocally, often in areas adjacent to crypt loss which traverses the mucosa, the nuclei of crypt epithelium are enlarged and hyperchromatic **(1pt)** with peripheralization of chromatin and a central darkly eosinophilic eosinophilic intranuclear viral inclusion. **(1pt)** Multifocally, there are areas of necrosis within the mural smooth muscle with infiltration of moderate numbers of neutrophils and macrophages with rare lymphocytes. **(1pt)**

Lymph nodes: The submitted nodes demonstrate moderate hypocellularity, particularly of the paracortex and lack well-defined follicles. **(1pt)** There are numerous tingible body macrophages scattered throughout the nodes. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Small intestine: Enteritis, necrotizing **(1pt)**, diffuse, moderate to severe, with lymphoid depletion, villar blunting **(1pt)**, crypt hyperplasia, crypt abscesses **(1pt)**, and rare intranuclear viral inclusions.

2. Lymph node: Lymphoid depletion, diffuse, marked. **(1pt)**

CAUSE: Feline parvovirus **(2pt)**

O/C – **(1pt)**

WSC 2020-2021
Conference 9, Case 3. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Cornea: Overlying and artifactually detached from the underlying corneal epithelium **(1pt)**, there is a focally extensive plaque of devitalized cornea which stains a deep brown **(2pt)** (corneal sequestrum). **(1pt)** The most outward portion of this necrotic cornea is anucleate and individual cells can no longer be visualized **(1pt)**, however the integrity of this section of cornea is intact (coagulative necrosis) **(2pt)**. The innermost 1-2 layers of corneal epithelium is swollen and infiltrated by low numbers of viable and necrotic neutrophils. **(1pt)** At one edge of the sequestrum, there is a focal aggregate of few neutrophils, abundant cellular debris, erythrocytes, and plant material. **(1pt)** Keratocyte (stromal cell) nuclei are hypertrophic **(1pt)** within the stroma underlying the sequestrum, which are present in decreasing numbers toward Descemet's membrane. There is vascularization **(1pt)** of the corneal stroma, and infiltration by low numbers of neutrophils **(1pt)**. The underlying Descemet's membrane is intact.

MORPHOLOGIC DIAGNOSIS: Cornea: Necrosis, coagulative **(1pt)**, focally extensive, with pigmentation **(1pt)**and vascularization **(1pt).**

NAME THE CONDITION: Corneal sequestrum **(3pt)**

NAME A PREDISPOSED BREED: Any brachycephalic, Persian is a great one! **(1pt)**

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

WSC 2020-2021
Conference 9, Case 4.

Tissue from a cat.

MICROSCOPIC DESCRIPTION: Kidney: Diffusely, there are changes at all levels of the tubule. With the exception of the collecting ducts, tubular epithelium is swollen by numerous, variably sized clear vacuoles (lipid) **(1pt)**. Approximately 20% of tubules at all levels within the cortex and medulla contain sheaves or fan-like arrangements of birefringent translucent crystals **(1pt)** (oxalates) **(1pt)**, which occasionally rupture the basement membrane **(1pt)**. In many crystal-laden tubules, lining epithelium demonstrates a range of morphologic changes: in some tubules is necrotic **(1pt)** and sloughed into the lumen, and some tubules contain only granular protein casts **(1pt)** within the intact basement membrane, and some tubules are lined by attenuated epithelium and contain luminal protein **(1pt)**. Within some tubules, aggregates of crystals occasionally rupture the basement membrane **(1pt)**. Multifocally within the deep cortex and medulla, there is mild tubular loss, some tubules are effaced by aggregates of neutrophils **(1pt)**, and the interstitium is expanded by low to moderate numbers of lymphocytes **(1pt)**, histiocytes and rare plasma cells and low to moderate amounts of mature collagen **(1pt)**.

Cerebrum: Perivascular areas within the meninges and extending down along Virchow-Robin spaces are multifocally expanded by light pink proteinaceous edema fluid **(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)**, and granular and protein casts. **(1pt)**

2. Cerebrum, perivascular areas: Edema, multifocal, moderate with rare oxalate crystals.

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

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