WSC 2022-2023
Conference 16, Case 1
Tissue from a snow leopard.

MICROSCOPIC DESCRIPTION: Lung: Multiple sections of lung are submitted for examination; lesions vary in severity. Diffusely, alveolar septa are expanded by variable combinations and concentrations of congestion, edema, and small amounts of polymerized fibrin, collagen, low numbers of neutrophils, intraseptal macrophage hypertrophy **(1pt)** and Type 1 pneumocytes are often pyknotic or karyorrhectic. **(1pt)** There is patchy Type 2 pneumocyte hyperplasia. **(1pt)** Throughout the section, alveoli contain varying combinations and concentrations of edema fluid **(1pt)**, polymerized fibrin **(1pt)**, and low to moderate numbers of alveolar macrophages **(1pt)** and neutrophils, and multifocal hemorrhage **(1pt)**. Airway epithelium is multifocally sloughed into the lumen (autolytic change). In two out of the four sections, there is a focally extensive area of parenchymal lytic necrosis **(1pt)** in which septa are discontinuous with the markedly enlarged alveolar spaces containing moderate to large numbers of largely necrotic neutrophils **(1pt)** and fewer macrophages admixed with edema and abundant cellular debris. Within the areas of necrosis, are large numbers of intertwined 4-6um, parallel walled septate fungal hyphae **(1pt)** with dichotomous branching and rare bulbous swellings. **(1pt)** There is multifocal mineralization of necrotic debris as well as fungal hyphae. At the periphery of the necrotic regions, there is abundant alveolar hemorrhage and fibrin deposition **(1pt)** which contains low to moderate numbers of neutrophils and macrophages, as well as septal thrombosis. There is a focally extensive mat of fungal hyphae expanding the pleura as well as extending into the pleural space**(1pt)**, and there is diffuse edema of interlobular septa and pleural tissue in these two sections.

MORPHOLOGIC DIAGNOSIS: 1. Lung: Pneumonia, interstitial **(1pt)**, necrotizing **(1pt)**, diffuse, mild to moderate with septal thrombosis and Type II pneumocyte hyperplasia.
2. Lung: Pleuropneumonia **(1pt)**, necrotizing **(1pt)** and hemorrhagic, focally extensive, severe, with innumerable fungal hyphae. **(1pt)**

CAUSE: SARS-COV-2 **(1pt)** and *Scedosporium* sp. (*Aspergillus* sp. full credit) **(1pt)**

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

Conference 16, Case 2
Tissue from a bobcat.

MICROSCOPIC DESCRIPTION**:** Ileum and attached mesenteric lymph node. There is multifocal to coalescing ulceration of the mucosal surface and the ulcer is covered by a thick layer of viable and necrotic neutrophils enmeshed in fibrin, abundant cellular debris, and luminal bacteria. **(1pt)** The underlying lamina propria is expanded by large numbers of neutrophils, fewer macrophages which markedly separate and often replace crypts, **(1pt)** and there are multifocal areas of granulation tissue with fibroblasts running parallel to the luminal surface. **(1pt)** Crypts multifocally contain necrotic cells admixed with neutrophils and cellular debris (crypt abscesses) and a mild increase in mitotic figures. **(1pt)** Scattered through the mucosal debris are coccidial gamonts ranging up to 15um with a thin hyaline wall and a numeous with a prominent nucleolus (microgametes) and occasionally reddish cytoplasmic protein granules (macrogametes.) **(1pt)** Smaller 10um oocysts also with a thick hyaline wall are admixed in mucosal and luminal debris. **(1pt)** There are small to moderate numbers of lymphocytes, plasma cells and macrophages expanding the submucosa. The submucosal Peyer's patches are are markedly depopulated of lymphocytes **(1pt)**, largely with macrophages and stromal cells remaining; lytic lymphocytes and tingible body macrophages are present within the Peyer's patch. **(1pt)** There are low to moderate numbers of macrophages, lymphocytes, plasma cells, and neutrophils extending perivenular and perilymphatic fibrous connecting tissue and filling lymphatics in the muscularis and serosa. **(1pt)** There are scattered aggregates of lytic necrosis within the muscularis, with infiltrating neutrophils and degenerate and necrotic smooth muscle cells. **(1pt)** Within the serosa and attached mesentery, vessels exhibit varying degrees of vasculitis, ranging from perivascular accumulations of lymphocytes, plasma cell and macrophages, to vessels which contain large fibrinocellular thrombi and marked lytic necrosis of the vessel wall which extends into the surrounding mesentery. **(1pt)** There is diffuse and severe lytic necrosis of the attached mesenteric lymph node with loss of architecture and marked lymphocyte depletion. **(1pt)** The remaining node is infiltrated by large numbers of macrophages and fewer neutrophils, admixed with lytic lymphocytes, abundant cellular debris, and numerous tingible body macrophages. **(1pt)**

MORPHOLOGIC DIAGNOSIS: 1. Ileum: Ileitis, necrotizing **(1pt)**, diffuse, severe, with ulceration, multifocal vasculitis, and marked Peyer's patch necrosis. **(1pt)**
2. Mesentery, vessels: Vasculitis, necrotizing, with thrombosis. **(1pt)**
3. Mesenteric lymph node: Lymphadenitis, necrotizing, diffuse, severe, with marked lymphoid depletion. **(1pt)**
4. Ileum: Coccidial gamonts and oocysts, multiple.

CAUSE: *Francisella tularensis* (or another hot gram negative, excluding Yersinia (which would have large colonies). **(2pt)**

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

WSC 2022-2023
Conference 16, Case 3
Tissue from a cat.

MICROSCOPIC DESCRIPTION: Spleen: Splenic white pulp lacks follicular morphology **(1pt)** and is markedly depleted **(1pt)**. The red pulp is markedly congested **(1pt)**, and in some areas, erythrocyte fragments abound. **(1pt)** The red pulp contains markedly increased numbers of neutrophils and macrophages. **(1pt)** Scattered throughout the red pulp are discrete areas of lytic necrosis **(1pt)** in which fragmented erythrocytes are numerous neutrophils **(1pt)** and fewer macrophages **(1pt)**, abundant cellular debris, fibrin **(1pt)**, and extracellular **(1pt)** and intrahistiocytic **(1pt)** 2-3um encapsulated **(1pt)** bacilli **(1pt)**.

MORPHOLOGIC DIAGNOSES: Spleen: Splenitis, necrotizing **(1pt)** and pyogranulomatous **(1pt)**, diffuse, severe with lymphoid depletion **(1pt)** and innumerable extracellular and intrahistiocytic bacilli **(1pt.)**

CAUSE: *Klebsiella pneumoniae* **(2pt)**

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

WSC 2022-2023
Conference 16, Case 4.
Tissue from an African green monkey.

MICROSCOPIC DESCRIPTION: Stomach: Extending downward from the gastric submucosa and expanding the gastric wall (and focally infiltrating the overlying deep gastric mucosa) **(1pt)** is an infiltrative, unencapsulated, moderately cellular, multilobulated neoplasm. **(1pt)** Neoplastic cells are arranged in long streams and bundles **(1pt)** and less commonly in a storiform pattern and separated by a moderate fibrous matrix **(1pt)**. Neoplastic cells are spindled with indistinct cell borders and a moderate amount of a finely fibrillar eosinophilic cytoplasm **(1pt)**. Nuclei are oval to elongate with finely stippled chromatin and 1-3 small basophilic nucleoli. **(1pt)** There is mild anisokaryosis **(1pt)** and scattered single cell necrosis **(1pt)**. Mitoses average 4 per 2.37mm^2 field. **(1pt)** There are scattered areas of sclerosis within the neoplasm **(1pt)** . In areas of infiltration, the lamina propria is mildly expanded by neoplastic cells, edema, and low numbers of neutrophils, macrophages and lymphocytes **(1pt)**. There are small aggregates of lymphocytes and plasma cells in he deep mucosa throughout the rest of the section. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Stomach: Gastrointestinal stromal tumor **(5pt)**

NAME TWO DIAGNSTIC IMMUNOSTAINS: c-kit **(1pt)** and DOG-1 **(1pt)**

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