WSC 2016-2017, Conference 6

Case 1. Tissue from a duck

MICROSCOPIC DESCRIPTION: Transverse section of heart: The epicardium **(1pt.)** is markedly expanded by multiple, often linear **(1pt.)** heterophilic granulomas **(2pt.)**. The granulomas are centered on abundant brightly eosinophilic cellular debris and hyaline protein, **(1pt.)** admixed with degenerate hetrophils **(1pt.)**, aggregated clusters of macrophages, and erythrocytes **(1pt.)**. This material is surrounded by a prominent layer of columnar epithelioid macrophages **(1pt.)** with interspersed multinucleated macrophages of the foreign body type **(1pt.)**. The intervening tissues is highly vascularized (granulation tissue) **(1pt.)** and contains numerous heterophils **(1pt.)**, macrophages (many containing phagocytized debris **(1pt.)**, and fewer lymphocytes and plasma cells admixed with moderate numbers of plump fibroblasts, edema, hemorrhage **(1pt.)**, and cellular debris. Endothelial cells within small vessels are markedly hypertrophic. There is marked congestion of vessels throughout the pericardium as well as dilation of lymphatics, and pericardial mesothelium is mildly hypertrophic. There is a focal area of cardiomyocytes subjacent to the pericardium which are contracted, hypereosinophilic, and contain pyknotic nuclei; there is mild hemorrhage from vessels in this area. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Heart, epicardium: Epicarditis **(1pt.)**, heterophilic **(1pt.)** and granulomatous **(1pt.)**, subacute to chronic diffuse, severe, with focal necrotizing cardiomyositis.

CAUSE: Riemerella anatipestifer **(2pt.)**

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

WSC 2016-2017, Conference 6

Case 2. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Cross section of one side of cerebrum at level of hippocampus: Diffusely, the meninges **(2pt.)** are expanded up to 5x normal thickness **(1pt.)** by the presence of numerous 4-6um **(1pt.)** bluish translucent elliptical to concave yeasts **(2pt.)** which are surrounded by a clear capsule ranging up to 10 cm thick **(1pt.)**. These yeasts are surrounded by variable combinations and concentrations of foamy macrophages **(2pt.)**, lymphocytes **(1pt.)**, and fewer plasma cells **(1pt.)** and neutrophils **(1pt.)**, which in many areas are limited to non-existent in number **(1pt.)**. Changes in the underlying grey matter are limited to a multifocal mild gliosis in the immediate submenigeal parenchyma. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Cerebrum: Meningitis **(1pt.)**, granulomatous **(1pt.)**, multifocal to coalescing, moderate with numerous encapsulated yeasts **(1pt.)**.

CAUSE: *Cryptococcus neoformans*. **(2 pt.)**

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

WSC 2016-2017, Conference 6

Case 3. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Spleen: Effacing 95% of the splenic white pulp **(1pt)** and extending into the surrounding red pulp are multiple coalescing nodules of lytic necrosis **(2pt)** , up to 2 mm in diameter, that are composed of abundant eosinophilic cellular and karyorrhectic necrotic debris **(1pt)** and variable amounts of eosinophilic finely beaded fibrillar material (fibrin) **(1pt)** admixed with few lymphocytes, macrophages, and erythrocytes **(1pt)**. The remaining white pulp is moderately hypocellular **(1pt)** and contains lymphocytes with pyknotic to karyorrhectic nucle **(1pt)** admixed with cellular debris. There is hemorrhage, edema, and moderate numbers of neutrophils within the remaining red pulp.**(1pt)**. Multifocally, vessels are lined by plump, reactive endothelial cells, and occasionally contains fibrin thrombi **(1pt)** and necrotic cellular debris within their lumens. Multifocally, the capsule is lined by a disordered single layer of hypertrophic mesothelial cells. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Spleen: Splenitis, necrotizing **(1pt)**, multifocal to coalescing, moderate to severe, with mild lymphoid depletion **(1pt)** and thrombosis **(1pt)**.

CAUSE: *Francisella tularensis* **(3pt)**

Name two other affected organs: Ileum, mesenteric lymph nodes **(2pt)**

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

WSC 2016-2017, Conference 6

CASE 4. Tissue from a coyote.

MICROSCOPIC DESCRIPTION: Haired skin tip of pinna **(1pt)**: Diffusely, the epidermis is thickened up to 0.5mm thick and characterized by marked acanthosis **(1pt)** with rete ridge formation and diffuse severe orthokeratotic and parakeratotic hyperkeratosis **(1pt)** which contains embedded adult arthropods and nymphs. Occupying the keratin layer, and to a lesser extent within the stratum corneum and downward into the stratum spongiosum **(1pt)**, there are numerous adult arthropods **(1pt)** which are ovoid, 200-300 x 100-150 um in diameter **(1pt)**, and possess a spiny chitinous exoskeleton **(1pt)**, jointed appendages **(1pt)**, striated muscle **(1pt)**, a body cavity (hemocoel), and intestinal and reproductive structures. Within the keratin scale, there are numerous intracorneal pustules **(1pt)** containing degenerate neutrophils and eosinophils **(1pt)**, necrotic cellular debris and proteinaceous fluid, as well as bacterial colonies and entrapped plant material. Diffusely the superficial dermis (most prominently the dermal pegs) is mildly edematous and contains low to moderate numbers of lymphocytes, plasma cells, eosinophils and fewer macrophages and neutrophils. **(1pt)** Apocrine glands are mildly dilated and there is a mild to moderate periadnexal and perifollicular infiltrate of lymphocytes and plasma cells. **(1pt)**

Lymph node: There is marked plasmcytosis **(1pt)** of the paracortex, and sinuses contain numerous macrophages containin abundant intracytoplasmic anthracosilicotic pigment.

MORPHOLOGIC DIAGNOSIS: 1. Haired skin: Epidermal hyperplasia and hyperkeratosis **(1pt)**, diffuse, marked, with mild eosinophilic dermatitis **(1pt)** and numerous intracorneal mites **(1pt)**.

2. Lympho node: Hyperplasia, reactive, with marked plasmacytosis.

CAUSE: *Sarcoptes scabiei* var. *canis* **(2pt)**

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