WSC 2023-2024
Conference 11, Case 1
Tissue from a cat.

MICROSCOPIC DESCRIPTION: Liver: Four sections of liver and one of spleen are submitted for examination.

Liver: There is diffuse predominantly periportal **(1pt)** hepatocellular degeneration and necrosis. Areas of necrosis range from areas of coagulation necrosis **(1pt)** in which the hepatocytes have lost differential stain affinity **(1pt)** and are admixed with hemorrhage, to larger areas of periportal hepatocellular which are brightly eosinophilic and granular **(1pt)** to heavily vacuolated **(1pt)** (or a combination of both) with pyknotic and/or karyorrhectic nuclei and stromal collapse. Vacuolated hepatocytes have one or more variably sized lipid vacuoles **(1pt)** within their cytoplasm. There is infiltration of low numbers of neutrophils **(1pt)**and moderate hemorrhage **(1pt)** within areas of hepatocellular vacuolation and necrosis. Adjacent to areas of necrosis, hepatocytes are also heavily vacuolated (lipidosis) **(1pt)**. Scattered bile canaliculi are dilated by bile pigment. **(1pt)** In some sections, there are nodules of hepatocellular regeneration **(1pt)**, and hepatocytes are often vacuolated in regenerative nodules as well. There is mild biliary hyperplasia.

Spleen: The spleen is chronically and moderately congested. **(1pt)** There is mild diffuse expansion of splenic sinusoids by small amounts of hemorrhage, fibrin, and edema. There are scattered macrophages with phagocytized erythrocytes. There is mild depletion of splenic lymphoid tissue with few tingible body macrophages. **(1pt)**

MORPHOLOGIC DIAGNOSIS: 1. Liver: Hepatocellular degeneration **(1pt)** and necrosis **(1pt)**, periportal and bridging, **(1pt)**with marked hepatocellular lipidosis **(1pt)** and regenerative nodules. **(1pt)**
2. Spleen: Congestion, chronic, diffuse, mild to moderate with hemosiderin-laden macrophages. **(1pt)**

O/C: (1pt)

WSC 2023-2024
Conference 11, Case 2
Tissue from a Pacific pond turtle.

MICROSCOPIC DESCRIPTION: Head: A cross section of the head at the level of the caudal olfactory lobes (minus the mandible) is submitted for examination. **(1pt.)** Extending downward from the ulcerated scaled epidermis **(1pt.)**, extending into the underlying cranium and into the underlying meninges and compressing the cerebrum **(1pt.)**, there are numerous epithelial inclusion cysts **(1pt.)** ranging up to 2mm in diameter. They often coalesce , and one cyst which effaces the calvarium on one side measures 6mmx2mm. The cysts are lined by a wall of basally pigmented epithelium which is 4-5 cell layers thick **(1pt.)** and undergoes gradual keratinization **(1pt.)**; the lumina of the cysts contains abundant lamellar keratin. **(1pt.)** Within the center of each cyst, there is a center of brightly eosinophilic granular cellular debris In which numerous outlines of a 2-4um **(1pt.)** dichotomously branching fungal hyphae **(1pt.)** are visible. Some inclusion cysts contain large necrotic bone fragments **(1pt.)** which lack lacunar osteocytes, and occasionally bacterial colonies. On one side of the calvarium, there are granulomas **(1pt.)** centered on similar aggregates of cellular debris and fungal hyphae which infiltrate the skeletal muscle. Granulomas are lined by up to 5 layers of epithelioid macrophages and contain moderate numbers of heterophils and occasionally foreign body type macrophages at their periphery and interstitial tissue. **(1pt.)** In this area, skeletal muscle fibers are fragmented, hypereosinophilic, hyalinized (degeneration and necrosis) and atrophic. **(1pt.)** Multifocally, there are numerous areas of calvarial bone necrosis with empty lacunae, irregular resorption (with scalloped edges lined by osteoclasts in Howship's lacunae), and some proliferation of woven bone. **(1pt.)** There is mild spongiosis and gliosis of compressed areas of cerebral cortex. **(1pt.)**

MORPHOLOGIC DIAGNOSIS**:** Head: Dermatitis, cellulitis, myositis, osteomyelitis, and meningitis, **(1pt.)** granulomatous **(1pt.)**, with epithelial inclusion cyst **(1pt.)** formation

CAUSE: *Emydomyces testavorans* **(2pt.)**

WSC 2023-2024
Conference 11, Case 3.
Tissue from a harbor porpoisesheep.

MICROSCOPIC DESCRIPTION: Liver: There is diffuse mild autolysis in the single sample of liver. **(2pt.)** The hepatocytes are diffusely disassociated. **(2pt.)** Scattered randomly throughout the section are foci of lytic necrosis **(2pt.)** , in which there is necrosis and loss of hepatocytes, stromal collapse, **(2pt.)** hemorrhage, **(1pt.)** small amounts of fibrin, infiltrating necrotic neutrophils **(1pt.)** and cellular debris. **(1pt.)** There is scattered moderate EMH within sinusoids. **(2pt.)** Hepatocytes contain multiple cytoplasmic lipid vacuoles. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: 1. Liver: Hepatitis, necrotizing, **(2pt.)** multifocal and random **(1pt.)**, moderate.
2. Liver: Extramedullary hematopoiesis, diffuse, moderate. **(2pt.)**

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

WSC 2023-2024
Conference 11, Case 4.
Tissue from a zebrafish

MICROSCOPIC DESCRIPTION: Multiple cross and transverse section of a zebrafish are presented for examination. In one section,s there are two distinct processes going on. There is a focal ulceration and necrosis **(1pt.)** within the scaled skin which extends into the underlying soft tissue, skeletal muscle **(1pt.)**, and into the coelom. Necrotic areas of the body wall are infiltrated by densely cellular granulation tissue **(1pt.)** which contains abundant hemorrhage, large numbers of viable and degenerate hemocytes **(1pt.)**, numerous fibroblasts **(1pt.)**oriented perpendicular to the body wall, embedded scale fragments **(1pt.)**surrounded by epithelioid macrophages, and mixed colonies of bacteria **(1pt.)**. In areas of inflammation, skeletal muscle fibers are hypereosinophilic, hyaline, and vacolated (degenerative) **(1pt.)** or fragmented and pyknotic (necrotic.) **(1pt.)**

Within the coelom in this and other sections, there are numerous viable eggs of various stages. In the coelom adjacent to the body wall ulcer, there is ovodegeneration with extrusion of protein **(1pt.)** which forms a brightly eosinophilic, partially lamellated mass throughout which is infiltrated and surrounded by innumerable epithelioid macrophages **(1pt.)**, fewer granulocytes, **(1pt.)**and rare multinucleated foreign body macrophages. **(1pt.)** There are also mixed bacterial colonies within the mass of protein. The wall of the coelom **(1pt.)**is circumferentially lined by a layer of 1-3 histiocytes **(1pt.)**, arising both from the ruptured egg mass and the perforation of the body wall.

MICROSCOPIC DIAGNOSIS: 1. Scaled skin and body wall: Dermatitis, cellulitis, and myositis, necrotizing, chronic focally extensive, severe with fibrosis. **(1pt.)**
2. Ovary: Oophoritis **(1pt.)**, granulomatous **(1pt.)** and granulocytic, diffuse, severe with free protein **(1pt.)**.
3. Coelom: Coelomitis, granulomatous and granulocytic, segmental, marked. **(1pt.)**

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