

WSC 2017-2018 Conference 1.

Case 1. Tissue from a dog

MICROSCOPIC DESCRIPTION: Lung: Multifocally, alveolar walls **(1pt.)** are thickened up to 10 times normal **(1pt.)** by nodular, occasionally coalescing aggregates **(1pt.)** of a lightly eosinophilic waxy, homogenous material **(2pt.)** (amyloid) **(2pt.)** which surrounds alveolar capillaries and often encroaches on adjacent alveoli. **(2pt.)** This material is unassociated with inflammation. **(1pt.)** Alveoli contain small amounts of fibrin and or edema fluid **(2pt.)**. Similar material also often transmurally and markedly expands pulmonary arterioles **(2pt.)** of all sizes **(1pt.)**. Few macrophages are present within alveolar capillaries. There is multifocal mild deposition of anthracosilicotic pigment adjacent to airways.

(Note: This slide is mildly autolytic, based on sloughing of airway epithelium and occasional postmortem bacilli.)

MORPHOLOGIC DIAGNOSIS: Lung, alveolar septa and pulmonary arterioles/arterioles: Amyloidosis, diffuse, moderate to severe. **(5pt.)**

Note: Pulmonary arteries in older dogs may also be thickened by extruded protein, a condition known as pulmonary hyaline arteriosclerosis.

Williams, KJ: Coronary Arteriosclerosis with Myocardial Atrophy in a 13-year-old Dog. Vet Path, Issue 6, 2003.

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Case 2. Tissue from an ox.

**MICROSCOPIC DESCRIPTION:** Partial section of globe with cornea and conjunctiva. Diffusely, the anterior uvea, and to a lesser extent the sclera, iris, ciliary body, and choroid are diffusely infiltrated by innumerable large lymphocytes with a small to moderate amount of finely granular amphophilic cytoplasm and large, often anisokaryotic nuclei with prominent nucleoli. Numerous mitotic figures are present within this population. They are admixed with far fewer macrophages and rare neutrophils, and each of these structures is also expanded by moderate amounts of edema, and vessels are markedly ectatic and congested. Most prominently within the sclera, these blastic lymphocytes are centered on venules, often effacing all levels of the wall, where they are admixed with moderate amounts of cellular debris (vasculitis). The cornea is moderately thickened by edema, and the adjacent conjunctiva is infiltrated by lymphocytes of normal morphology admixed with fewer histiocytes and plasma cells. The anterior chamber contains a moderate amount of light pink proteinaceous exudate, within which there are moderate numbers of vacuolated macrophages, neutrophils, and lymphocytes, admixed with cellular debris. Macrophages often line the anterior surface of the iris leaflets. A similar but less cellular exudate is present in the anterior segment (and the lens is not present). The lens is artifactually detached (it's morphology, to include rod and cones is good, and there is no hyperplasia of the RPE)

**MORPHOLOGIC DIAGNOSIS:** Globe: Endophthalmitis, lymphoblastic diffuse, marked with lymphoblastic vasculitis, subacute anterior uveitis, and corneal edema.

**CAUSE:** Ovine herpesvirus-2 (malignant catarrhal fever) **(3pt.)**

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

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Case 3. Tissue from a rabbit.

MICROSCOPIC DESCRIPTION: Lung: Diffusely, alveolar septa are expanded 2-4 normal **(1 pt)** by variable combinations and concentrations of viable heterophils, macrophages, lymphocytes, edema fluid and hemorrhage and congestion. **(1 pt)** Intervening alveolar spaces are expanded by light pink granular to flocculent edema fluid **(1 pt)** as well as small amounts of polymerized fibrin, hemorrhage and moderate numbers of foamy macrophages **(1 pt)**, and occasional heterophils and small amounts of cellular debris. Polymerized fibrin often forms layers along alveolar septa **(1 pt)** (hyaline membranes) **(1 pt)** and occasionally thrombi within alveolar capillaries and veins **(1 pt)**. Scattered randomly throughout the section are areas of septal lytic necrosis **(2 pt)** in which architecture is lost and replaced by abundant cellular debris, degenerate neutrophils and macrophages, hemorrhage, and fibrin. Throughout the section, macrophages **(1 pt)** and type 1 pneumocytes contain protozoal cysts ranging up to 20um **(1 pt)** containing numerous 2-3um basophilic elliptical tachyzoites **(1 pt)**. Airways often contain refluxed edema fluid and cellular contents consistent with that seen in surrounding alveoli.

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, interstitial **(1 pt)**, necrotizing **(1 pt)**, multifocal, marked, with diffuse alveolar edema **(1 pt)**, hyaline membrane formation, and intrahistiocytic apicomplexan cysts. **(1 pt)**

CAUSE: *Toxoplasma gondii* **(3 pt)**

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

O/C – **(1 pt.)**

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Case 4. Tissue from a cat.

**MICROSCOPIC DESCRIPTION:** Eye: Within both the anterior and posterior segments, there are large clots containing numerous erythrocytes enmeshed within lamellae of polymerized fibrin, **(2 pt)** which at the periphery contains numerous hemosiderin-laden macrophages **(1 pt)** and proteinaceous fluid. There is mild neovascularization of the central cornea and minimal overlying epithelial hyperplasia. The iris is diffusely and mildly thickened by edema and one side is covered by a loosely arranged pre-iridal fibrovascular membrane **(1 pt)** which is contiguous with the clot in the anterior chamber. There is multifocal edema and hemorrhage within the anterior uvea. The posterior chamber contains abundant proteinaceous exudate admixed with hemorrhage **(1 pt)** . The retina is totally detached **(1 pt)** , and there is moderate loss of the inner ganglion and nuclear layers **(1pt)** . Multifocally, the underlying retinal pigmented epithelium is hyperplastic **(1 pt)** . Multifocally within the choroid and retina, and surrounding the optic nerve **(1 pt)** , the walls of small arterioles are hyalinized and thickened **(1 pt)** , with a lamellated “onion-skinned” appearance **(1 pt)** There is mild lymphocytic inflammation in the attached conjunctiva. **(1 pt)**

**MORPHOLOGIC DIAGNOSIS:** Eye: Arteriosclerosis, hyaline and proliferative, diffuse, mild, with marked hyphema, pre-iridal fibrovascular membrane formation, and retinal detachment and atrophy. **(4 pt.)**

**CAUSE:** Hypertension **(3 pt)**

O/C – **(1 pt.)**