

WSC 2023-2024  
Conference 9, Case 1  
Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Five sections of lung are submitted for examination. Multifocally, small- and medium-caliber pulmonary veins **(1pt.)** throughout all sections are tortuous **(1pt.)** and their lumina are compromised and/or occluded **(1pt.)** by proliferation of vascular smooth muscle cells **(1pt.)** and plump endothelium **(1pt.)**, and peripherally, they are often surrounded by a small amount of lamellar collagen. **(1pt.)** Within their proximity, alveolar septa are often hypercellular due to proliferation of endothelial cells **(1pt.)** and alveolar capillaries are often profoundly congested **(1pt.)** and bulge into alveolar lumina; rarely, capillary walls are ruptured with resultant intra-alveolar hemorrhage. **(1pt.)** Multifocally, alveolar septa are lined by dense polymerized fibrin (hyaline membranes). **(1pt.)** Diffusely, alveolar lumina contain varying combinations and concentrations of alveolar macrophages, siderophages **(1pt.)**, hemorrhage, and edema. **(1pt.)** Multifocally, small and medium-sized pulmonary arteries **(1pt.)** exhibit mild mural thickening due to medial smooth muscle hyperplasia, edema, occasional concentric to asymmetric intimal hyperplasia **(1pt.)**, and rare expansion of the tunica media by brightly eosinophilic fibrillar protein which contains small amounts of cellular debris (fibrinoid necrosis). **(1pt.)**

**MORPHOLOGIC DIAGNOSIS:** Lung: Venous smooth muscle hyperplasia and stenosis **(1pt.)**, multifocal to coalescing, severe, with septal endothelial hypertrophy (capillary hemangiomatosis) **(1pt.)**, segmental septal capillary congestion, and alveolar histiocytosis and siderosis **(1pt.)**

**NAME THE CONDITION:** Pulmonary veno-occlusive disease with capillary hemangiomatosis **(1pt.)**

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

WSC 2023-2024

Conference 9, Case 2

Tissue from a dog.

(Multiple sections from different blocks were submitted on this case.)

**MICROSCOPIC DESCRIPTION:** Lung: Approximately 75% of the section is composed of multifocal to coalescing areas of eosinophilic and granulomatous inflammation. Within the affected areas, alveoli are filled **(1pt.)** by varying combinations and concentrations of eosinophils **(1pt.)**, foamy alveolar macrophages **(1pt.)**, and fewer neutrophils, lymphocytes, plasma cells and multinucleated giant cell macrophages, **(1pt.)** admixed with moderate amounts of hemorrhage **(1pt.)** and small amounts of edema, fibrin, and cellular debris. There is erythrophagocytosis by macrophages, and few siderophages. **(1pt.)** Alveolar septa within inflamed areas are expanded up to 5X normal thickness by fibrous connective tissue **(1pt.)** and prominent fibroblasts, and edema. Septal capillaries are hypercellular with hypertrophy of intraseptal macrophages and numerous circulating eosinophils and lymphocytes. **(1pt.)** There is rare type II pneumocyte hyperplasia. In some areas, septa are discontinuous. **(1pt.)** Airways of all sizes contain refluxed inflammatory cells and hemorrhage as previously described, and larger airways are often segmentally devoid of lining epithelium (autolytic change). The walls of some airways are infiltrated by inflammatory cells as previously described. **(1pt.)** There is hyperplasia of bronchiolar-associated lymphoid tissue, and larger vessels are also cuffed by lymphocytes and plasma cells. **(1pt.)** Inflammatory changes are also confluent and severe within subpleural areas **(1pt.)** and inflammatory cells migrate into and expand the pleura. **(1pt.)** Extending from the pleura are villus-like fibrous tags **(1pt.)** which contain similar inflammatory cells as previously described.

**MORPHOLOGIC DIAGNOSIS:** Lung: Pneumonia, **(1pt.)** eosinophilic **(1pt.)** and granulomatous **(1pt.)**, chronic, multifocal to coalescing, severe **(1pt.)**.

**CONDITION:** Eosinophilic bronchopneumopathy (eosinophilic pulmonary granulomatosis OK). **(2pt.)**

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

WSC 2023-2024  
Conference 9, Case 3.  
Tissue from an ox.

**MICROSCOPIC DESCRIPTION:** Lung: Diffusely, alveolar septa demonstrate one or more of the following changes: pyknosis (necrosis) or loss of type 1 pneumocytes **(1pt.)**, discontinuity with hemorrhage into the adjacent alveoli (septal necrosis) **(1pt.)**, marked congestion and edema **(1pt.)**, and extensive type II pneumocyte hyperplasia. **(1pt.)** Rupture of alveolar septa often results in foci of emphysema. **(1pt.)** Alveolar lumina are filled and often expanded by pink proteinaceous edema **(1pt.)**, small to moderate numbers of foamy alveolar macrophages **(1pt.)**, viable and necrotic neutrophils **(1pt.)**, and fewer lymphocytes and multinucleated giant cell macrophages **(1pt.)**, and occasionally deeply eosinophilic lamellations of polymerized fibrin and necrotic cellular debris adjacent to the septa **(1pt.)** (hyaline membranes) **(1pt.)**. Airways multifocally contain refluxed alveolar contents and multifocally, there is extension of bronchiolar epithelium into the adjacent alveoli. Lymphatics within the interlobular septa are markedly expanded by edema **(1pt.)** and to a lesser extent clear space. The pleura is mildly expanded with edema. **(1pt.)**

**MORPHOLOGIC DIAGNOSIS:** Lung: Pneumonia, interstitial **(1pt.)**, necrotizing **(1pt.)**, diffuse, severe, with marked alveolar and interlobular edema **(1pt.)**, hyaline membranes **(1pt.)**, and type II pneumocyte hyperplasia.

**CAUSE:** 3-methylindole intoxication (perilla mint, 4-ipomeanol, stinkwood, rapeseed all OK) **(2pt.)**

**CONDITION:** Acute bovine pulmonary edema and emphysema (ABPEE) or atypical interstitial pneumonia **(1pt.)**

WSC 2023-2024  
Conference 9, Case 4.  
Tissue from a sheep

**MICROSCOPIC DESCRIPTION:** Lung: Two sections of lung are submitted for examination. Diffusely, peribronchiolar **(1pt.)** lymphoid tissue is markedly hyperplastic and extends into the surrounding pulmonary parenchyma. There are multifocal cuffs of lymphocyte and plasma cells around pulmonary vessels as well. Multifocally, alveolar septa are expanded up to three times normal by variable combinations and concentrations of lymphocytes and plasma cells **(1pt.)** hypertrophy of intraseptal macrophages **(1pt.)**, edema **(1pt.)**, large numbers of circulating neutrophils **(1pt.)**, and small amounts of mature collagen **(1pt.)**. Alveoli are multifocally lined by type II pneumocytes. Alveolar lumina contain large numbers of alveolar macrophages **(1pt.)**, viable and necrotic neutrophils, **(1pt.)** and rare multinucleated giant cells **(1pt.)**, admixed with variable amounts of hemorrhage **(1pt.)**, edema and fibrin and cellular debris. There is multifocal necrosis and attenuation of airway epithelium **(1pt.)** and airways often contain numerous viable and necrotic neutrophils **(1pt.)** admixed with fewer macrophages and cellular debris.

**MICROSCOPIC DIAGNOSIS:** 1. Lung: Bronchopneumonia, suppurative, diffuse, severe with peribronchiolar and perivascular lymphoid hyperplasia. **(1pt.)**

2. Lung: Pneumonia, interstitial **(1pt.)**, lymphohistiocytic **(1pt.)**, diffuse, moderate **(1pt.)**

Cause: Ovine retrovirus (small ruminant lentivirus OK) **(2pt.)** and a secondary bacterial bronchopneumonia **(1pt.)**

Name the disease: Maedi-visna, ovine progressive pneumonia and *Mycoplasma ovipneumoniae* **(1pt.)**