WSC 2018-2019 Conference 24

Case 1. Tissue from a foal.

(This is not a descriptive slide – not enough points to award.)

MICROSCOPIC DIAGNOSIS: Colon: Twos sections of colon are present for examination. The lumen is diffusely distended and filled with meconium. The wall of the colon diffusely and markedly thinned. The muscular tunics, in particular the outer longitudinal layer, is markedly diminished in . There are no visible neurons within the ganglia of the myenteric (Auerbach's) plexus and nerve fibers within this plexus are diminished both in numbers and in size. There are

MORPHOLOGIC DIAGNOSIS: Colon: Aganglionosis, diffuse, severe with diffuse hypoplasia of muscular tunics.

NAME THE CONDITION: Lethal white foal syndrome

CAUSE: Defect in endothelin-B receptor

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Case 2. Tissue from a foal.

MICROSCOPIC DESCRIPTION: Skeletal muscle and adipose tissue: Approximately 40% of myocytes exhibit one or more of the following changes: swelling, hyalinization **(1pt.)**, loss of cross striations **(1pt.)**, sarcoplasmic vacuolation (degenerative changes) **(1pt.)**, marked shrinkage **(1pt.)**, formation of contraction bands **(1pt.)** fragmentation, **(1pt.)** and loss of nuclei (necrosis) **(1pt.)**, and rare shrunken and hypereosinophilic fibers (atrophy) **(1pt.)**. Necrotic fibers often contain abundant granular mineral (dystrophic calcification) **(1pt.)**, and fragmented myofibers are multifocally infiltrated by macrophages **(1pt.)**, which also expands the surrounding endomysium. Within the adjacent fat, there are extensive areas of coagulative necrosis **(1pt.)**, in which there is loss of differential staining of adipocytes, and the interstices between cells are infiltrated by moderate numbers of viable and degenerate neutrophils **(1pt.)** admixed with abundant cellular debris. Necrotic adipocytes multifocally contain either pink coagulated lipoproteins **(1pt.)** or infiltrating neutrophils. Fibrous connective tissue separating lobules of adipocytes is expanded by edema and infiltrating neutrophils, fewer macrophages, and cellular debris. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: 1. Skeletal muscle: Degeneration and necrosis **(1pt.)**, polyphasic, **(1pt.)** multifocal to coalescing, with mineralization.
2. Fat: Steatitis, necrotizing, multifocal to coalescing, marked. **(1pt.)**

CAUSE: Vitamin E/Se imbalance **(2pt.)**

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

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Case 3. Tissue from a foal.

MICROSCOPIC DESCRIPTION: Liver: Multifocally and randomly **(1 pt)** scattered throughout the liver, there are multifocal to coalescing foci of lytic necrosis **(2 pt)** of hepatocytes, which encompass approximately 50% of the section. Within these areas, hepatocytes are lost and replaced with abundant eosinophilic cellular debris **(1 pt)**, hemorrhage, and fibrin. Surrounding these areas, hepatocytes are hypereosinophilic, and shrunken **(1 pt)** (degenerate) **(1 pt)**, often with pyknotic or karyorrhectic nuclei (necrosis) **(1 pt)**. These remaining hepatocytes are individualized and separated by large numbers of viable and degenerate neutrophils **(1 pt)** and cellular debris, **(1 pt)** as well as hypertrophic Kupffer cells, hypertrophied endothelial cells, fibrin, hemorrhage, and edema. At the edges of the necrotic areas, occasional hepatocytes contain small numbers of faint elongate 1-3um **(1 pt)** filamentous bacilli **(1 pt)** within their cytoplasm **(1 pt)**. Portal areas are mildly expanded with edema and contain moderate numbers of lymphocytes, plasma cells, neutrophils, and macrophages.

MORPHOLOGIC DIAGNOSIS: Liver: Hepatitis, necrotizing, multifocal to coalescing, severe, with intracytoplasmic filamentous bacilli. **(3 pt)**

CAUSE: *Clostridium piliforme* **(4 pt)**

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

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Case 4. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Heart. Centrally within the section, there is a 0.75cm diameter nodular, unencapsulated, infiltrative, and moderately cellular neoplasm. **(1pt)** The neoplasm is composed of short streams and bundles of spindle cells on a minimal amphophilic matrix. **(1pt)** Neoplastic cells are spindled with distinct cell borders and a moderate amount of brightly eosinophilic cytoplasm. **(1pt)** Nuclei are irregularly oval to elongate with finely stippled chromatin and 1-2 small blue nucleoli. **(1pt)** Mitoses average five per 2.37mm^2. **(1pt)** There are random areas of necrosis **(1pt)**scattered throughout the neoplasm containing a blue coagulum of nuclear debris as well as small amounts of hemorrhage and fibrin. At the periphery of the neoplasm, neoplastic cells extending into the adjacent skeletal muscle, rhabdomyocytes are vacuolated and hyalinized (degenerate), shrunken (atrophic) and have pyknotic or karyorrhectic nuclei (necrosis). **(1pt)**

Lung: Within the adjacent section of markedly congested lung, there is a 0.8cm diameter metastatic focus of the neoplasm in which neoplastic cells have a different phenotypic apprearance. **(1pt)** Within this tissue, the neoplasm is well demarcated, moderately cellular, infiltrative and unencapsulated. Neoplastic cells are polygonal**(1pt)** and arranged in nests and packets **(1pt)** on a fine fibrovascular stroma. Neoplastic cells have indistinct cell borders with a a small amount of basophilic cytoplasm. **(1pt)** Nuclei are irregularly round, often indented, and hyperchromatic. **(1pt)** Mitoses average 20 per 2.37mm^2 **(1pt)** There is a large area of necrosis centrally with hemorrhage and infiltration of small numbers of neutrophils. Adjacent alveoli contain moderate amounts of edema fluid.

Fibrovascular tissue with multiple tumor masses: These tumor masses contain both populations of cells as described above in approximately equal proportions. **(1pt)** The adjacent adipose tissue is partially effaced by an infiltrate of the neoplastic cells forming nests and packets. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Fibrovascular tissue, heart, lung: Rhabdomyosarcoma **(3pt)**, alveolar type. **(1pt)**

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