

WSC 2011-2012. Conference 8  
Slide 1. Tissue from a tortoise.

**MICROSCOPIC DESCRIPTION:** Diffusely, faveoli **(1 pt.)** are filled by variable combinations and concentrations of macrophages **(1 pt.)**, viable and degenerate heterophils **(2pt.)** and moderate amounts of mucus strands, polymerized fibrin **(2 pt.)**, hemorrhage, and edema fluid. Faveolar pneumocytes are often sloughed; remaining cells multifocally are hypertrophic **(1 pt.)** and/or necrotic **(1 pt.)** and groups of contiguous pneumocytes often contain a smudgy amphophilic to basophilic intranuclear inclusion **(2 pt.)**. Faveolar capillaries are markedly congested. Bronchial and bronchiolar lumina contain moderate numbers macrophages and heterophils admixed with fibrin and cellular debris **(1 pt.)**; lining epithelium is multifocally necrotic, infiltrated by inflammatory cells, and attenuated. **(1 pt.)** The interedicular, peribronchial, and subpleural interstitial connective tissue is markedly expanded by edema and low to moderate numbers of heterophils **(2 pt.)**.

**MORPHOLOGIC DIAGNOSIS:** Lung: Bronchopneumonia, fibrinous, heterophilic and histiocytic, subacute, diffuse, severe, with numerous epithelial intranuclear viral inclusions. **(3 pt.)**

**CAUSE:** Chelonid herpesvirus **(2 pt.)**

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

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Slide 2. Tissue from a snake.

MICROSCOPIC DESCRIPTION: Liver: There is diffuse severe hepatocyte atrophy. **(2 pt.)** Hepatocytes are markedly shrunken with granular eosinophilic cytoplasm, and sinusoids are markedly dilated **(1 pt.)** and diffusely congested. Multifocally, hepatocytes are rounded up, brightly eosinophilic, and individualized with karyorrhectic nuclei (necrosis) **(1 pt.)**. Rarely, hepatocyte nuclei are enlarged and contain a 4-5 um intranuclear inclusion which peripheralizes chromatin. **(2 pt.)** Circulating blood contains with numerous heterophils **(1 pt.)**. Hepatocytes, biliary epithelium, and rare endothelial cells contain one or multiple brightly eosinophilic globular intracytoplasmic inclusions. **(1 pt.)**

Stomach: There is diffuse atrophy **(1 pt.)** of chief cells with loss of zymogen granules. Diffusely, mucus cells, parietal cells, endothelial cells and rare smooth muscle cells contain one or multiple brightly eosinophilic globular intracytoplasmic inclusions **(1 pt.)**. Adjacent mesenteric tissue is devoid of fat. **(1 pt.)**

MORPHOLOGIC DIAGNOSIS: 1. Liver, hepatocytes: Atrophy, diffuse, severe. **(1 pt.)**

2. Liver: Hepatitis, necrotizing, multifocal, marked with rare intranuclear viral inclusion bodies. **(2 pt.)**

3. Liver, stomach, numerous cell types: Intracytoplasmic viral inclusions, numerous. **(2 pt.)**

4. Stomach, glandular epithelium: Atrophy, diffuse, severe. **(1 pt.)**

NAME THE DISEASE: Boid inclusion disease **(2 pt.)**

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

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Slide 3. Tissue from a kangaroo.

**MICROSCOPIC DESCRIPTION:** Lung: Diffusely **(1 pt.)**, alveolar septa are moderately to markedly expanded **(1 pt.)** by fibrin, edema, congestion, few neutrophils and macrophages, and multifocal type II pneumocyte hyperplasia **(1 pt.)**. Alveolar lumina are filled with variable amounts of polymerized fibrin **(1 pt.)**, neutrophils **(1 pt.)**, foamy alveolar macrophages, hemorrhage, small amounts of cellular debris, and rare multinucleated macrophages **(1 pt.)**. There is patchy septal necrosis **(1 pt.)**; in these areas, alveolar walls are effaced by degenerate neutrophils, macrophages, and abundant cellular debris, and there is moderate dystrophic mineralization **(1 pt.)**. Rare macrophages **(1 pt.)** and multinucleated giant cells contain a small intracytoplasmic vacuole containing multiple 2-4µm crescentic zoites **(1 pt.)** (apicomplexan schizont) **(2 pt.)**; rare individualized zoites may be seen extracellularly, primary within the alveoli. Bronchiolar epithelium is rarely necrotic and the lumen occasionally contains small amounts of fibrin, cellular debris, and viable and degenerate macrophages and neutrophils. The perivascular connective tissue is expanded by clear space and lymphatics are dilated (edema) **(1 pt.)**. The pleura is also expanded by edema, multifocally infiltrated by low numbers of neutrophils and histiocytes, and lined by mildly hyperplastic mesothelium.

**MORPHOLOGIC DIAGNOSIS:** Lung: Pneumonia, interstitial, fibrinonecrotic, diffuse, moderate with rare intrahistiocytic apicomplexan zoites. **(3 pt.)**

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

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

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Slide 4. Tissue from an elephant shrew.

**MICROSCOPIC DESCRIPTION:** Lung: Multifocally and randomly **(1 pt.)**, approximately 10% of the pulmonary parenchyma is replaced by multifocal to coalescing areas of pyogranulomatous **(1 pt.)** inflammation which does not totally efface septal architecture. Centrally, these areas are composed of a central area of eosinophilic and granular basophilic cellular debris **(1 pt.)**, surrounded by a layer of degenerate neutrophils **(1 pt.)**, and in turn by large areas in which alveoli are filled numerous macrophages **(1 pt.)** with grey granular cytoplasm and eccentric nuclei **(1 pt.)**. Macrophages often contain a large clear vacuole with few 2-3 um bacilli in negative relief. In the outermost edges of these areas, the alveolar septa are mildly to moderately expanded by low numbers of neutrophils, macrophages, collagen, and mild to moderate type II pneumocyte hyperplasia **(2 pt.)**. There is patchy expansion of alveolar septa throughout the entire section by low numbers of neutrophils and macrophages. . Areas of pyogranulomatous inflammation within the subpleural areas elevate the overlying pleura **(1 pt.)**, and those adjacent to airways often breach the basement membrane, infiltrate the epithelium, and extend into the lumen **(1 pt.)**. Multifocally, bronchioles within or adjacent to areas of inflammation contain small to moderate numbers of macrophages and neutrophils, admixed with cellular debris, **(1 pt.)** and epithelium is multifocally necrotic and or attenuated **(1 pt.)**.

**MORPHOLOGIC DIAGNOSIS:** Lung: Pneumonia, granulomatous and interstitial, multifocal to coalescing, moderate, with numerous intracellular bacilli **(3 pt.)**

**CAUSE:** *Mycobacterium avium-intracellulare* **(4 pt.)**

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