

WSC 2017-2017, Conference 7

Case 1. Tissue from a rat.

**MICROSCOPIC DESCRIPTION:** Harderian gland **(1pt.)**: There is diffuse severe atrophy **(2pt.)** of glandular epithelium (note that glands are tubuloacinar, so that is why you have elongated straight areas within the glands – admittedly they look like ducts in many cases.). Acinar epithelium is shrunken **(1pt.)** and disorganized, with infiltration of lymphocytes **(1pt.)**, numerous necrotic **(1pt.)** and apoptotic **(1pt.)** cells, and dilated lumens contain moderate amounts of cellular debris **(1pt.)**. Remaining epithelial cells often exhibit degenerative change characterized by large single to multiple clear vacuoles. **(1pt.)** Nuclei of acinar cells regionally contain variably sized pleomorphic intranuclear inclusions ranging from 2-4 pink inclusions, 4-6um basophilic inclusion, and rarely large clear pleomorphic inclusions which peripheralize and compress the nucleus. **(2pt.)**. Duct lumens are variably dilated and contains small amounts of eosinophilic and basophilic cellular debris as well as yellow pigment (porphyrin pigment) **(1pt.)**. The interstitium is expanded by moderate numbers of macrophages **(1pt.)** neutrophils, fibroblasts, and large amounts of edema. **(1pt.)**

The eye lacks pigment in the iris and choroid, indicating that this is an albino rat.

**MORPHOLOGIC DIAGNOSIS:** Harderian gland: Dacryoadenitis, necrotizing **(1pt.)** and histiocytic **(1pt.)**, diffuse, moderate to severe, with edema and pleomorphic intraepithelial intranuclear viral inclusions. **(1pt.)**

**CAUSE:** Rat polyomavirus **(2pt.)** (Rat cytomegalovirus OK)

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

Case 2. Tissue from a rhesus macaque.

**MICROSCOPIC DESCRIPTION:** Diaphragm **(1pt.)**: Transmurally **(1pt.)** expanding the diaphragm are multiple, unencapsulated, infiltrative nodules of well-differentiated endometrial glands **(2pt.)** surrounded by abundant, densely cellular endometrial stroma **(2pt.)**. The endometrial glands are lined by simple to pseudostratified columnar **(1pt.)**, ciliated **(1pt.)** epithelial cells with a moderate amount of clear to pale eosinophilic cytoplasm and prominent basilar vacuolation. **(1pt.)** Nuclei are anti-basilar and oval with finely stippled chromatin and frequently exhibit nuclear regimentation. **(1pt.)** The endometrial stroma is composed of spindle cells with indistinct cell borders, scant eosinophilic, fibrillar cytoplasm and an oval to elongate nucleus with finely stippled chromatin. **(1pt.)** There is multifocal necrosis of the epithelium lining endometrial glands. Multifocally, endometrial epithelium is columnar and swollen, and piles up (endometrial plaque formation), and occasionally, there is patchy decidulaization of stroma. Glands are often dilated, lined by markedly attenuated endothelium and filled with varying combinations and concentrations of eosinophilic proteinaceous fluid and hemorrhage, and few macrophages and cellular debris. **(1pt.)** Adjacent skeletal muscle fibers are occasionally shrunken, variably sized, and brightly eosinophilic (atrophy) **(1pt.)** and large areas of muscle are replaced by collagen **(1pt.)** throughout which are interspersed large numbers of plump fibroblasts aggregates of hemosiderin-laden macrophages **(1pt.)**, and moderate numbers of macrophages, lymphocytes, and plasma cells. The peritoneum is multifocally expanded by granulation tissue, which contains multifocal hemorrhage and fibrin. **(1pt.)**

**MORPHOLOGIC DIAGNOSIS:** Diaphragm: Endometriosis, multifocal, moderate. **(3pt.)**

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

Case 3. Tissue from a sheep.

**MICROSCOPIC DESCRIPTION:** Placenta with cotyledon **(1pt)**: There is extensive and coalescing necrosis of both cotyledonary and non-cotyledonary epithelium **(1pt)**. Multifocally, trophoblasts are swollen and vacuolated (degeneration), or shrunken and eosinophilic with pyknotic or karyorrhectic nuclei (necrosis) **(1pt)**. Large rafts of necrotic trophoblasts are detached **(1pt)** and form brightly eosinophilic aggregates in which they are admixed with few neutrophils, cellular debris, hemorrhage, fibrin, and rare mineral within the space between villi. **(1pt)** Segmentally, trophoblasts are swollen with numbers grey coccobacilli within their cytoplasm or within vacuoles **(2pt)**; within these areas in the space between villi, there are also large colonies of similar bacilli. **(1pt)** Cotyledonary villi are multifocally expanded by abundant edema, infiltrating neutrophils, and small amounts of fibrin and hemorrhage. **(1pt)** Multifocally throughout the cotyledonary villi, and most prominently at the base, there are large basophilic foci of lytic necrosis **(1pt)** composed of large numbers of degenerate neutrophils and abundant cellular debris. There is diffuse lytic necrosis of the intercotyledonary tissue **(1pt)**, with loss of the trophoblastic lining and a dense infiltrate of degenerate neutrophils admixed with cellular debris. A similar change is present within the lining of the allantois as well. Chorionic vessels, primarily arterioles, especially in the intercotyledonary space are surrounded by moderate to large numbers of degenerating neutrophils and cellular debris **(1pt)**, which occasionally extend into the fragmented and edematous tunica media (vasculitis) **(1pt)**, and the media is occasionally expanded by an accumulation of bright pink proteinaceous material (fibrinoid change) **(1pt)** There is moderate edema, and multifocal hemorrhage and polymerized fibrin within the chorion.

**MORPHOLOGIC DIAGNOSIS:** Placenta with cotyledon: Placentitis, necrosuppurative **(1pt)**, diffuse, severe, with vasculitis **(1pt)** and numerous intra- and extracellular coccobacilli. **(1pt)**

**CAUSE:** *Campylobacter jejuni* of fetus (*Brucella ovis* OK) **(2pt)**

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

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CASE 4. Tissue from a dog

**MICROSCOPIC DESCRIPTION:** Ovary **(1pt)** – (some very small nests of interstitial glands remaining at the periphery): Effacing the ovary, there is an unencapsulated, moderately cellular, poorly demarcated, poorly circumscribed, multilobular neoplasm **(2pt)**. The neoplasm is composed of large numbers of neoplastic germ **(2pt)** cells arranged in sheets **(1pt)** and occasionally divided into nests and packets **(1pt)** by a fine fibrous stroma. Throughout the neoplasm, neoplastic cells often form well-defined tubules **(1pt)** as well, which are filled with sloughed cells, low numbers of neutrophils, and cellular debris. **(1pt)** Neoplastic cells are round with variably distinct cell borders and a moderate amount of finely granular eosinophilic cytoplasm. **(1pt)** Nuclei are irregularly round to oval with finely clumped chromatin and 1-3 eosinophilic nucleoli. **(1pt)** Mitotic figures average 1-2 per 400X field. **(1pt)** Rarely, small groups of neoplastic cells are surrounded by keratin (or at least a bright pink matrix). **(1pt)** There are large numbers of apoptotic cells **(1pt)** scattered throughout the neoplasm as well as moderately-sized areas of lytic necrosis. **(1pt)**

**MORPHOLOGIC DIAGNOSIS:** Ovary – Mixed germ cell tumor. **(4pt)**. (3 pts for dysgerminoma)

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