WSC 2022-2023 Conference 2, Case 1
Tissue from a pot bellied pig.

MICROSCOPIC DESCRIPTION: Cerebellum: Effacing approximately 50% of the cerebellar architecture **(1 pt)** and extending along perivascular areas, there are multiple foci of granulomatous **(1 pt)** inflammation. These foci contain innumerable polygonal to spindled epithelioid macrophages **(1 pt)** ranging up to 15um in diameter **(1 pt)** with abundant amphophilic cytoplasm which contains numerous 2x3um bacteria (**1 pt)** in *bas relief.* Scattered throughout the inflammatory infiltrate are moderate numbers of multinucleate giant cell macrophages of the foreign body type **(1 pt)**, low numbers of neutrophils **(1 pt)** and eosinophils **(1 pt)**, and low numbers of lymphocytes and plasma cells **(1 pt)** in close proximity to vessels. Small perivascular cuffs of inflammatory cells as previously described extend out from the main body of the exudate, and transition to primarily lymphocytes and plasma cells further outward from the inflammatory foci. At the periphery of the inflammatory focus, within the white matter, there is mild gliosis **(1 pt)** with hypertrophic microglia and increased numbers of astrocytes, including gemistocytic astrocytes **(1 pt)** and numerous dilated myelin sheaths with rare spheroids. **(1 pt)** The granular layer is markedly depleted of nuclei **(1 pt)** and there is multifocal segmental Purkinje cell loss **(1 pt)**. The molecular and granular layers contains numerous foci of crystalline mineral which expand the lumen, wall, or totally efface vessels **(1 pt)**; similar vascular changes are present in the meninges. Multifocally, the granulomatous infiltrate extends into the overlying meninges **(1 pt)**, and there is marked congestion and multifocal hemorrhage of meningeal vessels.

MORPHOLOGIC DIAGNOSIS: Cerebellum: Meningoencephalitis **(1 pt)**, granulomatous **(1 pt)**, focally extensive, severe, with innumerable intrahistiocytic bacilli **(1 pt)**

CAUSE: *Mycobacterium avium* var *hominisuis* **(1pt)**

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

MICROSCOPIC DESCRIPTION: Eye (lens and optic nerve is not present): Multifocally and expanding the inner half of the sclera **(1pt.)**, there is an infiltrate of innumerable polygonal to spindled macrophages **(1pt.)** which are multifocally admixed with fewer neutrophils, lymphocytes and plasma cells, hemorrhage, fibrin, and cellular debris. **(1pt.)** There is clefting and hypereosinophilia of scleral collagen (collagenolysis) **(1pt.)**, and aggregates of moderate numbers of lymphocytes and plasma cells in more outer areas of the sclera remote from the profound inflammatory exudate. The inflammatory exudate extends into and expands the choroid **(1pt.)**, and there is emigration of melanin-laden macrophages **(1pt.)** into the underlying sclera. The inner layers of the choroid is markedly expanded by neutrophils and cellular debris **(1pt.)**. The ciliary body **(1pt.)** is similarly expanded by macrophages and neutrophils admixed with cellular debris, hemorrhage, and fibrin and edema and is unilateral adhered to the sclera. On the other side, there is occlusion of the drainage angle **(1pt.)**, expansion of the iris leaflet with edema and inflammation as previously described, and the anterior surface is covered by a thin pre-iridal fibrovascular membrane **(1pt.)**. The anterior chamber is filled with free neutrophils, macrophages, cellular debris, hemorrhage, fibrin, and proteinaceous fluid. **(1pt.)** There is rupture and loss of Descemet's membrane and adherence of the iris to posterior asprect of the cornea (anterior synechia)**(1pt.)** The cornea is markedly expanded by a proliferation of new vessels within the stroma **(1pt.)**, perivascular aggregates of variable combinations and concentrations of macrophages, lymphocytes, plasma cells and fewer neutrophils, edema, and hemorrhage. There is migration of melanophages into the corneal stroma **(1pt.)**, and peripheral squamous metaplasia. In the overlying eyelid, the submucosal tissue contains numerous lymphocytes and plasma cells which also infiltrates minor lacimal glands. **(1pt.)** There are large numbers of melanophages infiltrating the submucosal tissue as well.

MORPHOLOGIC DIAGNOSIS: 1. Eye: Scleritis and anterior uveitis, granulomatous **(1pt.)**, diffuse, severe, with anterior synechiae **(1pt.)** , preiridal fibrovascular membrane **(1pt.)**, and hyphema.
2. Conjunctiva: Conjunctivitis, lymphoplasmacytic, diffuse, marked with hyperpigmentation. **(1pt.)**

NAME THE CONDITION: Granulomatous episclerakeratitis **(1pt.)**

WSC 2021-2022, Conference 1, Case 3.
Tissue from a dog.

MICROSCOPIC DESCRIPTION: Spinal cord: Multifocally, meningeal vessels **(1pt.)**, and to a lesser extent, vessels in the both the gray and white matter and within spinal nerve roots **(1pt.)**, contain variable numbers of neoplastic lymphocytes **(2pt.)** in circulation. Lymphocytes range from 7-20um in diameter, with abundant granular eosinophilic cytoplasm **(1pt.)**. Nuclei are irregularly round, with finely stippled chromatin and 1-2 large eosinophilic nucleoli **(1pt.)**. There is marked anisocytosis and anisokaryosis **(1pt.)**, and mitotic figures are rare **(1pt.)**. There are occasional apoptotic lymphocytes in circulation**.** Occasionally, neoplastic lymphocytes infiltrate the vessel wall where they are admixed with mild edema and cell debris. **(1pt.)** Multifocally, walls of affected vessels are multifocally expanded by a brightly eosinophilic protein **(1pt.)** which obscures mural architecture and in which are embedded neoplastic cells and cellular debris (fibrinoid necrosis) **(1pt.)**. The adventitia of these vessels is expanded by large numbers of histiocytes, fewer lymphocytes and neutrophils, and in the meninges, activated fibroblasts **(1pt.)**. Other meningeal vessels are often surrounded with low to moderate numbers of lymphocytes and histiocytes and small amounts of hemorrhage, and the meninges are moderately edematous. Within areas of white matter containing affected vessels (predominantly the dorsal funiculi in this section), there is rarefaction with numerous dilated myelin sheaths **(1pt.)**, many of which contain swollen axons (spheroids) **(1pt.)**, axonal debris, or Gitter cells. Within areas of gray matter containing affected vessels, rare neurons are angular, eosinophilic and shrunken (necrotic), or dilated and pale with loss of Nissl substance. **(1pt.)** There is mild to moderate gliosis, rare spheroids **(1pt.)** and multifocal hemorrhage. There are low numbers of dilated nerves within spinal nerve roots. Diffusely, neurons contain moderate amounts of cytoplasmic lipofuscin.

MORPHOLOGIC DIAGNOSIS: 1. Spinal cord, meningeal and parenchymal vessels: Intravascular lymphoma. **(3pt.)**
2. Spinal cord: Myelomalacia, multifocal to coalescing, mild to moderate, with intravascular thrombi **(1pt.)**

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

WSC 2020-2021
Conference 1 Case 4.
Tissue from a rhesus macaque

MICROSCOPIC DESCRIPTION: Ileum **(1pt.)**: Arising in the mucosa, and transmurally **(1pt.)** infiltrating the submucosa, muscularis, and the markedly expanded serosa, there is an unencapsulated poorly demarcated, moderately cellular, multicystic **(1pt.)** neoplasm composed of cuboidal **(1pt.)** epithelial cells arranged in dilated acini **(1pt.)** expanded by lakes of mucin **(1pt.)** containing small amounts of cellular debris and rare sloughed neoplastic cells are present on a moderate fibrous stroma **(1pt.)**. Neoplastic cells have abundant eosinophilic vacuolated cytoplasm **(1pt.)** which often contains large apical mucus vacuoles **(1pt.)** which displaces the nucleus peripherally ("signet ring cells) **(1pt.)**. Nuclei are irregularly round with stippled chromatin and 1-2 nucleoli **(1pt.)**. Mitoses average 3 per 2.37mm^2 field. **(1pt.)** There is marked villar blunting and neoplastic cells multifocally expand the lamina propria, separating and surrounding crypts. **(1pt.)** There is marked dilation of lymphatics in all layers of the wall (edema) **(1pt.)** which is most prominent in the mucosa. In infiltrated areas of the muscularis, There is hypereosinophilia, fragmentation and pyknosis of smooth muscle cells at the periphery of infiltrating, mucus secreting neoplastic cells. **(1pt.)** The neoplasm extends to lateral margins of the submitted section

Mesentery: Neoplastic cells as previously described diffusely infiltrate the adipose tissue of the mesentery. Neoplastic glands measure up to 1mm in diameter, and in this section, the fibrous stroma is more prominent, and there are aggregates of moderate numbers of lymphocytes and fewer plasma cells scattered throughout the neoplasm **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Colon, mesentery: Mucinous **(2pt.)** adenocarcinoma **(2pt.)**

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

MORPHOLOGIC DIAGNOSIS: