WSC 2018-2019 Conference 21.

Case 1. Tissue from a chicken.

MICROSCOPIC DESCRIPTION: Trachea: There is multifocal and segmental ulceration **(1pt)** of the tracheal epithelium, with deciliation, degeneration **(1pt)**, necrosis **(1pt)**, and attenuation **(1pt)** of mucosal epithelium. Multifocally, the nuclei of occasional remaining mucosal epithelial cells are enlarged with a single intranuclear **(1pt)** 3-5um viral inclusion **(2pt)**. There are rare multinucleated viral syncytia **(2pt)** (often sloughed into the lumen) which contain up to ten nuclei, each of which contain a similar inclusion. There is marked congestion and expansion of the underlying submucosa by moderate numbers of heterophils **(1pt)**, fewer histiocytes and lymphocytes, and small amounts of cellular debris, and in deeper areas, edema **(1pt)**. The lumen of the trachea contains moderate amounts of hemorrhage **(1pt)**, fibrin, and enmeshed large viral syncytia as previously described.

MORPHOLOGIC DIAGNOSIS: Trachea: Tracheitis, necrotizing **(1pt)** and heterophilic **(1pt)**, moderate with multifocal ulceration, epithelial intranuclear viral inclusion bodies **(1pt)** and viral syncytia **(1pt)**.

CAUSE: Gallid herpesvirus-1 **(3pt)**

CONDITION: Infectious Laryngotracheitis

O/C: (1pt)

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Case 2 Tissue from a chicken

MICROSCOPIC DIAGNOSIS:

Liver. There are randomly **(1pt)** scattered areas of loss of hepatocellular architecture with disassociation of hepatocytes. **(1pt)** Within this areas, hepatocytes have lost differential staining **(1pt)**, and are variably swollen and shrunken**(1pt)** with hypereosinophilic granular **(1pt)** cytoplasm and indistinct cell borders. Nuclei are shrunken and hyper chromatic (pyknotic) or fragmented (karyolytic) - necrosis. Areas of necrosis are bordered by swollen degenerating hepatocytes characterized by expanded outlines, large intracytoplasmic vacuole **(1pt)**s, and occasional cytosegresomes **(1pt)**. Hepatocytes throughout the remainder of the section, even in less affected areas contain numerous discrete cytoplasmic vacuoles. **(1pt)**There are rare heterophils and macrophages within areas of necrosis. **(1pt)** These degenerative changes are seen in many of the hepatocytes throughout the slides. Throughout the slides, many hepatocytes contain variably sized eosinophilic to basophilic **(1pt)** intranuclear **(1pt)** viral inclusions **(1pt)** which occasionally fill and expand **(1pt)** the nucleus, resulting in peripheralization of chromatin (adenoviral inclusions). Sublobular veins occasionally contain partially occlusive fibrinocellular thrombi, and portal areas contain moderate numbers of lymphocytes and plasma cells. There is hemorrhage between the hepatopertoneal sac and the hepatoperitoneal sac.

MORPHOLOGIC DIAGNOSIS: Liver Hepatitis, necrotizing **(1pt)**, multifocal to coalescing, random, **(1pt)** moderate with numerous intranuclear viral inclusions **(1pt)**.

Cause: Fowl adenovirus, *Aviadenovirus*, Avian adenovirus type 1 **(1pt)**

NAME THE DISEASE : Inclusion body hepatitis **(1pt)**

NAME ANOTHER POSSIBLY AFFECTED ORGAN: Heart (hydropericardium) **(1pt)**

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

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Case 3.Tissue from a duck.

Microscopic Description

Crop (Esophagus OK). There are multifocal randomly **(1pt)** scattered areas of full thickness necrosis of the mucosa **(1pt)** (ulceration OK) which are scattered along the length of the section and measure up to 1 centimeter in length. These areas of necrosis are covered by a brightly eosinophilic serocellular crust **(1pt)** containing numerous degenerate heterophils **(1pt)**, hemorrhage, fibrin, cellular debris, bacterial colonies and rare yeasts. At the edges of these areas of necrosis, the mucosa is often detached **(1pt)** from the underlying mucosa, and here contains small clusters of epithelial cells exhibiting ballooning degeneration **(1pt)**, some of which contain a small 2-4 brightly eosinophilic intranuclear viral inclusions **(1pt)**. Even more rare are cells with a well-defined 2-4um eosinophilic cytoplasmic inclusion **(1pt)**. Rare viral syncytia **(1pt)**, in which some nuclei contain a viral inclusion as previously described are present within sloughed epithelium. The underlying mucosa, especially subjacent to areas of mucosal necrosis, is moderately edematous **(1pt)** and contains low to moderate numbers of heterophils **(1pt)**, and fewer histiocytes **(1pt)**. The lining of scattered salivary gland ducts is often necrotic **(1pt)** and there is marked congestion of vessels lining the ducts.

MORPHOLOGIC DIAGNOSIS: Crop: Ingluvitis, necrotizing **(1pt)**, multifocal, moderate, with rare mucosal epithelial intranuclear **(1pt)** and intracytoplasmic **(1pt)**viral inclusions and viral syncytia. **(1pt)**

CAUSE: Anatid herpesvirus-1**(1pt)**

NAME THE DISEASE: Duck viral enteritis, duck plague **(1pt)**

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

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Case 4. Tissue from a chicken.

Gonad. This section contains sections of normal adrenal gland **(1pt.)** and an intersex gonad. **(1pt.)** The gonad is composed of approximately 60% ovary and 40 percent testicular tissue. Ovarian tissue is predominantly stroma **(1pt.)**, and follicles are markedly diminished in number **(1pt.)** with primordial **(1pt.)** and atretic follicles predominating. There are several primary **(1pt.)** follicles, one small yellow follicle **(1pt.)** and one stalked large white follicle **(1pt.)**. There are focal areas in which the stroma is infiltrated and replaced by aggregates of lipid laden macrophages **(1pt.)** (presumably an area of follicular regression). Forming a large 0.5cm oviod structure at one edge of the section as well as diffusely scattered among the ovarian stroma and remaining follicles, **(1pt.)** there are well-formed seminiferous tubules **(1pt.)**. These tubular are moderately atrophic **(1pt.)**, with undulant basement membranes as well as a lack of developing sperm. **(1pt.)** Spermatocytes are loosely atranged with a lack of mitotic activity, **(1pt.)** Sertoli cells are decreased in size and height **(1pt.)**, and the lumens contain multinucleate giant cell spermatids **(1pt.)** and small numbers of apoptotic spermatocytes.

MORPHOLOGIC DIAGNOSIS: Ovotestis **(3pt.)**

O/C – **(1pt.)**