

WSC 2021-2022 Conference 3

Case 1 – Tissue from an ox.

MICROSCOPIC DESCRIPTION: Spinal cord and meninges: Replacing extradural fat **(1pt)**, and extending into and expanding the dura **(1pt)**, there are numerous, often coalescing well-defined pyogranulomas **(1pt)** embedded in a dense bed of fibrous connective tissue. The pyogranulomas often center on a round clear vacuole **(1pt)**, which is surrounded centrifugally by abundant cellular debris **(1pt)**, large numbers of viable and degenerate neutrophils **(1pt)**, and in turn by large numbers of epithelioid macrophages **(1pt)** and fewer lymphocytes **(1pt)** which are enmeshed in lamellations of wispy collagen which progressively become more compact at the periphery **(1pt)**. Additional, smaller clear vacuoles are scattered in low numbers randomly throughout the pyogranuloma, and rarely, pyogranulomas contain small aggregates of crystalline mineral **(1pt)**. The pyogranulomas are separated by dense bands of mature fibrous connective tissue **(1pt)** which often contain aggregates of low to moderate numbers of lymphocytes, and fewer histiocytes and plasma cells in perivascular locations **(1pt)**. A similar but less cellular infiltrate is dispersed evenly throughout this fibrous connective tissue. Throughout all funiculi, **(1pt)** asymmetrically and randomly scattered axon sheaths are dilated and occasionally contain Gitter cells (axonal necrosis). **(1pt)**

MICROSCOPIC DIAGNOSIS: Spinal cord, epidural space: Pyogranulomas, **(1pt)**, multiple **(1pt)**, diffuse, severe, with numerous clear vacuoles **(1pt)** (consistent with adjuvant droplets) and marked fibrosis.

CAUSE: Water-in-oil vaccine. **(2pt)**

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

MICROSCOPIC DESCRIPTION: Liver: Affecting approximately 33% **(1pt)** of the section is a well-defined area of hepatic parenchyma that has lost cellular architecture and differential staining capability **(1pt)** (lytic necrosis) **(1pt)**. The area of necrosis contains few inflammatory cells, primarily neutrophils. **(1pt)** The area of necrosis is bordered a band of shrunken hepatocytes which exhibit individualization, and are swollen and vacuolated (degeneration) **(1pt)** or shrunken with a scant amount of hyper eosinophilic cytoplasm and a pyknotic nucleus (necrosis). **(1pt)** This area is infiltrated by moderate numbers of viable and degenerate neutrophils **(1pt)** and macrophages **(1pt)**, with fewer lymphocytes which are admixed with moderate amounts of cellular debris. In less affected areas, there are multifocal areas of neutrophil aggregation and around small clusters of necrotic hepatocytes. **(1pt)** Throughout the section, sinusoids are expanded by increased numbers of circulating neutrophils **(1pt)** and hypertrophic Kupffer cells. Throughout the section, there is multifocal individualization and apoptosis of individual hepatocytes. **(1pt)** Portal areas are expanded by mild fibrosis which incompletely bridges to adjacent portal areas, and are expanding by low to moderate numbers of lymphocytes with fewer macrophages and neutrophils.

Marrow fat: There is diffuse loss of adipocytes within the marrow fat which has degenerated to a light blue granular material (serous atrophy of fat.) **(1pt)** Individualized adipocytes are entrapped by this material, and marrow elements are markedly decreased in this section. **(1pt)**

MICROSCOPIC DIAGNOSIS: 1. Liver: Hepatitis, necrotizing **(1pt)**, focally extensive, severe.
2. Liver: Hepatitis, portal, lymphohistiocytic, subacute, mild to moderate with fibrosis.
3. Bone marrow: Serous atrophy of fat. **(1pt)**

CAUSE: *Fusobacterium necrophorum* **(3pt)**

NAME THE CONDITION: Necrobacillosis **(1pt)**

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

MICROSCOPIC DESCRIPTION: Liver: Diffusely, there is necrosis (**1 pt**) of hepatocytes within all areas of the lobule (**1 pt**) (massive necrosis) (**2 pt**). There is also centrilobular hemorrhage (**1 pt**) as well as hypertrophic Kupffer cells and moderate amounts of cellular debris throughout the entirety of the lobule (**1 pt**). Remaining hepatocytes, primarily in the immediate portal areas (**1 pt**) are individualized and swollen (**1 pt**) with granular eosinophilic cytoplasm containing one to numerous lipid droplets (**1 pt**) (degeneration) There is moderate portal fibrosis and incomplete bridging between portal areas (**1 pt**). Within portal areas, there is moderate biliary hyperplasia (**1 pt**) and bile ducts are lined by markedly hypertrophic epithelium (**1 pt**). There are moderate numbers of lymphocytes and plasma cells within portal areas as well. (**1 pt**)

MORPHOLOGIC DIAGNOSIS: Liver: Necrosis (**1 pt**), massive (**1 pt**), diffuse, with mild portal fibrosis, (**1 pt**) biliary hyperplasia and biliary epithelial hypertrophy.

CAUSE: Sawfly larvae toxicosis (other acceptable possibilities – Microcystin toxicosis, *Amanita*, cocklebur, cycad, or iron toxicosis (**3 pt**))

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

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Case 4 – Tissue from a dog.

MICROSCOPIC DESCRIPTION: Rectum, anus, and perianal tissue: **(1pt.)** Expanding in a linear fashion, the rectal submucosa and extending deep into the dermis of the perianal tissue (as well as to the ulcerated perianal epidermis **(1pt.)** and effacing normal tissue architecture, there is diffuse granulomatous **(1pt.)** inflammation composed of intermingled innumerable epithelioid macrophages **(1pt.)**, multinucleated giant cell macrophages **(1pt.)**, lymphocytes **(1pt.)**, plasma cells **(1pt.)**, neutrophils and rare eosinophils separated by thin randomly oriented bands of fibrous connective tissue and fibroblasts. There are variably-sized areas of lytic necrosis **(1pt.)** containing large numbers of viable and degenerate neutrophils **(1pt.)** admixed with cellular debris scattered randomly throughout the section. Scattered throughout the section and present in negative relief are numerous cross sections of fungal hyphae **(1pt.)** ranging up to 8µm **(1pt.)** in diameter with non-parallel walls **(1pt.)**, variably non-dichotomous branching, and no visible septation **(1pt.)**. There is mild edema of the rectal wall, and the inflammatory infiltrate extends into perianal glands and adnexa.

MORPHOLOGIC DIAGNOSIS: Rectal, anus, perianal tissue: Proctitis and perianal dermatitis, granulomatous **(2pt.)**, focally extensive, chronic, severe, with numerous intra- and extracellular hyphae **(1pt.)** (fungal OK, or oomycetes).

CAUSE: Lagenidium sp. **(3pt.)** (that's what this one is, but if you said Zygomycetes sp. or Pythium, you are A-OK with me!)

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