

WSC 2012-2013, Conference 18

Case 1. Tissue from a goat.

MICROSCOPIC DESCRIPTION: Liver: Diffusely, centrilobular hepatocytes are rounded up, individualized **(1 pt)**, with numerous poorly demarcated clear vacuoles, granular eosinophilic cytoplasm, and pyknotic to karyorrhectic nuclei (necrosis) **(2 pt)**. There is diffuse centrilobular hemorrhage **(1 pt)** with stromal collapse **(1 pt)**, as well as mild undulation of the hepatic capsule **(1 pt)**. Within the midzonal areas of the lobule, hepatocytes are swollen **(1 pt)** with granular cytoplasm, numerous poorly demarcated clear vacuoles **(1 pt)**, and occasional cytosegresomes **(1 pt)** (degeneration) **(1 pt)**, and rarely, apoptotic hepatocytes **(1 pt)** are present within this region. Epithelial cells lining bile ducts are mildly hyperplastic, and large bile ducts are often surrounded by several layers of fibrous connective tissue **(1 pt)**. There is mild oval cell hyperplasia as well as ductular reaction within portal triads **(1 pt)**.

MORPHOLOGIC DIAGNOSIS: Liver, centrilobular hepatocytes: Necrosis, diffuse, acute, with marked hemorrhage. **(3 pt)**

CAUSE: Poison peach (cocklebur, gossypol OK) **(2 pt)**

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

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Case 2. Tissue from a rat.

MICROSCOPIC DESCRIPTION: Kidney: Diffusely, proximal convoluted tubular epithelium **(1 pt)** is brightly eosinophilic, granular, and often disassociated, with pyknotic to karyorrhectic nuclei **(2 pt for description)** (necrosis) **(1 pt)**, and individual cells are occasionally sloughed into the tubular lumen **(1 pt)**. In lesser affected proximal tubules, epithelial cells are swollen **(1 pt)** with numerous clear vacuoles **(1 pt)** (degeneration) **(1 pt)**. Rarely, epithelial cells lining proximal tubules are swollen with basophilic cytoplasm and prominent vesicular nuclei with rare mitotic figures **(2 pt for description)** (regeneration) **(1 pt)**. Epithelium lining collecting ducts is flattened with brightly eosinophilic cytoplasm, and collecting ducts are filled with . brightly eosinophilic protein casts **(1 pt)**. Low to moderate numbers of lymphocytes separate.d necrotic tubules within the cortex **(1 pt)**. There is mild pelvic dilation.

MORPHOLOGIC DIAGNOSIS: Kidney, proximal convoluted tubules: Degeneration, necrosis, and regeneration, with abundant protein casts. **(3 pt)**

CAUSE: Gentamicin toxicosis (acetaminophen) **(3 pt)**

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

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Case 3. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Kidney: Diffusely throughout the cortex and to a lesser extent within the medulla, tubules exhibit a range of degenerative and necrotic changes **(1 pt)**. Many tubules are ectatic **(1 pt)**, expanded up to 4 times normal, and lined by flattened epithelium. Other tubules are lined by tall swollen **(1 pt)** pink cytoplasm with numerous discrete, variably sized vacuoles **(1 pt)** (degeneration) **(1 pt)** and occasional cytoplasmic aggregates of a brown pigment **(1 pt)** (lipofuscin) **(1 pt)**. Occasionally within these tubules, epithelial cells are fragmented and hypereosinophilic with pyknotic nuclei **(1 pt for description)**, which are rarely sloughed into the lumen (necrosis) **(1 pt)**. Numerous tubules contain flocculent pink to homogenous red protein **(1 pt)**, sloughed necrotic epithelial cells and abundant crystalline mineral **(1 pt)**, which often covers necrotic remaining epithelial cells. Multifocally, tubules are often expanded by and/or contain abundant, translucent, pale yellowish, anisotropic crystals arranged in sheaves, prisms, and rosettes **(2 pt for description)** (calcium oxalates) **(1 pt)**.

MORPHOLOGIC DIAGNOSIS: Kidney, proximal convoluted tubules: Degeneration and necrosis, diffuse, moderate, with numerous intratubular oxalate crystals. **(3 pt)**

CAUSE: Ethylene glycol toxicity **(2 pt)**

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

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Case 4. Tissue from a rat.

MICROSCOPIC DESCRIPTION: Mixed salivary gland **(1 pt)** (submandibular) Effacing **(1 pt)** part of the salivary gland and adjacent skeletal muscle and adipose tissue, there is an infiltrative, poorly demarcated, densely cellular, unencapsulated, nodular neoplasm composed of two distinct populations of cells **(2 pt)**. The first population is arranged in streams and bundles **(1 pt)** on a moderate fibrous stroma **(1 pt)**. Neoplastic cells are spindle **(1 pt)**, with indistinct cell borders and a moderate amount of a finely fibrillar eosinophilic cytoplasm. Nuclei **(1 pt)** are irregularly round with finely stippled chromatin and one to two small basophilic nucleoli. Mitoses average a per 400X field **(1 pt)**. The second population are less prevalent, and consists of epithelial cells in small nests **(1 pt)** throughout the neoplasm. Neoplastic epithelial cells have moderate amounts of a flocculent basophilic cytoplasm with indistinct cell borders **(1 pt)**. Nuclei are round with vesicular cytoplasm and inapparent nucleoli **(1 pt)**. Mitoses are rare within this population. There are large areas of coagulative necrosis **(1 pt)** within the neoplasm. In areas in which the neoplasm infiltrates skeletal muscles, muscle fibers exhibit one or more of the following changes: changes in size, hypereosinophilia, vacuolation (degeneration) **(1 pt)** and rare contraction bands (necrosis.) **(1 pt)**.

MORPHOLOGIC DIAGNOSIS: Salivary gland: Complex salivary. carcinoma. (Many acceptable answers here – spindle cell carcinoma, pleomorphic carcinoma, carcinosarcoma. This is not a neoplasm that can be diagnosed by histology alone.) **(4 pt)**

O/C: (1pt)