

WSC 2024-2025
Conference 24, Case 1
Tissue from a pig.

MICROSCOPIC DESCRIPTION: Heart, ventricle: Multifocally and randomly (1pt) within the epicardium, myocardium, and endocardium the interstitium is expanded by moderate numbers of lymphocytes (2pt), with fewer macrophages (1pt), neutrophils (1pt), and rare plasma cells, separated by moderate amounts of edema (1pt). Adjacent cardiomyocytes often exhibit one or more of the following changes: swelling and pallor and loss of cross-striations (degeneration) (1pt), shrinkage, contraction band formation (1pt), pyknosis (1pt), karyorrhexis, fragmentation (1pt) (necrosis) (1pt), and stippling with granular mineral (1pt) (dystrophic calcification). Occasionally, necrotic myofibers are infiltrated by macrophages (1pt). In areas of cardiac necrosis and inflammation, small myocardial vessels are congested, and often contain increased numbers of neutrophils, which are occasionally paved. Perivascular connective tissue is mildly edematous, and few myocardial arterioles contain low numbers of lymphocytes and histiocytes aggregated within adventitial connective tissue. (1pt). There is a mild increase in fibrous connective tissue in affected areas. (1pt)

MORPHOLOGIC DIAGNOSIS: Heart, ventricle: Pancarditis, necrotizing (1pt) and lymphohistiocytic (1pt), multifocal, random, mild to moderate.

CAUSE: Porcine cardiovirus (encephalomyocarditis virus) (3pt) (Porcine aphthovirus ok)

O/C: (1pt)

WSC 2024-2025
Conference 24, Case 2
Tissue from a dog.

MICROSCOPIC DESCRIPTION: Liver: There are multifocal, randomly scattered **(1pt)**, and often coalescing areas of coagulative **(1pt)** necrosis in which hepatocellular architecture is lost, cells are dissociated, have lost appropriate stain quality, and nuclei are either faded or fragmented **(1pt)**. There is moderate hemorrhage **(1pt)** within these areas. There are scattered individual necrotic hepatocytes within the section as well. **(1pt)** At the periphery of these areas of necrosis, hepatocytes are multifocally swollen and vacuolated (degenerate) **(1pt)** and nuclei often contain a single 2-4um pink intranuclear viral inclusion often separated from the adjacent chromatin by a thin clear halo **(2pt)**.

Kidney: Multifocally, there are multifocal areas of interstitial and glomerular hemorrhage **(1pt)**, with individualized karyorrhectic cells of uncertain lineage. **(1pt)** Throughout the section, there are clusters of proximal convoluted tubules **(1pt)** in which epithelium is necrotic with brightly eosinophilic anuclear cells lining the basement membrane, admixed with cellular debris. There is necrosis of glomerular **(1pt)** mesangial and endothelial cells, with intraglomerular hemorrhage and rarely these cells contain an intranuclear viral inclusion. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Liver: Hepatitis, necrotizing **(1pt)**, multifocal to coalescing, moderate with occasional intrahepatocytic intranuclear viral inclusions. **(1pt)**

Kidney: Nephritis, necrotizing **(1pt)**, tubular and glomerular, multifocal, moderate with rare intranuclear viral inclusions. **(1pt)**

CAUSE: Canine herpesvirus-1 **(2pt)**

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

WSC 2024-2025
Conference 24, Case 3.
Tissue from a calf.

MICROSCOPIC DESCRIPTION: Cerebrum: Diffusely, Virchow-Robins spaces are expanded by moderate (1 pt.) numbers of macrophages (1 pt.) and lymphocytes (1 pt.) and rare neutrophils which infiltrate the adjacent parenchyma (1 pt.). In areas of heavy cellularity, the grey matter is loosely arranged with clear space and karyorrhectic cells (necrosis) (1 pt.). Within these areas, the grey matter contains numerous large reactive astrocytes (1 pt.) with vesicular nuclei and increased numbers of microglia (gliosis) (1 pt.). Neurons are often shrunken, angular, and hypereosinophilic, with karyorrhectic nuclei (1 pt.) (neuronal necrosis) (1 pt.). Multifocally, neurons and astrocytic nuclei (1 pt.) are swollen by a large eosinophilic intranuclear (1 pt.) viral inclusion (1 pt.) which is surrounded by a clear rim. Small vessels are often separated from surrounding neuropil by clear space (edema), and throughout the section, vessels are often lined by hypertrophic endothelial cells. (1 pt.) There is a diffuse infiltrate of moderate numbers of lymphocytes and histiocytes within the meninges, which often forms small cuffs in perivascular locations (1 pt.). Vessels are dilated, congested, and lined by hypertrophic endothelial cells.

MORPHOLOGIC DIAGNOSIS: Cerebrum: Meningoencephalitis, necrotizing and lymphohistiocytic, diffuse, moderate to severe, with astrocytic and neuronal intranuclear viral inclusion bodies. (3 pt.)

CAUSE: Bovine herpesvirus-5 (BHV-1 OK) (2pt.)

O/C - (1pt.)

WSC 2024-2025
Conference 24 Case 4.
Tissue from a foal.

MICROSCOPIC DESCRIPTION: Lung: Two sections of lung are submitted for examination; the lesion is similar in both sections but vary in severity. Diffusely, alveolar septa **(1pt.)** are moderately expanded by congestion, hemorrhage, edema **(1pt.)**, small amounts of polymerized fibrin, mild to moderate numbers of neutrophils **(1pt.)**, septal macrophage hypertrophy, and scattered lytic cells and cellular debris **(1pt.)**. There is multifocal septal necrosis **(1pt.)**, particularly in areas in which the adjacent alveoli are flooded with hemorrhage. There is multifocal scattered Type II pneumocyte hyperplasia. **(1pt.)** Multifocally, alveoli contain varying concentrations and combinations of edema **(1pt.)**, hemorrhage, foamy alveolar macrophages, neutrophils **(1pt.)**, and cellular debris. Airways contain refluxed alveolar contents. **(1pt.)** Multifocally and segmentally, there is necrosis **(1pt.)** within the walls of arterioles **(1pt.)** with endothelial cells loss, and necrosis of smooth muscle cells admixed with few infiltrating neutrophils, cellular debris, and small amounts of eosinophilic protein. **(1pt.)** There is edema of the arteriolar adventitia with few neutrophils and macrophages **(1pt.)**. There is moderate edema of the interlobular septa and pleura **(1pt.)**, with infiltration of low to moderate number of neutrophils, macrophages, and fewer lymphocytes.

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, interstitial **(1pt.)**, necrotizing **(1pt.)**, diffuse, moderate with multifocal arteriolar necrosis **(1pt.)** and marked alveolar, intraseptal and pleural edema. **(1pt.)**

CAUSE: Equine arterivirus **(1pt.)**

O/C- (1pt.)