

WSC 2012-2013, Conference 25

Case 1. Tissue from a horse.

MICROSCOPIC DESCRIPTION: Pharynx, larynx, nasal tissue (all OK) **(1 pt)**: There is multifocal partial thickness necrosis **(1 pt)** of the glandular **(1 pt)** mucosa which extends into the submucosal tissue and is well-demarcated at its deep border by a sharp line of delineation between necrotic and viable tissue **(1 pt)** (which is most visible in serous glands and ducts). Affected tissue is partially sloughed **(1 pt)** and has lost differential staining. The necrotic tissue is infiltrated by moderate numbers of largely degenerate neutrophils **(1 pt)**, which are admixed with moderate amounts of cellular debris **(1 pt)**, fibrin **(1 pt)** and hemorrhage; there are scattered bacterial colonies **(1 pt)** within the debris as well. Superficially within the necrotic tissue, there are extensive aggregates up to 200um of a dark granular black material **(2 pt)** (carbon particles) **(1 pt)**. This submucosal tissue is moderately congested and markedly edematous **(1 pt)**, infiltrated by moderate numbers of neutrophils, and numerous mast cells are visible. Ducts of mucosal glands are multifocally dilated and contain low to moderate numbers of degenerate neutrophils and necrotic epithelium **(1 pt)**.

MORPHOLOGIC DIAGNOSIS: Nasal, pharyngeal, laryngeal tissue: Necrosis, multifocal to coalescing, with marked edema and intralesional carbon particles. **(3 pt)**

CAUSE: Thermal injury and smoke inhalation **(3 pt)**

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

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Case 2. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Colon: In a regionally extensive segment of the section, colonic glands are separated and surrounded (**1 pt**) by a mixture of large numbers of polygonal macrophages (**2 pt**) with granular eosinophilic (**1 pt**) cytoplasm which range up to 20um (**1 pt**) in diameter. Macrophage cytoplasm occasionally contains round clear to eosinophilic vacuoles. Macrophages are admixed with numerous lymphocytes, plasma cells, and fewer neutrophils, and small amounts of cellular debris. A similar infiltrate with a preponderance of macrophages expands the submucosa (**1 pt**) as well, separating and surrounding, and partially replacing pre-existing lymphoid follicles. Colonic glands are elongated, mildly tortuous, and contain numerous mitotic figures (**1 pt**) (hyperplasia) (**1 pt**), and there is a mild decrease in goblet cells. Rarely, glands are dilated and contain moderate amounts of eosinophilic protein and low numbers of sloughed enterocytes and cellular debris (crypt abscesses) (**1 pt**). There are multifocal superficial erosions (**1 pt**) of the colonic epithelium with a coagulum of necrotic epithelium, cell debris, low numbers of infiltrating neutrophils (**1 pt**) in the immediate subjacent mucosa and bacteria adherent to the denuded epithelium. There are moderate numbers of spirochetes within dilated glands. Along the serosa, lymphatics are markedly dilated.

MORPHOLOGIC DIAGNOSIS: Colon: Colitis, histiocytic (granulomatous OK), diffuse, moderate, with glandular hyperplasia. (**3 pt**)

NAME THE CONDITION: Histiocytic colitis (**2 pt**)

CAUSE: *E. coli* (**2 pt**)

NAME AN APPROPRIATE SPECIAL STAIN: Periodic acid-Schiff (**1 pt**)

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

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Case 3. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Heart: Multifocally, scattered throughout the myocardium, individual cardiomyocytes (or small groups of contiguous cardiomyocytes), contain single, rarely multiple discrete clear vacuoles (**4 pt**). Cells containing vacuoles often have hyalinized, hypereosinophilic cytoplasm (**1 pt**) with blurring or loss of cross-striations (**1 pt**), and the nuclei is peripheralized (**1 pt**). There is mild edema (**1 pt**) between myofibers. Multifocally, myofibers are shrunken (**1 pt**), atrophic (**1 pt**), pale, and there is increased amounts of fibrous connective tissue (**2 pt**) with low numbers of lymphocytes and plasma cells within the interstitium.

MORPHOLOGIC DIAGNOSIS: Heart, cardiomyocytes: Degeneration and loss, multifocal, mild with intracytoplasmic vacuolation and myocardial fibrosis. (**4 pt**)

CAUSE: Adriamycin toxicosis (**3pt**).

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

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Case 4. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Liver: Diffusely, there is marked dissolution of hepatic plates (**2 pt**); hepatocytes are individualized and rounded up (**1 pt**). Multifocally, low numbers of individualized, with brightly eosinophilic hyalinized cytoplasm (**1 pt**) and occasional cytosegresomes (degeneration) (**1 pt**) and occasionally have pyknotic or karyorrhectic nuclei (necrosis) (**1 pt**). Multifocally and randomly scattered through the section are low numbers of necrotic foci (**1 pt**) in which contiguous hepatocytes are fragmented or lost, and these areas are infiltrated with low numbers of neutrophils (**1 pt**) admixed with cellular debris. Diffusely, bile ductules and larger bile ducts are markedly distended with a blue fibrillar material (mucin) (**1 pt**), and rarely, scattered bile ducts contain low to moderate numbers of viable neutrophils (**2 pt**). Biliary epithelium is mildly hypertrophic with vesicular nuclei (**1 pt**) and are surrounding by low to moderate numbers of lymphocytes and plasma cells. The hepatic capsule is markedly undulant (**1 pt**) as a result hepatocellular disorganization.

MORPHOLOGIC DIAGNOSIS: Liver: Hepatitis, necrotizing, diffuse, moderate, with marked disorganization of hepatic plates and moderate suppurative cholangitis. (**4 pts**)

CAUSE: *Leptospira interrogans* (**3 pt**)

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