WSC 2022-2023 Conference 4, Case 1
Tissue from an alpaca.

MICROSCOPIC DESCRIPTION: Lung: Diffusely, alveoli are are widely expanded and often ruptured **(1pt)** by the sheer volume of innumerable macrophages **(1pt)** and very rarely, multinucleated macrophages **(2pt)** ranging up to 30um with abundant pink cytoplasm, admixed with lesser numbers of neutrophils **(1pt)**, rare lymphocytes, and plasma cells, and moderate amounts of cellular debris and edema **(1pt)**. Macrophages often contain large numbers of 2-3 um **(1pt)** round yeasts **(2pt)** with a 1um clear halo within their cytoplasm. Alveolar septa are expanded **(1pt)** by hypertrophied intraseptal and exfiltrating macrophages **(1pt)**, fewer neutrophils and lymphocytes, and marked congestion. There is rare scattered type II pneumocyte hyperplasia **(1pt)**. There is multifocal hemorrhage at the site of septal rupture, but evidence of necrosis is lost within the alveolar exudate. Areas of septal rupture **(1pt)** and alveolar coalescence contain low to moderate amounts of fibroblasts and immature collagen. Airways are filled with a refluxed alveolar contents. **(1pt)**.

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, granulomatous **(1pt)**, diffuse, severe with numerous intracytoplasmic yeasts **(1pt)**.

CAUSE: Histoplasma capsulatum **(3 pt)**

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

WSC 2021-2022
Conference 4, Case 2
Tissue from a cat.

MICROSCOPIC DESCRIPTION: Liver: Approximately 50% of the section is effaced by an unencapsulated, moderately cellular, infiltrated, well-demarcated multinodular neoplasm **(1pt)**. Neoplastic cells are arranged in nests, islands, and trabeculae **(1pt)** on a dense fibrous stroma **(1pt)**. Neoplastic cells have a moderate amount of finely granular basophilic cytoplasm, rarely with a clear discrete vacuole and indistinct cell borders **(1pt)**. Nuclei are irregularly round with finely stippled chromatin, and 1-2 blue nucleoli. **(1pt)** Anisokaryosis and anisocytosis is mild and mitotic figures average 12 per 2.377mm^2. **(1pt)** There are extensive areas of hemorrhage **(1pt)** throughout the neoplasm. Extension of the neoplasm occurs both through the sinusoids and along portal tracts. At the advancing edge of the neoplasm, hepatocytes are compressed and atrophic, sinusoids are congested, Ito cells are prominent **(1pt)**, and Kupffer cells contain a yellow granular pigment.

Haired skin: There is diffuse and severe atrophy **(1pt)** of hair follicles **(1pt)** and apocrine glands **(1pt)**. Follicles are diffusely in telogen **(1pt)**; no hair shafts are present within the markedly atrophic compound follicles. Apocrine glands are contracted and epithelium is vacuolated. **(1pt)** There is minimal to mild acanthosis of the overlying epidermis. The stratum corneum is very thinned, and there is a lack of keratohyaline granules in the granular layer. **(1pt)**

MORPHOLOGIC DIAGNOSIS: 1. Liver: Cholangiocellular carcinoma **(3pt)**
2. Skin, follicles and adnexa: Atrophy **(1pt)**, diffuse, severe, with telogenization **(1pt)**of follicles.

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

WSC 2021-2022, Conference 4, Case 3.
Tissue from a Brazilian hedgehog.

MICROSCOPIC DESCRIPTION: Haired skin. There is diffuse epidermal hyperplasia**(1pt)** ranging up to 4.75mm at it is thickest point with exophytic and papillary growth **(1pt**), marked acanthosis **(1pt)** and elongated, broad rete ridges which extend down into the subcutaneous fat. **(1pt)**. The stratum corneum is expanded up to 0.25mm and this change also extends down into follicles. **(1pt)** Epidermal hyperplasia extends down into follicular ostia. **(1pt)** There is partial thickness necrosis (ranging up to 1.5mm deep)**(1pt)** of up to 33% of the epithelium with segmental replacement by a hemorrhagic serocellular crust. Multifocally within the remaining epithelium, primarily within the stratum spinosum, keratinocytes exhibit mild intracellular edema (ballooning degeneration) **(1pt)** and often condensed, pyknotic nuclei. Keratinocytes contain a single 4-5um **(1pt)**, round to oval, granular eosinophilic intracytoplasmic viral inclusion body **(1pt)**. Within proliferating epithelium, the superficial stratum spinosum and stratum corneum, there is neutrophilic infiltration of the stratum corneum, superficial stratum spinosum, and aggregates of neutrophils which occasionally fill affected follicular ostia. **(1pt)** There is marked acanthosis of the stratum spongiosus with open-faced nuclei with abundant euchromatin and poor delineation of the basal epithelium. Overlying the ulcerated epidermis is a variably thick serocellular crust **(1pt)** composed of keratin, abundant hemorrhage, serum, degenerate neutrophils, cellular debris, and numerous mixed bacteria. The underlying superficial dermis and multifocal areas of the panniculus is expanded by numerous dilated vessels with reactive epithelium, edema, and both diffuse and perivascular dermal infiltrates of many neutrophils and fewer eosinophils, histiocytes, lymphocytes, and plasma cells **(1pt)**. In some areas, there is dermal granulation tissue.

MORPHOLOGIC DIAGNOSIS: Haired skin: Epithelial hyperplasia **(1pt)**, diffuse, severe, with marked acanthosis **(1pt)**, necrosis , ballooning degeneration **(1pt)** and rare intracytoplasmic viral inclusions. **(1pt)**

CAUSE: Brazilian porcupine poxvirus **(2pt)**

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

WSC 2020-2021
Conference 4, Case 4.
Tissue from a cat.

MICROSCOPIC DESCRIPTION: Stomach, pylorus **(1pt)**: Diffusely, the mucosa is thickened up to 2mm by hyperplastic **(1pt)** mucosal epithelium that forms large flattened rugae **(1pt)** which are often mushroom-shaped on cross-section, with tortuous, convoluted glands lined by mucous neck cells with occasional mitotic figures (mucous neck cell hyperplasia) **(1pt)** and which replace underlying glandular mucosa. **(1pt)** Mucous glands are occasionally ectatic (rarely markedly so) **(1pt)** and contain sloughed epithelial cells and necrotic debris and are lined by attenuated to cuboidal regenerating epithelium, have vesiculate nuclei, prominent nucleoli, and increased mitotic figures. **(1pt)** There are low to moderate numbers of lymphocytes, and fewer plasma cells, macrophages, and eosinophils within the lamina propria, often in aggregates. **(1pt)** There are numerous tangential and cross sections of adult nematodes **(1pt)** within the gastric lumen, pits, and glands. **(1pt)** These adult nematodes are 30um in diameter **(1pt)** and have a 2 um thick cuticle with numerous, evenly-spaced, longitudinal, cuticular ridges, **(1pt)** platymyarian - meromyarian musculature **(1pt)**, and a pseudocoelom containing a large intestine with multinucleated cells and either a uterus or testis (trichostrongyles) **(1pt)**.

MORPHOLOGIC DIAGNOSIS: Stomach, pylorus: Gastritis, proliferative **(1pt)**, chronic, diffuse, moderate, with mucous neck cell hyperplasia **(1pt)**, glandular atrophy, **(1pt)**and luminal and intraglandular trichostrongyle adults and larvae **(1pt)**.

CAUSE: *Ollulanus tricuspis* **(3pt)**

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

MORPHOLOGIC DIAGNOSIS: