

WSC 2021-2022 Conference 2, Case 1
Tissue from a goat.

MICROSCOPIC DESCRIPTION: Spinal cord (sections from multiple levels): Primarily affecting the dorsomedial aspect of the lateral funiculi, **(1pt)** and the medial aspects of the ventral funiculi, **(1pt)** there is bilaterally symmetrical, focally extensive vacuolation of the white matter. Numerous myelin sheaths are dilated **(1pt)** up to 40 um in diameter and occasionally contain swollen axons (spheroids) **(1pt)**, eosinophilic debris, or rarely foamy Gitter cells **(1pt)** (Wallerian degeneration) **(1pt)**. Scattered motor neurons in the ventral horn of the gray matter **(1pt)** are swollen up to 70 um in diameter **(1pt.)**, and contain pale eosinophilic, homogenous central cytoplasm with peripheral dispersion of Nissl substance **(1pt)** and eccentrically placed nuclei (central chromatolysis) **(1pt)**. Occasionally, grey matter vessels are cuffed by 1-2 layers of lymphocytes and there are scattered small perivascular hemorrhages within the grey matter.

Cerebellum: Diffusely, there is segmental and marked loss of Purkinje cell neurons **(1pt.)**, and Purkinje cells are often seen within the granular cell layer. Occasional Purkinje cells and their axons are shrunken and hyperchromatic or diffusely mineralized. **(1pt.)** There is a diffuse and marked decrease in neurons within the granular cell layer **(1pt.)** and numerous dilated axons.

MORPHOLOGIC DIAGNOSIS: Spinal cord, white matter, ventral and lateral funiculi: Neuroaxonal degeneration **(1pt)**, bilaterally symmetrical, moderate, with neuronal chromatolysis **(1pt)** .
2. Cerebellum, Purkinje and granular cell neurons: Necrosis and loss, diffuse, marked. **(1pt)**.

CAUSE: Copper deficiency **(2pt)**

NAME THE CONDITION: Enzootic ataxia **(1pt)**

O/C: (1pt.)

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Uterus: Circumferentially and transmurally **(1pt)** infiltrating the uterine wall and mesometrium is an unencapsulated, moderately cellular, poorly demarcated neoplasm. **(1pt)** The neoplasm is composed of polygonal **(1pt)** cells arranged in tubules **(1pt)**, acini, and papillary projections **(1pt)** of neoplastic epithelium (both into the uterine lumen and within large acini) **(1pt)** on a variably dense collagenous matrix. Neoplastic cells are cuboidal to columnar with indistinct cell borders, and moderate amount of granular amphophilic cytoplasm. **(1pt)** Nuclei are round to oval with vesicular chromatin, and 1-3 prominent basophilic nucleoli. **(1pt)** There is marked anisocytosis and anisokaryosis **(1pt)**, and 10 mitoses per 2.37mm field. **(1pt)** Scattered throughout the neoplasm are occasionally cells with darkly basophilic cytoplasm and up to 10 small nuclei, resembling syncytiotrophoblasts. **(1pt)** Approximately 20% of the neoplasm is necrotic **(1pt)**, and extensive aggregates of necrotic neoplastic cells are present both in the uterine lumen as well as lumina of large neoplastic acini. In areas of mural infiltration, leiomyocytes are shrunken (atrophy) and hypereosinophilic (degeneration) and often replaced by mature fibrous connective tissue and fibroblasts (desmoplasia). **(1pt)** In the myometrium, there is extensive mucinous ground substance surrounding nerves and vessels, and neoplastic cells extend along nerve sheaths (perineurial invasion) **(1pt)** Multifocally, there are neoplastic cells within lymphatic vessels within the uterine body and broad ligament. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Uterus: Uterine adenocarcinoma **(4pt)**

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

Tissue from a rat

MICROSCOPIC DESCRIPTION:

Heart: Within the myocardium of both ventricles and to a lesser extent the interventricular septum, **(1pt.)** there are extensive areas of coagulative necrosis. **(1pt.)** Within the myocardium, there are numerous areas in which myocytes myofibers are shrunken, fragmented, brightly eosinophilic, and have pyknotic or more frequently absent nuclei. **(1pt.)** These areas are variably infiltrated by moderate numbers of viable and degenerate neutrophils v, admixed with abundant cellular debris **(1pt.)**, hemorrhage, fibrin, and edema. Within inflamed areas, numerous small vessels contain occlusive and non-occlusive fibrin thrombi. **(1pt.)** Within several necrotic foci, there are large colonies of cocci within the interstitium and within thrombosed vessels. **(1pt.)** At the base of the right ventricle, there is loss of endothelium, and adherence of a large fibrin thrombus; **(1pt.)** aggregated neutrophils around and within the thrombus infiltrate the underlying myocardium. There is a proliferation of endothelial cells and adherent fibrin on a leaflet of the mitral valve.

Testis: There is diffuse **(1pt.)** and total coagulative necrosis of seminiferous tubules **(1pt.)** which retain cytologic architecture but have lost stain affinity. Necrotic tubules are separated, surrounded, and often infiltrated by large numbers of neutrophils **(1pt.)**, and the interstitium is expanded by this infiltrate admixed with abundant cellular debris and edema. Numerous large colonies of cocci**(1pt.)** are scattered throughout the section, most often at the periphery of necrotic seminiferous tubules. At the cranial pole of the kidney, there is necrosis of the wall of the testicular artery **(1pt.)** – endothelium is discontinuous (although the artery is not thrombosed at this location) there is extrusion of bright pink protein into the wall **(1pt.)**, and the tunica media and adventitia are infiltrated by large numbers of necrotic neutrophils (often in dense aggregates) admixed with abundant cellular debris. **(1pt.)**

MORPHOGIC DIAGNOSIS: 1. Heart, myocardium: Myositis, necrotizing **(1pt.)**, multifocal to coalescing, marked, with myocardial vasculitis and thrombosis, mural endocarditis **(1pt.)**, and numerous colonies of cocci. **(1pt.)**

2. Testis: Orchitis, necrotizing, **(1pt.)** diffuse, severe **(1pt.)**, with necrotizing arteritis and numerous colonies of cocci.

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

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Conference 2 Case 4.

Tissue from a rhesus macaque.

MICROSCOPIC DESCRIPTION: Oviduct, ovary, and mesometrium: Infiltrating and expanding the muscular wall **(1pt.)** of the oviduct, as well as infiltrating the mesometrium **(1pt.)**, there are several foci which contain numerous tortuous endometrial glands **(1pt.)** surrounded by abundant, densely cellular endometrial stroma **(1pt.)**. Endometrial glands are lined by variably attenuated simple to pseudostratified columnar, 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.)**. Glands contain small amounts of eosinophilic protein, admixed with low numbers of degenerated epithelial cells and hemorrhage **(1pt.)**. The oviduct architecture is distorted by numerous adhesions **(1pt)** which result in attachment of the ovary to the oviduct. **(1pt)** The ovary contains a single large Graffian follicle, numerous atretic follicle, and a large corpus luteum. **(1pt)**

Fibroadiopose tissue (myometrium and section of mesentery) **(1pt.)**: Endometrial glands and associated stroma as previously described of variable maturity infiltrate and efface the adjacent fibroadiopose tissue, in which they are surrounded by dense bands of fibrous connective tissue. **(1pt.)**. In this section, glands are multifocally filled with acute hemorrhage **(1pt.)** or a mixture of fibrin, hemosiderin-laden macrophages, sloughed epithelium, and cellular debris. There are low numbers of siderophages, lymphocytes and plasma cells adjacent to infiltrative glands throughout the section, as well as rare perivascular aggregates **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Oviduct, mesometrium, mesentery: Endometriosis. **(4pt.)**

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