

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

MICROSCOPIC DESCRIPTION: Liver: Scattered randomly **(1pt.)** throughout the section are small foci of hepatocellular coagulative necrosis **(2pt.)** and loss. Within these areas, hepatocytes are variably shrunken, hypereosinophilic, and possess lytic nuclei. **(1pt.)** Necrotic foci are infiltrated by low numbers of histiocytes **(1pt.)** and neutrophils **(1pt.)**, and there is moderate congestion and hemorrhage within the collapsing hepatic sinusoids. **(1pt.)** At the periphery of these necrotic foci, hepatocyte nuclei **(1pt.)** often contain a single 2-4 um eosinophilic viral inclusion **(1pt.)**. Bordering areas of necrosis, the walls of sublobular veins are infiltrated by low to moderate numbers of neutrophils, macrophages, lymphocytes and plasma cells **(1pt.)** and there are often fibrinocellular clots within the lumen which are focally attached to the wall in areas of endothelial cell loss (vasculitis) **(1pt.)**. Rounded up and necrotic hepatocytes are also present within the lumina of veins (presumably detached from areas of necrosis). **(1pt.)** There are moderate numbers of histiocytes and lymphocytes within portal triads **(1pt.)**, and small amounts of EMH scattered throughout the section. The hepatic capsule is diffusely edematous **(1pt.)** and there is mild edema within portal areas.

MORPHOLOGIC DIAGNOSIS: Liver: Hepatitis, necrotizing **(1pt.)**, multifocal, moderate, with hepatocellular intranuclear inclusions. **(1pt.)**

CAUSE: Equine herpesvirus-1 **(3pt.)**

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

WSC 2024-2025
Conference 1, Case 2
Tissue from a horse.

MICROSCOPIC DESCRIPTION: Panniculitis and underlying skeletal muscle, site unspecified: Effacing the panniculus and extending into the underlying skeletal muscle **(1pt.)** are numerous coalescing pyogranulomas (2pt). These pyogranulomas are centered on aggregates of densely packed, amphophilic, 5-10 um wide, septate (1pt) fungal hyphae(1pt) with thick, nonparallel walls (1pt), rare irregular non-dichotomous branching (1pt), and up to 25 um diameter bulbous swellings (1pt), which are surrounded by radiating, club-shaped amorphous lightly eosinophilic material (Splendore-Hoeppli reaction) (1pt) which are infiltrated by low numbers of neutrophils and fewer macrophages. . The pyogranulomas themselves are composed of a thick wall of composed centrifugally of numerous viable and necrotic neutrophils numerous epithelioid macrophages (1pt) and viable and necrotic neutrophils, with fewer lymphocytes, plasma cells, occasional multinucleated giant cells (1pt), enmeshed in small amounts of collagen, fibroblasts, and small-caliber blood vessels. Separating pyogranulomas are is abundant mature fibrous connective tissue (fibrosis) infiltrated by low to moderate numbers of lymphocytes and plasma cells. . (1pt)

MORPHOLOGIC DIAGNOSIS: Panniculus and underlying skeletal muscle,: Pyogranulomas (1pt), multiple, multifocal to coalescing with numerous fungal hyphae (1pt) Splendore-Hoeppli material (1pt), and marked pannicular fibrosis.

MOST LIKELY CAUSE: *Trichophyton* sp. (2pt)

CONDITION: Dermatophytic pseudomycetoma (1pt)

O/C: (1pt.)

WSC 2024-2025
Conference 1, Case 3.
Tissue from a horse.

MICROSCOPIC DESCRIPTION: Guttural pouch **(1pt.)**, including muscular artery (internal carotid), cross and tangential sections of several large nerves and underlying skeletal muscle. The wall of the guttural pouch is multifocally ulcerated **(1pt.)**, and infiltrated by numerous 4-6µm diameter septate fungal hyphae **(1pt.)** with parallel walls and dichotomous branching **(1pt.)**. The underlying wall of the guttural pouch is expanded by hemorrhage, fibrin, and edema and infiltrated by moderate numbers of viable and degenerate neutrophils admixed with abundant cellular debris **(1pt.)**, and lesser numbers of histiocytes, lymphocytes and plasma cells. In addition to fungal hyphae, the lumen of the guttural pouch contains an exudate composed of abundant necrotic eosinophilic debris, polymerized fibrin, and low numbers of degenerate neutrophils. **(1pt.)** Similar changes are present in the adjacent carotid artery. **(1pt.)** The arterial wall exhibits extensive and coalescing areas of lytic necrosis **(1pt.)**, and expanded and infiltrated by large numbers of degenerate neutrophils and cellular debris, which separate hyalinized and degenerative smooth muscle fibers **(1pt.)**. There is decreased staining of the skeletal muscle and soft tissues adjacent to the affected artery (coagulative necrosis/infarction) **(1pt.)** as well as infiltration of the skeletal muscle and epimysium by numerous neutrophils, macrophages and lymphocytes at the periphery of the areas of coagulative necrosis. **(1pt.)** The necrosis and inflammation from both inflamed/necrotic guttural pouch and internal carotid multifocally extends into the subjacent skeletal muscle and soft tissue. **(1pt.)** The coagulative necrosis affecting the skeletal muscle also affects branches of the facial nerve, whose endomysium is further expanded by hemorrhage, edema and low to moderate numbers of infiltrating neutrophils, macrophages, lymphocytes and plasma cells. **(1pt.)** An arteriole within these nerve bundles is occluded by a fibrin thrombus.

MORPHOLOGIC DIAGNOSIS: Guttural pouch: Eustachitis **(1pt.)** and arteritis **(1pt.)**, necrotizing **(1pt.)**, diffuse, severe, with numerous fungal hyphae, vascular thrombosis and infarction **(1pt.)** of skeletal muscle and nerves.

CAUSE: *Aspergillus* sp. (definitely know *A. nidulans* is a significant cause) **(2pt.)**

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

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

MICROSCOPIC DESCRIPTION: Nasal tissue **(1pt)**: Multiple fragments of nasal mucosa are submitted for examination. Extending to the multifocally ulcerated **(1pt)** mucosal epithelium, the submucosa contains numerous irregularly shaped aggregates of a waxy, homogenous eosinophilic material **(1pt)** (amyloid) **(2pt)** ranging up to 0.5mm in diameter. Some aggregates are being eliminated across the epithelium. The aggregates of amyloid are intimately surrounded by a epithelioid and foreign body macrophages **(2pt)**, and the surrounding lamina propria contains variable numbers of neutrophils **(1pt)**, eosinophils **(1pt)**, and macrophages with fewer lymphocytes and plasma cells **(1pt)** on a background of granulation tissue. **(2pt)** In some fragments, there is expansion of vascular walls with amyloid, thrombosis **(1pt)**, and extensive edema, hemorrhage, and polymerized fibrin within surrounding tissue **(1pt)**, as well as aggregates of siderophages **(1pt)** and small amounts of hematoidin. In areas of ulceration, the mucosa is often covered by a serocellular crust composed of serum, blood, fibrin, and large numbers of degenerate neutrophils and eosinophils admixed with cellular debris and scattered colonies of cocci. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Nasal mucosa: Amyloidosis **(1pt)**, multifocal, severe, with mucosal ulceration, vascular thrombosis **(1pt)** and chronic hemorrhage **(1pt)**. .

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