

WSC 2015-2016, Conference 3

Case 1. Tissue from an ox

MICROSCOPIC DESCRIPTION: Chorioallantois **(1 pt.)**: There is multifocal necrosis of chorionic villi which are infiltrated by numerous degenerate neutrophils **(1 pt.)** admixed with cellular debris (lytic necrosis) **(1 pt.)**, edema, and fibrin. Other chorionic villi are infiltrated by low to moderate numbers of neutrophils **(1 pt.)**, and expanded by abundant edema and fibrin; chorionic vessels are markedly congested. Other chorionic villi are replaced by crystalline mineral **(1 pt.)**. Numerous trophoblasts **(1 pt.)**, are markedly expanded by large numbers of intracytoplasmic 1-2 um bacilli **(2 pt.)**. The chorion is moderately expanded by edema **(1 pt.)**, and there infiltrated by low numbers of neutrophils admixed with cellular debris; chorionic stromal cells are multifocally necrotic. **(1 pt.)** Chorionic vessels, predominantly arteries are expanded by low numbers of neutrophils, extruded protein, and cellular debris (vasculitis). **(2 pt.)** Multifocally within the amniotic connective tissue, there are few neutrophils, small amounts of mineral and increased clear space with few dilated lymphatics (edema) **(1 pt.)**.

MORPHOLOGIC DIAGNOSIS: Chorioallantois: Placentitis, necrotizing, multifocal to coalescing, moderate, with mild multifocal vasculitis and numerous intratrophoblastic bacilli **(3 pt.)**

CAUSE: *Brucella abortus* **(3 pt.)**

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

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Case 2. Tissue from a deer.

MICROSCOPIC DESCRIPTION: Lung: Diffusely, bronchiolar and bronchial lumina are filled **(1 pt.)** with large numbers of viable neutrophils **(1 pt.)** admixed with fewer macrophages **(1 pt.)** and abundant cellular debris **(1 pt.)**. Airway epithelium is infiltrated **(1 pt.)** by low to moderate numbers of neutrophils **(1 pt.)**, which extend into the adjacent peribronchiolar fibrous connective tissue and often into surrounding alveolar parenchyma, where they are admixed with moderate numbers of plasma cells **(1 pt.)**, lymphocytes, and fewer macrophages. Diffusely, alveolar septa are markedly expanded **(1 pt.)** by moderate congestion, and small amounts of fibrin **(1 pt.)** and edema, as well as low to moderate numbers of neutrophils (often in circulation) and macrophages, and multifocal mild type II pneumocyte hyperplasia **(1 pt.)**. Approximately, 90% of alveoli are atelectatic **(1 pt.)**, and contain low to moderate numbers of neutrophils with fewer macrophages admixed with varying amounts of fibrin, edema, and cellular debris. The remainder of the alveoli are emphysematous. Interlobular septa and pleural connective tissues is multifocally expanded by marked edema **(1 pt.)**, multifocal hemorrhage, dilated lymphatics and congested venules, and infiltrated by low to moderate numbers of neutrophils, macrophages, lymphocytes, and plasma cells. **(1 pt.)**

MORPHOLOGIC DIAGNOSIS: Lung: Bronchopneumonia **(1 pt.)**, suppurative **(1 pt.)**, chronic, diffuse, severe, with interlobular edema and emphysema **(1 pt.)**.

CAUSE: *Pasteurella multocida* (*Mycoplasma bovis*, *Histophilus somni*, *Mannheimia hemolytica* – 1 pt.) **(3 pt.)**

NOTE: The lack of fibrin and oat cells makes *M. hemolytica* less likely; the lack of foci of coagulative necrosis makes *Mycoplasma bovis* a less likely candidate. The presence of primarily viable neutrophils in the exudate is most commonly seen with *P. multocida*

(O/C)- (1 pt.)

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Case 3. Tissue from a elk.

MICROSCOPIC DESCRIPTION: Skeletal muscle: Approximately 80% of myocytes exhibit one or more of the following changes: swelling, hyalinization **(1 pt.)**, loss of cross striations **(1 pt.)**, sarcoplasmic vacuolation **(1 pt.)** (degenerative changes) **(1 pt.)**, marked shrinkage**(1 pt.)**, formation of contraction bands **(1 pt.)** and loss of nuclei **(1 pt.)** (necrosis) **(1 pt.)**, or shrunken and hypereosinophilic (atrophy) **(1 pt.)**. There are rare regenerating **(1 pt.)** fibers, with basophilic cytoplasm and multiple internalized hypertrophic nuclei. Diffusely, the epimysium is markedly expanded **(1 pt.)** by edema **(1 pt.)**, a modest increase in collagen and moderate numbers of plump fibroblasts **(1 pt.)**, and there are rare aggregates of lymphocytes **(1 pt.)**, histiocytes, and rare multinucleated giant cell macrophages scattered throughout areas of degenerate/necrotic myocytes. Lymphatics are mildly dilated, and lymphatics or veins occasionally contain fibrin thrombi **(1 pt.)** Rare myofibers contain a single protozoal cyst containing large numbers of 2-4um banana-shaped apicomplexan zoites. **(1 pt.)**

MORPHOLOGIC DIAGNOSIS: Skeletal muscle: Degeneration and atrophy, diffuse, severe, with rare myofiber regeneration. **(3 pt.)**

Skeletal muscle: Sarcocyst, focal.

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

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CASE 4. Tissue from a horse.

MICROSCOPIC DESCRIPTION: Lung: There are three sections of lung on the slide. Throughout each of the sections, 50% or more of the pulmonary parenchyma is effaced **(1 pt.)** by multifocal to coalescing variably mature nodular areas of fibrosis **(1 pt.)**. Within these areas, septal architecture is replaced by large amounts of collagen, throughout which are scattered numerous foamy macrophages **(1 pt.)**, fewer multinucleated foreign body macrophages **(1 pt.)**, lymphocytes **(1 pt.)**, rare plasma cells, and small amounts of cellular debris. Multifocally, some fibrotic areas contain areas of lytic necrosis **(1 pt.)** ranging up to 2mm in diameter, which contain variable amounts of cellular debris as well as crystalline mineral **(1 pt.)**. Histiocytes within these occasionally contain a single 3-5 linear crystal of birefringent silica **(1pt.)** Within fibrotic areas, airways are compressed, often mildly atrophic, and contain low numbers of refluxed macrophages and edema. **(1 pt.)** Adjacent alveolar septa are markedly expanded **(1 pt.)** by collagen, small amounts of edema, congestion, and type II pneumocyte hyperplasia **(1 pt.)**. Within these areas, alveoli contain low to moderate numbers of foamy macrophages admixed with fibrin and cellular debris. **(1 pt.)** The pleural is irregularly and markedly thickened by edema **(1 pt.)**, and thrown into papillary fronds; overlying mesothelium is moderately hyperplastic. On one section, the pleural is markedly thickened up to 5mm by mature fibrous connective tissue. **(2 pt.)**

MORPHOLOGIC DIAGNOSIS: Lung: Pneumonia, interstitial, granulomatous, chronic, multifocal to coalescing, severe. **(3 pt.)**

NAME THE CONDITION: Pulmonary silicosis **(2 pt.)**

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