

WSC 2018-2019 Conference 18

Case 1. Tissue from an African Grey parrot.

**MICROSCOPIC DESCRIPTION:** Elastic arteries **(1pt.)**: The arteries are enlarged up to 3mm in diameter **(1pt.)**, characterized by narrowed lumina **(1pt.)**, loss of the internal elastic lamina **(1pt.)**, and a markedly expanded tunica media **(1pt.)**. The tunica media is markedly expanded by large amounts of randomly arrayed and loosely arranged fibrous connective tissue **(1pt.)**, numerous scattered lipid-laden macrophages **(1pt.)** with abundant foamy, microvacuolated cytoplasm (foam cells) **(1pt.)**, numerous acicular cholesterol clefts **(1pt.)**, polymerized fibrin **(1pt.)**, abundant crystalline mineral **(1pt.)**, hyperplastic and disarrayed smooth muscle cells **(1pt.)** and abundant amphophilic cellular debris **(1pt.)**. There is circumferential cartilaginous metaplasia **(1pt.)** within the deepest part of the affected media, and peripherally to this, amphophilic granular cellular debris is present within the interstices between remaining smooth muscle. **(1pt.)** There is marked atrophy of fat within the adventitial tissue. **(1pt.)**

**MORPHOLOGIC DIAGNOSIS:** 1. Elastic artery: Atherosclerosis **(2pt.)**, circumferential, diffuse, severe, with marked mural fibrosis, cartilaginous metaplasia and mineralization.  
2. Elastic artery, adventitial adipose tissue: Atrophy, diffuse, severe. **(1pt.)**

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

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Case 2. Tissue from an orange-winged amazon.

(Not much of a descriptive slide – note the classic changes and move on..)

**MICROSCOPIC DESCRIPTION:** Liver: Scattered randomly **(1pt.)** throughout the section are numerous, occasionally coalescing foci of granulomatous inflammation **(3pt.)** averaging approximately 100um in diameter. These foci are composed of numerous 15-20um **(1pt.)** macrophages **(2pt.)** with distinct cell borders whose cytoplasm is amphophilic **(2pt.)** and contains numerous 2-4um bacilli **(3pt.)**; foci of inflammation contain low numbers of lymphocytes. Occasionally, macrophages contain a granular black pigment **(1pt.)**. Hepatocytes throughout the section have a vacuolated cytoplasm (glycogenosis).

**MORPHOLOGIC DIAGNOSIS:** Liver: Hepatitis, granulomatous (histiocytic – full credit), multifocal to coalescing, marked with numerous intracytoplasmic bacilli. **(3pt.)**

**CAUSE:** *Mycobacterium genevense* (*M. avium-intracellulare*, *M. avium v avium*- full credit **(3pt.)**)

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

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Case 3. Tissue from a blue-eyed cockatoo.

**MICROSCOPIC DESCRIPTION:** Lung: There is diffuse mild to moderate hypercellularity of the lungs **(1 pt)**. The interstitium is expanded by moderate numbers of histiocytes **(1 pt)**, lymphocytes, plasma cells, and heterophils **(1 pt for all the rest)**, multifocally admixed with edema and abundant cellular debris **(1 pt)**. There are numerous small foci of necrosis **(2 pt)** scattered throughout the section, in which necrotic histiocytes are admixed with abundant fibrin and cellular debris. Parabronchi, respiratory atria, and infundibuli often contain hemorrhage, edema, fibrin **(1 pt)**, and rare macrophages, and cellular debris **(1 pt)**. Adjacent to air atria, there are multifocal aggregates of macrophages which contain a granular black pigment (anthracosis) **(1 pt)**. The adventitia surrounding pulmonary arterioles is multifocally loosely arranged (edema) **(1 pt)** and infiltrated by inflammatory cells as previously described. Histiocytes are multifocally expanded by a protozoal schizont **(1 pt)** which contains 8-16 crescentic zoites **(1 pt)** measuring 2x4um **(1 pt)**. The air sac is multifocally expanded by low to moderate numbers of histiocytes, lymphocytes, and plasma cells as well as aggregates of macrophages containing anthracotic pigment. **(1 pt)**

**MORPHOLOGIC DIAGNOSIS:** Lung: Pneumonia, interstitial **(1 pt)**, histiocytic **(1 pt)**, diffuse, moderate with mild multifocal necrosis, and occasional intraendothelial apicomplexanmeronts **(1 pt)**

**CAUSE:** *Sarcocystis sp.* **(2pt.)**

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

(Note: The airway system of the bird goes like this: parabronchi => respiratory atria => infundibulum => air capillaries)

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Case 4. Tissue from a bearded dragon.

**MICROSCOPIC DESCRIPTION:** Scaled skin: The dermis is markedly expanded by numerous discrete granulomas **(1pt.)** which on one side of the biopsy coalesce into a single 0.8 x 0.4 cm area of granulomatous inflammation extending to of the overlying epidermis **(1pt.)** . The granulomas are composed of a central area of brightly eosinophilic cellular debris **(1pt.)** which is surrounded by numerous epithelioid macrophages with amphophilic granular to foamy cytoplasm **(1pt.)** , fewer multinucleated foreign body macrophages **(1pt.)**, and few admixed heterophils and lymphocytes. Granulomas are occasionally bounded by a thin rim of fibroblasts and concentric lamellae of mature collagen. Multifocally, the granulomas are centered on cross- and tangential sections of 3-5µm non-septate **(1pt.)** hyphae **(1pt.)** with parallel walls. The intervening dermis contains scattered fungal hyphae surrounded by one or more macrophages (often multinucleated foreign body type macrophages, as well as variable combinations and concentrations of heterophils **(1pt.)** macrophages and lymphocytes, which often outline capillaries with hypertrophic endothelium. The dermal fibrous connective tissue is multifocally edematous. The overling epidermis contains numerous 2-3 oval arthrospores admixed with fewer fungal hyphae. **(1pt.)**

Liver: Approximately 33% of the section is effaced by coalescing granulomas **(1pt.)** . The center of the inflammatory focus of a central area of brightly eosinophilic cellular debris which is surrounded by numerous epithelioid macrophages with amphophilic granular to foamy cytoplasm fewer multinucleated foreign body macrophages, and few admixed heterophils and lymphocytes. Multifocally, the granulomas are centered on cross- and tangential sections of 3-5µm non-septate hyphae **(1pt.)** with parallel walls. At its periphery, individual granulomas are bounded by a thin rim of fibroblasts and concentric lamellae of mature collagen which contains low to moderate numbers of lymphocytes and plasma cells. Diffusely, hepatocytes are swollen due to the accumulation of large clear lipid vacuoles **(1pt.)** which do not peripheralize the nucleus. In unaffected areas of the liver, vessels contain large numbers of circulating lymphocytes **(1pt.)** .

**MORPHOLOGIC DIAGNOSIS:** 1. Scaled skin: Dermatitis, granulomatous and necrotizing**(1pt.)** multifocal to coalescing, severe, with numerous intra- and extracellular fungal hyphae **(1pt.)** and epidermal arthroconidia.

2. Liver: Hepatitis, granulomatous, focally extensive, severe, with numerous intra- and extracellular fungal hyphae. **(1pt.)**

3. Liver, hepatocytes: Lipidosis, diffuse, severe. **(1pt.)**

**CAUSE:** *Chrysosporium* anamorph of *Nannizziopsis vriesii*: **(2pts)** (*N. guarroi* OK)

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