

WSC 2018-2019 Conference 5.

Case 1. Tissue from an ox.

**MICROSCOPIC DESCRIPTION:** Cerebellum: There is multifocal to coalescing hemorrhage **(1pt)** primarily within the leptomeninges **(1pt)** but also within all layers of the cerebellum, including the cerebellar white matter. **(1pt)** Within areas of hemorrhage, vessel walls are occasionally hyalinized and contain transmigrating lymphocytes, extruded brightly eosinophilic protein and polymerized fibrin, and cellular debris (vasculitis) **(1pt)**. The meninges as well as Virchow-Robin spaces are expanded by low to moderate numbers of lymphocytes **(1pt)** of variably nuclear size and fewer histiocytes **(1pt)**, hemorrhage, edema, and small amounts of fibrin. There is segmental loss of Purkinje cells, and in areas of acute hemorrhage, Purkinje cells range from swollen with vacuolated cytoplasm (degenerate) to shrunken and brightly eosinophilic with nuclear pyknosis (necrosis) **(1pt)**. In these areas of hemorrhage, there is also loss of neurons within the granular cell layer, and infiltration of macrophages which are often laden with phagocytized erythrocytes, and edema. There is moderate gliosis of the molecular layer with increased numbers of reactive microglia and low numbers of infiltrating histiocytes and lymphocytes.

Trachea: There is segmental necrosis and loss of ciliated respiratory epithelium **(1pt)**. The epithelium is infiltrated by moderate numbers of lymphocytes and viable and degenerate neutrophils. The submucosa is congested, edematous, and contains multifocal acute hemorrhage and diffusely infiltrated by low numbers of lymphocytes of variable nuclear size and fewer histiocytes. **(1pt)** Medium and large caliber vessels are often surrounded by lymphocytes and few neutrophils and occasionally the walls are expanded by lymphocytes, extruded protein and cell debris (vasculitis) **(1pt)** There is diffuse necrosis of submucosal gland epithelium **(1pt)** and glands are often infiltrated by low to moderate numbers of viable and degenerating neutrophils as well as lymphocytes. **(1pt)**

**MORPHOLOGIC DIAGNOSIS:** 1. Cerebellum: Vasculitis **(1pt)**, necrotizing **(1pt)** and lymphocytic, multifocal, moderate, with hemorrhage, neuronal degeneration and necrosis, and diffuse lymphohistiocytic meningitis.

2. Trachea: Vasculitis, necrotizing and lymphocytic **(1pt)**, diffuse, moderate, with mucosal and submucosal gland necrosis. **(1pt)**

**CAUSE:** *Ovine herpesvirus-2* **(2pt)**

**NAME THE DISEASE:** Malignant catarrhal fever **(1pt)**

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

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Case 2. Tissue from an aborted fetus.

**MICROSCOPIC DESCRIPTION:** Thymus **(1pt.)**: The thymic medulla **(1pt.)** is expanded by large numbers of epithelioid macrophages **(1pt.)** with abundant amphophilic granular cytoplasm, admixed with few lymphocytes, plasma cells, and rare eosinophils. Macrophages often contain cellular debris **(1pt.)** and occasionally erythrocytes or hemosiderin. The thymic cortex **(1pt.)** demonstrates marked lymphocyte depletion **(1pt.)** and many lymphocytes are karyorrhectic **(1pt.)**. There are numerous tingible body macrophages within the thymic cortex. **(1pt.)** There is multifocal thymic hemorrhage **(1pt.)** involving both the cortex and medulla of thymic lobules and interlobular connective tissue is edematous. **(1pt.)**

**Heart:** A section of myocardium and valve is submitted. The endocardium is mildly thickened by an infiltrate of numerous macrophages **(1pt.)** and fewer lymphocytes **(1pt.)** and plasma cells. Similar infiltrates are scattered throughout the myocardium, primarily in perivascular areas **(1pt.)**, and also expands mildly the epicardium were also infiltrates pericardial fat. Pericardial fat is present in adequate amounts.

**MORPHOLOGIC DIAGNOSIS:** 1. Thymus: Thymitis, granulomatous (histiocytic OK) **(1pt.)**, diffuse, marked, with marked lymphoid depletion **(1pt.)**.

2. Heart: Pancarditis **(1pt.)**, granulomatous (lymphohistiocytic OK)**(1pt.)**, diffuse, mild.

**CAUSE:** *Pajaroellobacter abortibovis* **(2pt.)**

**NAME THE DISEASE:** Epizootic bovine abortion (foothill abortion) **(1pt.)**

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

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Case 3. Tissue from a mouse.

**MICROSCOPIC DESCRIPTION:** Subcutaneous tissue ventral to ear canal with variable amounts (slide variation here) of brown fat, salivary gland, and lymph node, and bone **(1pt)**: Effacing the subcutaneous tissue, and infiltrating and replacing salivary gland and lymph node, are multiple variably discrete pyogranulomas **(2pt)**. Pyogranulomas are centered on large colonies of cocci **(1pt)** which are enmeshed within a brightly eosinophilic granular club-shaped material **(1pt)** (Splendore-Hoeppli material) **(1pt)**, and shards of a brightly eosinophilic crystalline material are occasionally seen **(1pt)**. Surrounding these islands are innumerable degenerate neutrophils **(1pt)** and fewer macrophages admixed with abundant cellular debris **(1pt)**. Peripherally in turn are moderate numbers of large macrophages **(1pt)** who cytoplasm often contained cellular debris and degenerate neutrophils. Even more peripherally, macrophages are enmeshed in circumferential bands of mature collagen and robust fibroblasts **(1pt)** which subdivide the granulomas. The adjacent lymph node is approximately 50% replaced by sheets of macrophages with granular eosinophilic cytoplasm **(1pt)**; similar cells multifocally infiltrate the adjacent lymph node salivary gland **(1pt)**. There is marked granulocytic hyperplasia in the marrow spaces of bone within the section.

**MORPHOLOGIC DIAGNOSIS:** Subcutis: Cellulitis, pyogranulomatous **(1pt)**, focally extensive, severe with numerous colonies of cocci **(1pt)** and Splendore-Hoeppli material **(1pt)** with mild to moderate pyogranulomatous lymphadenitis and sialoadenitis.

**NAME THE CONDITION:** Botryomycosis **(1pt)**

**CAUSE:** *Staphylococcus aureus* **(2pt)**

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

Case 4. Tissue from a rat.

MICROSCOPIC DESCRIPTION: Zymbal's gland **(2pt)**: Effacing 85% of the normal gland **(1pt)** and extending into the adjacent subcutaneous tissue, there is a poorly-circumscribed, expansile, moderately cellular, multilobular and cystic neoplasm. **(1pt)** The neoplasm is composed of polygonal epidermal cells which form thick papillary projections into the central cystic area and recapitulates normal epidermal maturation **(1pt)** with a basal, spinous, granular, and keratinizing layers. In other areas, squamous epithelium forms invaginations which recapitulate dilated ducts. Cells of all layers are someone larger than that seen in the normal epidermis. At one edge of the neoplasm, there is a focal area of sebaceous differentiation **(1pt)** with well-formed adenomeres. **(1pt)** Mitotic figures are rare **(1pt)**, to include the basal layer of epithelium. The central cystic area and invaginations within the proliferating epithelium are filled with flocculent sebum **(1pt.)** abundant keratin debris **(1pt)**, innumerable degenerate neutrophils which often form pustules **(1pt)** within the keratin layer and cellular debris. There is multifocal ulceration **(1pt)** of the epithelium and transmigration of viable and degenerate neutrophils into all layers of the proliferating epidermis **(1pt)** and down into the fibrovascular core. Neoplastic epithelium covers a markedly edematous **(1pt)** fibrovascular core which contains low to moderate numbers of neutrophils. In areas of the tumor where the squamous epithelium is ulcerated, the underlying fibrovascular tissue is expanded by large numbers of macrophages **(1pt)** and fewer neutrophils often surrounding small aggregates of displaced keratin, occasionally pools of edema fluid containing few neutrophils, as well as moderate amounts of fibrous connective tissue and plump fibroblasts.

MORPHOLOGIC DIAGNOSIS: Zymbal's gland: Adenoma. **(4pt)**

O/C – **(1pt.)**