WSC 2018-2019 Conference 17
Case 1. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Testis: Throughout the section, the walls of small to medium caliber arterioles **(1pt.)** are expanded or occasionally transmurally effaced **(1pt.)** by large amounts of a brightly eosinophilic protein **(1pt.)** throughout which are scattered small to moderate amounts of cellular debris **(1pt.)** and degenerating neutrophils and hemorrhage. (fibrinoid necrosis) **(2pt.)** Smooth muscle cells are brightly eosinophilic, shrunken, and pyknotic. **(1pt.)** The adventitia **(1pt.)** is infiltrated by varying combinations and concentrations of viable and degenerate neutrophils, macrophages, and lymphocytes **(1pt.)**, also admixed with moderate amounts of cellular debris . Similar but less severe lesions are present in the area of the pampiniform plexus. **(1pt.)** There is necrosis of spermatogonia and Sertoli cells within adjacent seminiferous tubules **(1pt.)** with infiltration of few neutrophils and macrophages **(1pt.)**, and multifocal interstitial hemorrhage. There is diffuse degeneration of seminiferous tubules **(1pt.)** with decreased spermatid formation and low to moderate numbers of multinucleated spermatid giant cells. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: 1. Testis, arterioles: Vasculitis, necrotizing, **(1pt.)** random, multifocal, severe, with germ cell necrosis **(1pt.)**.
2. Testis, seminiferous tubules: Degeneration and atrophy, diffuse, moderate, with spermatid giant cell formation. **(1pt.)**

CAUSE: *Rickettsia rickettsiae* **(2pt.)**

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

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Case 2. Tissue from a pig.

MICROSCOPIC DESCRIPTION: Heart: There are multifocal to coalescing areas throughout the myocardium which are infiltrated by large numbers of lymphocytes **(1pt.)**, plasma cells **(1pt.)** and macrophages **(1pt.)**. Low numbers of multinucleated viral syncytia are scattered throughout the section. **(1pt.)** Cardiomyocytes within areas of infiltration exhibit decrease in fiber size **(1pt.)**, hypereosinophilia, loss of cross striations **(1pt.)** (degeneration) **(2pt.)**, with occasional fragmentation **(1pt.)** and nuclear pyknosis **(1pt.)** and rare mineralization (necrosis). **(2pt.)** In areas of myocyte loss, there is small amounts of immature loosely arranged fibrous connective tissue. **(1pt.)** Rarely , myofibers contain large hypertrophic nuclei and mildly basophilic cytoplasm (regeneration). **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Heart: Pancarditis, **(1pt.)** lymphohistiocytic and necrotizing, **(1pt.)**, multifocal to coalescing, marked.

CAUSE: Porcine circovirus-2 (porcine aphthovirus, parvovirus, and PCV-3 also acceptable). **(3pt.)**

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

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Case 3. Tissue from a guinea pig.

MICROSCOPIC DESCRIPTION: Lung: Diffusely, the airways are highlighted and expanded by a combination of luminal exudate **(1pt.)** and a mural inflammatory infiltrate **(1pt.)** which extends into the surrounding pulmonary parenchyma **(1pt.)**. The lumen contains large numbers of sloughed, necrotic **(1pt.)** airway epithelium **(1pt.)**, whose nuclei are expanded by smudgy basophilic **(1pt.)** intranuclear **(1pt.)** viral inclusions **(1pt.)**, admixed with numeorus degenerate heterophils (neutrophils), macrophages, and lymphcytes, abundant eosinophilic and basophilic cellular debris **(1pt.)**, and small amounts of hemorrhage and polymerized fibrin. Airway walls and surrounding connective tissue are infiltrated and multifocally effaced by large numbers of macrophages and lymphocytes and fewer plasma cells and rare heterophils which extend into and fill adjacent alveoli. **(1pt.)** In some sections within peribronchiolar connective, there are focal heterophilic abscesses **(1pt.)** surrounded by immature collagen and plump fibroblasts. There is diffuse alveolar atelatasis thoughout the section **(1pt.)**. Blood vessels are often surrounded by multiple layers of lymphocytes and plasma cells **(1pt.)**. There is a focal area of bone formation within peribronchiolar connective tissue (not present within all slides. The connective tissue surrounding large arterioles is edematous, with dilated lymphatics **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Lung: Bronchitis and bronchiolitis, **(1pt.)** necrotizing **(1pt.)**, diffuse, severe with lymphohistiocytic peribronchiolitis **(1pt.)** atelectasis, and numerous karyomegalic viral inclusions.

CAUSE: Guinea pig adenovirus **(2pt.)**

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

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Case 4. Tissue from a rhesus macaque.

(This is not a descriptive slide. Note the changes and move on. Not enough points to award.)

MICROSCOPIC DESCRIPTION: Adrenal gland: There is multifocal to coalescing acute hemorrhage within the deep zona fasciculata and superficial zona reticularis, which expands sinusoids. Multifocally, adrenocortical cells within areas of the hemorrhage exhibit degenerative changes including hyperchromatic nuclei, and rarely karyorrhexis (necrosis). There is abundant acid hematin within areas of hemorrhage (artifact).

MORPHOLOGIC DIAGNOSIS: Adrenal gland, zona fasciculata and reticularis: Hemorrhage, diffuse, marked, with multifocal necrosis

NAME THE CONDITION: Waterhouse-Friderichsen syndrome

CAUSE: Sepsis or endotoxemia