WSC 2009-2010, Conference 19, Case 1.

Tissue from a sooty mangabey.

MICROSCOPIC DESCRIPTION: Lung: Focally within the large section of lung, there is a 0.75cm x 0.25cm nodule of endometrial stroma**(2 pt.)** with few glands, located primarily at the periphery. The endometrial stroma is composed of short bundles and streams of spindle cells**(1 pt.)** with indistinct cell borders, scant eosinophilic, fibrillar cytoplasm **(1 pt.)**and an oval to elongate nucleus with finely stippled chromatin**(1 pt.)**. There is some variability in density of the fibrous stroma**(1 pt.)** within the nodule, ranging from inapparaent to prominent. The periphery of this stromal nodule is primarily lined by pseudostratified columnar, ciliated epithelial cells **(2 pt.)** (uterine glandular epithelium) **(2 pt.)** with a moderate amount of clear to pale eosinophilic cytoplasm and prominent basilar vacuolation. Rarely, the epithelium invaginates into the stromal nodule to form true endometrial glands **(1 pt.)**. Scattered throughout the stroma are low numbers of hemosiderin-laden macrophages**(2 pt.)**, with lesser numbers of neutrophils and lymphocytes. The adjacent lung tissue is compressed, congested, and contains aggregates of hemosiderin-laden macrophages, primarily in perivascular and subpleural locations **(1 pt.)**. Immediately adjacent to the nodule, alveolar walls are markedly expanded by collagen.

MORPHOLOGIC DIAGNOSIS: Lung: Endometriosis. **(5 pt.)**

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

WSC 2009-2010. Conference 19, Case 2

Tissue from a macaque.

MICROSCOPIC DESCRIPTION: Pancreas: Arterial walls are markedly thickened up to 5 times normal. **(1 pt.)** There is diffuse coagulative necrosis **(2 pt.)** of the inner of the tunica intima and inner half of the tunica media, with loss of endothelium as well as the internal elastic lamina **(1 pt.)**, and multifocally, there are fibrin clots attached to the denuded collagen of the arterial lumen **(1 pt.)**. The necrosis extends halfway into the tunica media; smooth muscle cells within this area have lost tinctorial quality. Necrotic cells are separated by pink edema fluid**(1 pt.)**, and multifocally, brightly eosinophilic aggregated protein matrix (fibrinoid necrosis) **(2 pt.)**, occasionally admixed with low numbers of histiocytes. The outer portions of the tunica media are expanded by edema, mucin, and small numbers of macrophages (often hemosiderin-laden), neutrophils, lymphocytes and rare plasma cells within the wall. **(1 pt.)** Adjacent to affected vessels, there is necrosis and loss of the pancreatic tissue **(1 pt.)**. Remaining exocrine cells are either atrophic with loss of zymogen granules **(1 pt.)**, or markedly attenuated with scant homogenous eosinophilic cytoplasm and a large lumen **(1 pt.)** (regeneration). In regenerative areas, acini are separated by abundant clear space, moderate amounts of hemorrhage, fibrin, edema, numerous proliferating fibroblasts, and aggregates of neutrophils **(1 pt.)**. In the adjacent pancreas, there is marked hyperplasia of immature pancreatic epithelial cells, often forming ductlike structures (nesidioblastosis) **(1 pt.)**.

MORPHOLOGIC DIAGNOSIS: Pancreas, arteries: Arteritis, necrotizing, diffuse, moderate, with adjacent pancreatic necrosis, acinar regeneration, and nesidioblastosis. **(3 pt.)**

Name the condition: Polyarteritis nodosa **(2 pt.)**

O/C – **(1 pt.)**

NOTE: There is variation within slides in terms of the amount of inflammation within vessel walls, and some sections have an intravascular proliferation of atypic round cells which is not part of this description.

WSC 2009-2010, Conference 19, Case 3.

Tissue from a macaque.

MICROSCOPIC DESCRIPTION: Lung: Diffuse, pulmonary arteries and their larger branches are tortuous **(1pt.)** and the tunica intima (and in some areas, the tunica media) is markedly thickened **(1pt.)** by an accumulation of abundant amphophilic ground substance **(1pt.)**, resulting in a slit-like lumen. Smooth muscle cells within the tunica media often have large cytoplasmic clear vacuoles, and the tunica adventitia is often moderately expanded by edema. Scattered throughout the parenchyma, there are areas of coagulative necrosis **(2pt.)** (infarcts) ranging up to a centimeter in diameter. Centrally, the infarcts contain the blanched remnants of alveolar architecture in which alveoli are (were) filled with hemorrhage **(1pt.)**, and are rimmed by a thick layer of organizing granulation tissue **(1pt.)**with prompt fibroblasts. In the remaining lung, alveolar septa are thickened by type II pneumocyte hyperplasia **(2pt.)** and fibrous connective tissue. **(1pt.)** Alveoli contain variable combinations and concentration of hemosiderin-laden macrophages **(1pt.)** (heart failure cells) **(1pt.)**, edema **(1pt.)** fluid, and fibrin, as well as low numbers of lymphocytes and neutrophils. The pleura is markedly thickened by mature fibrous connective tissue, polymerized fibrin **(1pt.)**, numerous fibroblasts, and low numbers of macrophages and lymphocytes **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Lung, arteries: Arteriopathy, proliferative, diffuse, mild to moderate, with multifocal vascular infarcts, diffuse septal fibrosis, type II pneumocyte hyperplasia, and heart failure cells. **(4pt.)**

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

WSC 2009-2010, Conference 19, Case 4.

Tissue from a macaque.

MICROSCOPIC DESCRIPTION: Spleen **(1 pt.)**: Diffusely, 90% of the spleen is effaced **(1 pt.)** by nodular **(1 pt.)** , occasionally coalescing aggregates of a hyaline, waxy, homogenous eosinophilic material **(2 pt.)** (amyloid) **(2 pt.)** which contains small amounts of polymerized fibrin **(1 pt.)** , hemorrhage **(1 pt.)** , and slit-like vessels. The presence of the amyloid results in an undulant profile to the splenic capsule. White and red pulp is markedly depleted within the remaining splenic parenchyma **(3 pt.)** .

MORPHOLOGIC DIAGNOSIS**:** 1. Spleen: Amyloidosis, nodular, diffuse, severe. **(3 pt.)**

2. Spleen, white pulp: Atrophy, diffuse, severe. **(2 pt.)**

Name another likely affected organ in this animal: Liver, intestine **(2 pt.) –** both common areas where you may find amyloid associated with chronic inflammation in the rhesus macaque.

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