

WSC 2015-2016, Conference 17

Case 1. Tissue from a foal.

MICROSCOPIC DESCRIPTION: Liver: Diffusely, hepatocytes are shrunken **(1 pt.)**, and hepatic cords are mildly discontinuous **(1 pt.)**. Hepatocellular cytoplasm contains numerous coalescing, poorly discrete cytoplasmic vacuoles **(1 pt.)** (glycogenosis) **(1 pt.)** and small clusters of a brown pigment (lipofuscin) **(1 pt.)**. Occasionally, hepatocytes contain more than one enlarged nuclei **(1 pt.)**. There is multifocal necrosis of centrilobular hepatocytes **(1 pt.)**. Bile canaliculi are often dilated **(1 pt.)** and contain brown pigment (cholestasis) **(1 pt.)**. Scattered throughout the section are numerous rounded individualized hepatocytes **(1 pt.)** ranging up to 30um in diameter with up to six nuclei arranged at the periphery **(1 pt.)**. These hepatocytes also contain lipofuscin, and glycogen (which is often located within the ring of nuclei. **(1 pt.)** Hemosiderin-laden Kupffer cells are present within the sinusoids **(1 pt.)**. Portal areas contain low to moderate numbers of neutrophils and lymphocytes **(1 pt.)**. Hepatocytes are overlain by abundant granular to spicular refractile pigment (acid hematin.)

MORPHOLOGIC DIAGNOSIS: Liver: Hepatocellular degeneration and atrophy, diffuse, severe, with hepatocellular glycogenosis, hepatocellular and reticuloendothelial siderosis, and hepatic syncytial formation. **(3 pt.)**

NAME THE CONDITION: Neonatal isoerythrolysis **(2 pt.)**

O/C: (1 pt.)

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Case 2. Tissue from a horse.

(Note: Diffuse autolysis hampers histologic interpretation, although characteristic features of this condition are present.)

MICROSCOPIC DESCRIPTION: Liver: There is diffuse necrosis (**2pt.**) of centrilobular (**1 pt.**) and midzonal (**1 pt.**) hepatocytes, characterized by disassociation of hepatocellular cords (**1 pt.**), marked shrinkage (**1 pt.**) of hepatocytes in these areas of the lobule with expansion of the intervening stroma (**1 pt.**) by edema, loss of nuclei, and moderate amounts of cellular debris (**1 pt.**). Portal areas are closer to each other than normal (stromal collapse). Remaining periportal hepatocytes are moderately swollen (**1 pt.**) by an accumulation of clear lipid (**2 pt.**) vacuoles within hepatocytes, and the intervening cytoplasm is mildly expanded by coalescing poorly defined small vacuoles (glycogen) (**1 pt.**).

MORPHOLOGIC DIAGNOSIS: Liver: Hepatocellular necrosis, centrilobular to midzonal, diffuse, with marked cellular lipodosis. (**3 pt.**)

NAME THE CONDITION: Equine serum hepatitis (Theiler's disease) (**3pt**)

O/C: (1pt)

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Case 3. Tissue from a dog.

MIROSCOPIC DESCRIPTION: Spleen: Diffusely, splenic red pulp is expanded by numerous macrophages **(1pt)** ranging up to 20um in diameter with abundant clear cytoplasm which is totally to partially filled by numerous 2-3um **(1pt)** protozoal amastigotes **(2pt)**. Clusters of amastigote-laden macrophages are also present within the capsule **(1pt)**, splenic trabeculae, and both perivascularly and intravascularly **(1pt)**. Amastigotes are round with a central basophilic nucleus **(1pt)** and an occasionally visible bar-shaped kinetoplast **(1pt)** oriented perpendicularly to the nucleus. Approximately 10% of macrophages, even those laden with amastigotes, contain phagocytized erythrocytes **(1pt)** or variably sized hemosiderin granules **(1pt)**. There are also large numbers of plasma cells **(1pt)** and lymphocytes within the red pulp. There is multifocal EMH **(1pt)** within the splenic red pulp, denoted by the presence of clusters of megakaryocytes. The splenic capsule is multifocally expanded by fibrous connective tissue, and small blood vessels which are surrounded by moderate numbers of lymphocytes and few macrophages, occasionally laden with amastigotes.

Bone marrow: The bone marrow is infiltrated and largely effaced by large numbers of amastigote-laden macrophages as previously described. There is markedly hyperplasia of the remaining marrow with a decreased number of myeloid precursors. **(1pt)**

MORPHOLOGIC DIAGNOSIS: 1. Spleen, red pulp: Splenitis, histiocytic and plasmacytic, diffuse, severe, with numerous intracellular amastigotes. **(1pt)**

2. Spleen, red pulp: Reticuloendothelial hyperplasia, diffuse, moderate, with erythrophagocytosis and siderosis. **(1pt)**

3. Spleen, red pulp: Extramedullary hematopoiesis, diffuse, mild. **(1pt)**

4. Bone marrow: Myelitis, histiocytic and plasmacytic, diffuse, severe, with numerous intrachistiocytic amastigotes. **(1pt)**

CAUSE: *Leishmania sp.* **(2pt)**

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

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CASE 4. Tissue from a dog.

(This was a digital cytology case scanned at 20X – best to just drive on.)

MICROSCOPIC DESCRIPTION: Fine needle aspirate of an oral mass of a dog: This good quality, densely cellular fine needle aspirate **(1pt)** is composed of clusters of polygonal cells **(1pt)** on a granular blue proteinaceous background **(1pt)** with scattered low numbers of erythrocytes **(1pt)**. Cells are composed of a largely monomorphic **(1pt)** population of cells ranging up to 40um **(1pt)** (based on size of surrounding erythrocytes) with distinct cell borders **(1pt)** and large amounts of amphophilic **(1pt)** cytoplasm with numerous clear vacuoles **(1pt)** and 1-2 variably sized nuclei with finely stippled **(1pt)** chromatin and 1-2 occasionally prominent nucleoli **(1pt)**. There is mild anisokaryosis **(1pt)** and nuclear molding. There are rare mitotic figures **(1pt)**. Rare neoplastic cells contain dark blue-black pigment granules **(2pt)**.

MORPHOLOGIC DIAGNOSIS: Fine needle aspirate, oral mass: Malignant neoplasm. **(4pt.)** (Honestly, that's really the best you can do – give yourself full credit for balloon cell melanoma, granular cell tumor, oncocytoma and possibly even rhabdomyosarcoma.)

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