WSC 2009-2010, Conference 15, Case 1.

Tissue from a calf.

MICROSCOPIC DESCRIPTION: Gall bladder **(1 pt.)** and attached section of liver: The wall of the gall bladder is transmurally infiltrated by large numbers of lymphocytes **(1 pt.)** and neutrophils **(1 pt.)** and lesser numbers of histicytes and plasma cells which expand the wall and separate, surround, and replace glands**(1 pt.)**. There is multifocal ulceration of the gallbladder mucosa and cellular thrombi composed primarily of neutrophils within the submucosa. **(1 pt.)** There is marked edema of the gallbladder serosa with low to moderate numbers of neutrophils within the connective tissue as well as marginated within vessels and lymphatics. **(1 pt.)** Within the adjacent section of liver, portal areas are expanded **(1 pt.)** by moderate numbers of lymphocytes, plasma cells, and leser numbers of neutrophils and there is mild dilation of portal lymphatics. Scattered throughout the hepatic parenchyma, there are foci of hepatocellular necrosis **(1 pt.)** with infiltration by moderate numbers of neutrophils and lesser numbers of histocytes admixed with hemorrhage and fibrin, and in other areas, aggregates of low numbers of lymphocytes and lesser plasma cells and histiocytes (NOTE: presumably older foci of necrosis). There is diffuse mild Kupffer cell hyperplasia within the liver.

Small intestine (jejunum): There is diffuse marked villar loss, blunting and fusion **(1 pt.)**. Villar crypts are moderately separated and rarely replaced by large numbers of lymphocytes, neutrophils and lesser numbers of histiocytes and plasma cells which expand the lamina propria **(1 pt.)**. Some crypts are ectatic, lined by attenuated epithelium and contain low to moderate numbers of necrotic epithelial cells and neutrophils **(1 pt.)** (crypt abscesses.) **(1 pt.)** The submucosa **(1 pt.)** multifocally contains low to moderate numbers of neutrophils, histiocytes, and lymphocytes, and there is multifocal edema and cellular thrombi composed of neutrophils admixed with small amounts of fibrin. The lumen contains a large coagulum composed of fibrin, numerous often degenerate neutrophils, and necrotic epithelium**(1 pt.)** (NOTE: fibrinonecrotic membrane, presumably from an ulcerated section of mucosa outside the plane of this section)

MICROSCOPIC DIAGNOSIS: 1. Gallbladder: Cholecystitis, lymphocytic and neutrophilic, transmural, diffuse, moderate to severe. **(1 pt.)**

2. Liver: Hepatitis, necrotizing, multifocal, mild, with mild lymphocytic pericholangitis. **(1 pt.)**

3. Jejunum: Enteritis, subacute and neutrophilic, diffuse, moderate, with marked villar loss, fusion, and blunting. **(1 pt.)**

Note: some slides may have more ulceration in the gallbladder and small intestine, so the descriptor fibrinonecrotic may be more apropos. Either is acceptable for full credit.

CAUSE: *Salmonella dublin (typhimurium* OK) **(2 pt.)**

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

WSC 2009-2010. Conference 15, Case 2

Tissue from a lamb.

MICROSCOPIC DESCRIPTION: Lung: Diffusely, airways are surrounded by markedly increased amounts of bronchiolar-associated lymphoid tissue **(1 pt.)** which surrounds and replaces glands, contains well-formed lymphoid follicles **(1 pt.)** and compresses adjacent alveoli **(1 pt.)**. Within the germinal centers of the BALT, there are individual apoptotic cells, rare tingible body macrophages, and occasional neutrophils. Airways contain variable numbers of neutrophils **(1 pt.)**, admixed with lesser numbers of lymphocytes, and rare necrotic epithelial cells and small amounts of fibrin, mucus, and edema**(1 pt.)**. Airway epithelium is multifocally mildly hyperplastic **(1 pt.)** and contains low numbers of neutrophils and lymphocytes. Diffusely, alveolar septa are thickened **(1 pt.)** and hypercellular, and expanded by moderate numbers of histiocytes, neutrophils, small amounts of fibrin and edema **(1 pt.)**, as well as patchy type II pneumocyte hyperplasia**(1 pt.)**. Alveoli in these areas contain moderate to large numbers of alveolar macrophages **(1 pt.)** and both viable and degenerate neutrophils admixed with cellular debris **(1 pt.)**, fibrin, and abundant light pink edema fluid **(1 pt.)**. There is mild edema of interlobular septal and pleural connective tissue with dilation of lymphatics **(1 pt.)**.

MORPHOLOGIC DIAGNOSIS: Lung: Bronchopneumonia, suppurative, diffuse, moderate to severe, with edema, Type II pneumocyte hyperplasia and marked BALT hyperplasia. **(3pt.)**

CAUSE: *Mycoplasma ovipneumonia* and likely secondary bacterial pneumonia. **(3 pt.)**

O/C – **(1 pt.)**

WSC 2009-2010, Conference 15, Case 3.

Tissue from a chicken.

MICROSCOPIC DESCRIPTION: Bursa (affected and normal for comparison). There is diffuse severe loss of follicular lymphocytes**(2 pt.)** within both the cortex **(2 pt.)** and medulla **(2 pt.)** of the bursal follicles. The overall follicular architecture is preserved, and remaining germinal centers contain numerous macrophages **(2 pt.)** (often epithelioid **(1 pt.)**), with lesser numbers of heterophils **(1 pt.)** and rare plasma cells, and admixed with small aggregates of hyaline proteinaceous material**(1 pt.)**. The interfollicular areas **(1 pt.)** and submucosa**(1 pt.)** also contain abundant macrophages, rare heterophils, and multifocal marked edema **(1 pt.)**. There are small aggregates of lymphocytes and plasma cells surrounding vessels in the adventitia.

MORPHOLOGIC DIAGNOSIS: Bursa of Fabricius: Lymphoid depletion, diffuse, severe, with interstitial edema. **(3 pt.)**

Name two possible causes: Avian birnavirus (Gumboro Disease Virus) or avian circovirus (chick anemia agent) **(2 pt.)**

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

WSC 2009-2010, Conference 15, Case 4.

Tissue from a goat.

MICROSCOPIC DESCRIPTION: Heart, pericardium, and pericardial fat **(1 pt.)**: Within the epicardium, there is a focally extensive chronic abscess **(2 pt.)** with central area of lytic necrosis **(1 pt.)** composed of abundant pink amorphous and basophilic granular cellular debris**(1 pt.)** and numerous outlines of degenerate neutrophils **(1 pt.)** and mixed with large foci of dark blue granular mineral **(1 pt.)**. In some areas, there is a vague circular lamellation to the necrotic cells and debris **(1 pt.)**. The area of necrosis is bounded by a thick (up to 1 cm) band of granulation tissue **(1 pt.)** containing numerous plump fibroblasts **(1 pt.)**, large congested vessels, and an infiltrate of moderate numbers of macrophages **(1 pt.)**, lymphocytes, plasma cells, and rare neutrophils. Progressing centrifugally, the cellularity of the tissue decreases and the collagen increases, resulting in a dense fibrous capsule **(1 pt.)**. Diffusely, epicardial fat cells are separated by abundant pink edema fluid **(1 pt.)** and multifocally, adipocytes are mildly shrunken with basophilic hyaline cytoplasm (serous atrophy) **(1 pt.)**.

MORPHOLOGIC DIAGNOSIS**:** Pericardium: Pericarditis, necrosuppurative, chronic-active, focally extensive, severe with serous atrophy of fat. **(3 pt.)**

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

NAME THE DISEASE: Caseous lymphadenitis **(1 pt.)**

CAUSE: *Corynebacterium pseudotuberculosis* **(2 pt.)**