

WSC 2009-2010, Conference 6, Case 1.

Tissue from a dog.

**MORPHOLOGIC DESCRIPTION:** Jejunum: There is diffuse thickening of the intestinal mucosa (**1 pt.**). Villi are blunted and fused (**1 pt.**). The crypts are markedly hyperplastic and mitotic figures are present in the most superficial crypts (**1 pt.**). There is widespread necrosis of individual crypt epithelium (**1 pt.**), and several crypts are dilated, lined by attenuated epithelium, and their lumina are filled by necrotic epithelial cells (**1 pt.**) (crypt abscesses). The lamina propria is infiltrated by moderate numbers of plasma cells (**1 pt.**) and lymphocytes, and lesser numbers of macrophages. Macrophages contain moderate numbers of basophilic 2-3um coccoid bacilli (**1 pt.**) (rickettsia) (**1 pt.**) which are occasionally surrounded by a clear halo, or contained in clusters within a large cytoplasmic vacuole. Adjacent to villi are multiple cross-sections of a trematode (**1 pt.**) parasite with a spiny cuticle, no pseudocoelom, an anterior sucker, abundant somatic nuclei, and cross sections of ceca and gonads with spermatocytes and eggs (**2 pt. – entire description**). There is multifocal areas of hemorrhage in the submucosa and serosa, and adjacent mesentery. Within these areas, vessel walls are expanded by abundant eosinophilic material (fibrin). (**1 pt.**)

Lymph node (not graded for points): There is diffuse loss of follicles, and the paracortex, subcapsular and medullary sinuses are expanded by an infiltrate of large numbers of macrophages with abundant eosinophilic foamy cytoplasm which often contain moderate numbers of basophilic 2-3um round coccoid bacilli (rickettsiae) surrounded by a clear halo. In some macrophages, the bacilli are contained within a central vacuole. There are mild reactive changes within the remaining paracortex, increased numbers of plasma cells, and multifocal areas of necrosis. There is mild multifocal sinus hemorrhage, fibrin deposition, and erythrophagocytosis.

**MORPHOLOGIC DIAGNOSIS:** Small intestine: Enteritis, necrotizing, lymphoplasmacytic and histiocytic, diffuse, moderate, with villar blunting, crypt hyperplasia, hermaphroditis trematode adults, and numerous intrahistiocytic rickettsiae. (**3 pt.**)

Lymph node: Lymphadenitis, necrotizing and histiocytic, diffuse, moderate, with plasmacytosis and intrahistiocytic rickettsiae.

Cause: *Neorickettsia helminthoeca*, *Nanophyetus salmincola* (**4 pt. – two per agent**)

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

**MICROSCOPIC DESCRIPTION:** Small intestine: Transmurally effacing the wall of the small intestine is an unencapsulated, infiltrative, poorly demarcated, moderately cellular neoplasm **(1 pt.)** composed of sheets of round cells **(1 pt.)**. Neoplastic cells are irregularly round with distinct cell borders and a moderate amount of basophilic, finely granular cytoplasm **(1 pt.)**. Nuclei are irregularly round with 1-2 large basophilic nucleoli **(1 pt.)**. Mitotic rate averages 1-2 per high power field **(1 pt.)**. Neoplastic cells show mild anisocytosis and anisokaryosis **(1 pt.)**. There are large numbers of eosinophils scattered through the neoplasm **(1 pt.)**. In large areas of this round cell neoplasm, there is a dense fibrous stroma which surrounds and separates nests and individual neoplastic cells **(1 pt.)**; moderate numbers of plump fibroblasts **(1 pt.)** are also scattered among the neoplastic cells. There are multifocal areas of coagulative necrosis **(1 pt.)** scattered throughout the neoplasm, including a focally extensive one extending from the ulcerated mucosa into the submucosa **(1 pt.)**. The ulcerated mucosa is replaced by a coagulum of degenerate neutrophils, food particles, necrotic debris, fibrin, hemorrhage, edema, and numerous mixed colonies of bacilli. **(1 pt.)** Immediately beneath this coagulum is abundant granulation tissue **(1 pt.)** with streams of plump fibroblasts and moderate numbers of neutrophils. The serosa is diffusely thickened up to three times normal by large numbers of eosinophils, macrophages, multinucleated foreign body macrophages in small aggregates, lesser neutrophils, moderate amounts of edema, small aggregates of lymphocytes in perivascular location, and there is moderate mesenteric fat atrophy **(2 pt.)**.

**MORPHOLOGIC DIAGNOSIS:** Small intestine: Mast cell tumor, with fibrosis. **(4 pt.)**

O/C – **(1 pt.)**

**Note:** There is mild variation between slides in regards to the amount of necrosis in the section.

WSC 2009-2010, Conference 6, Case 3.

Tissue from a cat.

**MORPHOLOGIC DESCRIPTION:** Eye: Arising from the anterior uvea, expanding the ciliary body, filtration angle, anterior surface of the iris, and adhering to the surface of the lens capsule (**2 pt. for listing of affected structures**), there is a moderately cellular, well demarcated, infiltrative, unencapsulated neoplasm (**1 pt.**) composed of nests, packets (**1 pt.**) and numerous pseudorosettes (**1 pt.**) of cuboidal epithelial cells (**1 pt.**) which often palisade along a thin to moderate fibrous stroma(**1 pt.**). Neoplastic cells have distinct cell borders with a moderate amount of a finely vacuolated eosinophilic cytoplasm(**1 pt.**). Nuclei are oval to elongate with 1-3 small blue nucleoli(**1 pt.**). The mitotic rate averages one per HPF (**1 pt.**). There are multifocal areas of necrosis scattered throughout the neoplasm (**1 pt.**). There is a focally extensive areas of retinal detachment (**1 pt.**) with serous fluid between the retina and the mildly hypertrophic pigmented retinal epithelium(**1 pt.**), and mild cystic change multifocally within the ganglion cell layer. There are multiple cysts within the pars plana of the ciliary body(**1 pt.**). There is a fibrous attachment of the neoplasm to the posterior lens capsule. Remaining lens fibers adherent to the capsular remnant exhibit Morgagnian degeneration(**1 pt.**). There is a small amount of hemorrhage and fibrin within the anterior chamber. There is mild hypertrophy of the corneal endothelium and mild peripheral neovascularization in the area of the neoplasm. (**1 pt.**)

**MICROSCOPIC DIAGNOSIS:** Eye: Ciliary body adenoma, with lenticular cataract formation and partial retinal detachment. (**4pt.**)

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

WSC 2009-2010, Conference 6, Case 4.

Tissue from a horse.

**MORPHOLOGIC DESCRIPTION:** Eye: There are changes in all segments of the globe. The cornea is minimally thickened with numerous clear spaces within the corneal stroma (edema) **(1 pt.)**. There is hypertrophy of the corneal endothelium and the anterior chamber is full of proteinaceous fluid **(1 pt.)**. The iris and ciliary body are covered by a thick fibrovascular membrane **(1 pt.)** which occludes the drainage angle and is attached to the anterior lens capsule (posterior synechia) **(1 pt.)**. The membrane is composed of large vascular channels surrounded by loosely arranged fibrous connective tissue, and contains large numbers of lymphocytes and plasma cells **(2 pt.)** with lesser numbers of macrophages. There is a poorly organized lymphoid follicle in the area of the drainage angle, and abundant hyaline, waxy material (amyloid) within the ciliary body. **(1 pt.)** There is fibrosis (fibrous metaplasia) within the lens capsule and fibers often assume a globular shape (Morgagnian degeneration) **(2 pt.)**. There is multifocal and extensive retinal detachment **(1 pt.)** and a serofibrinous exudate is present between the retina and the mildly hypertrophic pigmented retinal epithelium **(1 pt.)**. There is diffuse atrophy of the ganglion and inner nuclear layer of the retina **(1 pt.)**, and the choroid within the posterior chamber is diffusely thickened and congested.

**MORPHOLOGIC DIAGNOSIS:** Eye: Endophthalmitis, chronic and lymphoplasmacytic, diffuse moderate, with amyloid deposition, lenticular cataract, retinal atrophy and detachment, and corneal edema. **(4pt.)**

Name the condition: Equine recurrent uveitis **(2 pt.)**

Pathogenesis: Animal exposed to leptospiral antigens which mimic corneal and lenticular antigens => autoimmunity and type IV hypersensitivity. **(1 pt.)**

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