

WSC 2019-2020 Conference 1.

Case 1. Tissue from a horse.

MICROSCOPIC DESCRIPTION: Lung. The section of lung is diffusely atelectatic **(2pt)**. Alveolar spaces are filled with variable combinations and concentrations of foamy eosinophilic protein **(1pt)**, alveolar macrophages **(1pt)** and fewer neutrophils **(1pt)** and multinucleated giant cell macrophages **(1pt)**, cellular debris, small amounts of polymerized fibrin **(1pt)** which rarely incorporates nuclear debris and lines alveolar walls **(1pt)** and terminal bronchioles **(1pt)** rare hemorrhage, and squames **(1pt)**. Alveolar septa are expanded by diffuse type II pneumocyte hyperplasia **(2pt)**, macrophages **(1pt)**, and fewer lymphocytes with rare neutrophils, as well as edema . There is multifocal necrosis and attenuation of terminal bronchiolar epithelium **(1pt)**, with areas of re-epithelialization **(1pt)**, and lumina contain aggregates of previously described necrotic epithelial cells, fibrin, and hemorrhage.

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, bronchointerstitial **(1pt)**, necrotizing **(1pt)**, diffuse, moderate, subacute with type II pneumocyte hyperplasia hyaline membrane formation and marked atelectasis **(1pt)**

NAME THE CONDITION: Equine respiratory distress syndrome **(1pt.)**

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

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Case 2. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Lung: Diffusely **(1pt)**, alveoli are filled and expanded by large numbers of viable and degenerate neutrophils **(1pt)** admixed with large amounts of cellular debris **(1pt)**, hemorrhage **(1pt)** and polymerized fibrin **(1pt)**, which often forms a mat against damaged alveolar septa **(1pt)** (hyaline membranes) **(1pt)**. Throughout the section, alveolar septa are markedly congested, and there are patchy areas of septal necrosis **(2pt)** in which alveolar walls are discontinuous, leak erythrocytes, and are filled or replaced by abundant fibrin, degenerate neutrophils, and cellular debris. **(1pt)** Some areas of necrosis are extensive, with coalescing alveoli filled with hemorrhage, viable and degenerate neutrophils, and cellular debris. Airways **(1pt)** contain refluxed hemorrhage, fibrin, and inflammatory debris, and there is hemorrhage within the connective tissue of large airways. **(1pt)** Vessels throughout the section contain increased numbers of neutrophils, which often pavement along the walls. **(1pt)** Multifocally within the walls of one large artery and several veins, there are low to moderate numbers of viable and degenerate neutrophils and small amounts of cellular debris (vasculitis) **(1pt)**, as well as marked periarteriolar edema.

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, interstitial **(1pt)**, fibrinosuppurative **(1pt)**, necrotizing, and hemorrhagic, diffuse, severe with multifocal necrotizing vasculitis **(1pt)**

CAUSE: Acceptable answers: *E. coli* (or other coliform), *Streptococcus zooepidemicus* **(3pt.)**

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

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Case 3. Tissue from an ox.

MICROSCOPIC DESCRIPTION: Lung: Diffusely, interlobular septa **(1pt)** are markedly expanded up to 20 times normal by abundant edema **(1pt)**, eosinophilic beaded fibrillar material (fibrin), and necrotic debris and are infiltrated by large numbers of macrophages with fewer viable and degenerate neutrophils, admixed with cellular debris. Lymphatics within the interlobular septa often contain fibrin thrombi **(1pt)**, and there is mild smooth muscle hyperplasia of arterioles and mild adventitial fibrosis. There are numerous nodular tertiary lymphoid structures **(1pt)** scattered throughout the interlobular septa. Within several lobules, alveoli are expanded and filled by innumerable viable and degenerate neutrophils **(1pt)** admixed with cellular debris and granular protein, and in some areas, hemorrhage, and fibrin. Alveolar septa **(1pt)** are expanded by circulating neutrophils, edema, occasionally fibrin thrombi and small amounts of fibrous connective tissue. Often within these areas, these inflammatory foci are replaced by large areas of coagulative necrosis **(1pt)**, and more peripherally, lytic necrosis **(1pt)**, which is often bordered by granulation tissue **(1pt)** (sequestra) **(1pt)**. Within these lobules, intervening alveoli contain an inflammatory infiltrate as previously described and are atelectatic. Airways in these lobules contain refluxed inflammatory material. Within adjacent, less affected lobules, alveolar walls are markedly congested, variably atelectatic and contain large numbers of circulating neutrophils. Around bronchioles, there are numerous neutrophils, fewer macrophages, and lymphocytes within the peribronchiolar tissue **(1pt)**, and neutrophils infiltrate the bronchial submucosa and mucosa. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Lung: Bronchopneumonia **(1pt)**, fibrinosuppurative **(1pt)** and necrotizing **(1pt)**, chronic-active, diffuse, severe, with marked interlobular edema and fibrosis **(1pt)**, and lymphoid hyperplasia.

CAUSE: *Mycoplasma mycoides* subsp. *mycoides* (other acceptable: *Mannheimia hemolytica*, *Bibersteinia trehalosi*, *Histophilus somni*) **(2pt)**

NAME THE CONDITION: Contagious bovine pleuropneumonia **(1pt)**

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

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Case 4. Tissue from a sheep.

Lung: Diffusely, peribronchiolar and perivascular lymphoid tissue **(2 pt.)** is markedly expanded, often forming follicles **(1 pt.)** that range up to 1 mm in diameter and extend into the surrounding septa, and contain low numbers of tingible body macrophages **(1 pt.)**. Diffusely, alveolar septa are expanded up to three times normal **(1 pt.)** by low to moderate numbers of lymphocytes **(1 pt.)**, macrophages **(1 pt.)**, and rare neutrophils and plasma cells, as well as hypertrophic and hyperplastic smooth muscle **(2 pt.)** and in areas, small amounts of mature collagen **(1 pt.)**. Alveoli are multifocally lined by type II pneumocytes **(1 pt.)** and contain foamy alveolar macrophages **(1 pt.)** and rare multinucleated giant cells, admixed with small amounts of proteinaceous fluid. **(1 pt.)**

MICROSCOPIC DIAGNOSIS: Lung: Pneumonia, interstitial **(1 pt.)**, lymphohistiocytic **(1 pt.)**, diffuse, moderate with peribronchiolar and perivascular lymphoid hyperplasia **(1 pt.)**, and smooth muscle hypertrophy.

Cause: Ovine retrovirus (small ruminant lentivirus OK) **(2 pt.)**

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

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