

WSC 2020-2021

Conference 5, Case 1.

Tissue from a raccoon.

**MICROSCOPIC DESCRIPTION:** Multiple sections of jejunum. There is mild autolysis in all sections evidenced by sloughing of epithelium, artifactual clefting of submucosal collagen, and poor staining of erythrocytes in all sections. There is diffuse shortening and blunting of villi **(2pt)** to approximately a 2:1 crypt to villus ratio **(1pt)**. Villar epithelium **(1pt)** are diffusely lined by 3-6um **(1pt)** spherical **(1pt)** apicomplexans **(2pt)** which are decrease in numbers deeper in the mucosa **(1pt)**, and are rare within the crypts **(1pt)**. There are increased numbers of eosinophils within the lamina propria, which occasionally form aggregates. **(2pt)** Occasional crypts are dilated, lined by attenuated regenerating epithelium and contain necrotic enterocytes **(1pt)** (crypt abscesses). **(1pt)**

**MORPHOLOGIC DIAGNOSIS:** 1. Intestine: Enteritis, atrophic **(1pt)**, with marked villar blunting, **(1pt)** mild eosinophilic enteritis **(1pt)**, and numerous epithelial-associated apicomplexan schizonts and gamonts **(1pt)**.

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

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

WSC 2020-2021  
Conference 5, Case 2.

Tissue from a pig.

**MICROSCOPIC DESCRIPTION:** Large intestine, favor colon (this is tricky but there is fat in the submucosa, and you usually see that in the cecum and colon): There is diffuse severe thickening of the mucosa in an accentuated rugal pattern **(1pt)**. There is a diffuse and severe loss of mucosal goblet cells **(1pt)** which can still be seen in the rare remaining normal glands. The majority of the glands are crowded out by a proliferation of hyperplastic pseudostratified columnar epithelial cells **(1pt)** with granular eosinophilic cytoplasm, vesicular nuclei prominent nucleoli, and several mitotic figures **(1pt)** at all levels of the gland. Hyperplastic crypts herniate into underlying Peyers patches. **(1pt)** Occasionally, glands are dilated and filled with degenerate epithelial cells admixed with cellular debris **(1pt)** (crypt abscesses) **(1pt)**. Multifocally, the lamina propria is mildly expanded by moderately increased numbers of lymphocytes, plasma cells, few neutrophils and macrophages, and rare eosinophils. **(1pt)** There are multifocal areas of mucosal ulceration **(1pt)** which is covered by a variably thick necrotic coagulum composed of necrotic epithelial cells, degenerate neutrophils, cellular debris, fibrin, and hemorrhage, as well as numerous entrapped 1-2um bacilli. **(1pt)** Low to moderate numbers of viable neutrophils infiltrate the underlying and adjacent lamina propria. There are rare scattered ciliates **(1pt)** measuring 60-75um with a hyaline eosinophilic wall, granular eosinophilic cytoplasm and a large crescentic basophilic nucleus, infiltrating areas of ulceration as well as within the intestinal lumen and lumina of intact glands. **(1pt)** The submucosa is multifocally and variably expanded by low to moderate numbers of lymphocytes, plasma cells, and macrophages. **(1pt)**

**MICROSCOPIC DIAGNOSIS:** 1. Cecum (colon OK): Typhlitis, proliferative **(1pt)**, diffuse, severe, with multifocal ulceration **(1pt)**, crypt herniation **(1pt)**, and crypt abscessation.

2. Cecum (colon OK), mucosa: Ciliates, few, etiology consistent with *Balantidium coli*. **(1pt)**

**CAUSE:** *Lawsonia intracellularis* **(2pt.)**

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

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Conference 5, Case 3. Tissue from a rat

**MICROSCOPIC DESCRIPTION:** Stomach and mesentery: Transmurally **(1pt)** expanding and largely effacing the gastric wall **(1pt)** and extending into the adjacent mesentery **(1pt)** is an infiltrative, unencapsulated, poorly demarcated moderately cellular neoplasm. **(2pt)** Neoplastic cells are arranged in short streams and bundles **(1pt)** often in a storiform pattern and separated by a fine fibrous stroma **(1pt)**. Neoplastic cells are spindle and plump with indistinct cell borders and a moderate amount of a finely granular, occasionally vesicular eosinophilic cytoplasm **(1pt)**. Nuclei are oval to elongate with finely stippled chromatin and small eosinophilic nucleolus. **(1pt)** There are regional areas of decreased cellularity **(1pt)** comprising about 30% of the neoplasm; in these areas neoplastic cells have abundant cytoplasm and significant anisokaryosis and nuclear indentation. **(1pt)** Mitoses average 1 per 2.37mm<sup>2</sup> field. **(1pt)** There are numerous areas of cellular dropout **(1pt)** throughout the more densely cellular areas of the neoplasm, with palisading of neoplastic cells around the edge and few degenerating/necrotic neoplastic cells floating amidst fibrillar basophilic mucinous protein within the areas of cellular loss. . There is scattered single cell necrosis. Remnant smooth muscle is mildly atrophic at the advancing edge of the neoplasm, and there is mild multifocal mesothelial hyperplasia at the serosal surface.

**MORPHOLOGIC DIAGNOSIS:** Stomach, mesentery: Gastrointestinal stromal tumor, malignant. **(4pt)**

**NAME A DIAGNOSTIC IMMUNOSTAIN:** c-kit **(2pt)**

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

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Conference 5, Case 4. Tissue from a Muscovy duck (*Carina moschata*)

**MICROSCOPIC DESCRIPTION:** Esophagus **(1pt)**: There is diffuse necrosis and luminal sloughing of the epithelium lining esophageal glands **(1pt)**, where they are admixed with karyorrhectic basophilic and eosinophilic cytoplasmic debris. Submucosal lymphoid tissue, often in aggregates adjacent to glands, is decreased in amount and there are numerous lytic or karyorrhectic cells within these aggregates. **(1pt)** Occasionally the mucosal epithelium overlying necrotic glands exhibits full thickness necrosis **(1pt)**, with cells at the edges being swollen with abundant granular clear cytoplasm **(1pt)** (hydropic degeneration) **(1pt)** and cells occasionally have a single 3-4um intranuclear viral inclusion **(2pt)**. Rare inclusions are also present within sloughed glandular epithelial cells within necrotic glands. **(1pt)**

Liver: Diffusely, hepatocellular architecture is somewhat obscured by the diffuse swelling of hepatocytes due to a cytoplasmic accumulation of cytoplasmic vacuoles **(1pt)** of varying discreteness (glycogen, lipid) as well as an abundance of intracellular lipofuscin. (There is also abundant hematin within the sections of liver.) There are scattered 1mm foci of coagulative necrosis scattered throughout the section. **(1pt)**

Proventriculus: Submucosal lymphoid aggregates are decreased in size and contain lytic cells as previously described in the esophagus. **(1pt)** More superficial proventricular glands often contain small numbers of basophilic 4x2 bacilli.

**MORPHOLOGIC DIAGNOSIS:** 1. Esophagus: Esophagitis, necrotizing **(1pt)**, multifocal, moderate with glandular epithelial necrosis, lymphocytolysis **(1pt)**, and occasional intranuclear viral inclusions. **(1pt)**.

2. Liver, hepatocytes: Vacuolar degeneration, diffuse, moderate.

3. Liver: Hepatitis, necrotizing, multifocal, mild to moderate with intranuclear viral inclusions. **(1pt)**

4. Proventriculus: Lymphocytolysis, diffuse, mild to moderate.

**CAUSE:** Anatid herpesvirus 1 **(3pt)**

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