

WSC 2019-2020 Conference 2.

Case 1. Tissue from an African lion.

(Two sections are submitted on this case.)

**MICROSCOPIC DESCRIPTION:** Cerebrum: There is diffuse marked spongiosis **(1pt)** of the subcortical white matter. The white matter contains numerous dilated myelin sheaths **(1pt)**, some of which contain dilated axons, axonal debris, and/or Gitter cells **(1pt)**. Scattered throughout this area are low numbers of spheroids **(1pt)**. Within the submeningeal grey matter, low numbers of astrocytes **(1pt)** and neurons **(1pt)** contain a single intranuclear 3-5um brightly eosinophilic nuclear viral inclusion **(1pt)**, one or more 2-5um oval intracytoplasmic viral inclusions **(1pt)**, or both. Neurons are occasionally swollen, abutted by one or more astrocytes, and rarely shrunken and eosinophilic with karyorrhectic nuclei (necrosis) **(1pt)**. Within these areas there is a moderate increase in the numbers of activated microglia (gliosis) **(1pt)**. The meninges **(1pt)**, including Virchow Robins spaces are often expanded by low to moderate numbers of lymphocytes **(1pt)** and rare plasma cells and there is mild periventricular edema.

**MORPHOLOGIC DIAGNOSIS:** Cerebrum: Meningoencephalitis, necrotizing **(1pt)** and lymphoplasmacytic **(1pt)**, diffuse, moderate, with marked demyelination **(1pt)**, gliosis, and moderate numbers of neuronal and astrocytic intra-nuclear and intracytoplasmic viral inclusions **(1pt)**.

**CAUSE:** Canine morbillivirus **(3pt.)**

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

Case 2. Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Testis and epididymis: The head of the epididymis is expanded by multiple poorly formed granulomas (**1pt.**) which range up to 1.75mm (**1pt.**) and separate and replace epididymal tubules and markedly expand the epididymal interstitium. The granulomas are centered on free spermatids (**1pt.**) within the interstitial connective tissue which are admixed with abundant cellular debris and rare neutrophils. Within the center of the granuloma are numerous macrophages (and occasionally multinucleated macrophages) (**1pt.**) which have ingested spermatids (**1pt.**) and cellular debris. The wall of the granuloma is lined by numerous epithelioid macrophages (**1pt.**) and more peripherally, moderate numbers of lymphocytes (**1pt.**) and plasma cells (**1pt.**), and most peripherally, large fibroblasts (**1pt.**) separated by small amounts of mature collagen. Remaining epididymal tubules contained decreased amounts of sperm (**1pt.**), and rare sloughed epithelium and macrophages. In an adjacent artery within the head of the epididymis, the endothelium is discontinuous and the tunica intima is infiltrated by moderate numbers of neutrophils (**1pt.**) and fewer macrophages. There is subintimal edema. The tunica media is expanded by moderate numbers of degenerate neutrophils and cellular debris and brightly eosinophilic protein (**1pt.**) (fibrinoid necrosis) (**1pt.**). Smooth muscle cells are multifocally pyknotic or karyorrhectic. The tunica adventitia (**1pt.**) is markedly expanded by large numbers of neutrophils and macrophages, with fewer lymphocytes and rare plasma cells. More peripherally, there are aggregates of moderate numbers of pigment-laden macrophages. Adjacent lymphatics are dilated and contain sperm. Within the testis, here is markedly diminished sperm production (**1pt.**) within seminiferous tubules and rarely, seminiferous tubules contain spermatid giant cells within their lumens.

- MORPHOLOGIC DIAGNOSIS:**
1. Epididymis: Sperm granulomas, multiple. (**1pt.**)
  2. Arteriole, head of the epididymis: Arteritis, necrotizing and granulomatous, chronic, diffuse, moderate. (**2pt.**)
  3. Testis, seminiferous tubules: Atrophy and aspermatogenesis, diffuse, moderate. (**1pt.**)

Name the condition: Polyarteritis nodosa (**2pt.**)

Case 3. Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Eye and eyelid: Extending from the posterior pole of the eye **(1pt.)** and infiltrating and largely replacing orbital adipose tissue **(1pt.)**, there is a partial section of a well-demarcated, unencapsulated, infiltrative, multilobular, and moderately cellular neoplasm. **(2pt.)** The neoplasm is composed of sheets **(1pt.)** and poorly formed streams and bundles of polygonal **(1pt.)** cells on a fine fibrovascular stroma **(1pt.)**. Lobules are separated by variously dense bands of fibrous connective tissue. Neoplastic cells range up to 30um in diameter **(1pt.)**, and have distinct cell borders with abundant densely granular eosinophilic cytoplasm. **(1pt.)** Nuclei are ovoid, often peripheralized, with finely stippled chromatin and 1-2 small basophilic nucleoli and cytoplasmic invaginations are common. **(1pt.)** Mitoses are rare. **(1pt.)** Remnant adipose tissue is scattered throughout the neoplasm, and there is multifocal hemorrhage and siderophages at the advancing edge. At the lateral edges of the globe, there is hemorrhage and the periocular muscles are mildly atrophic with moderate fibrosis in between, which contains aggregates of small to moderate numbers of lymphocytes and plasma cells. Within the globe, the retinal is detached **(1pt.)** and there is subretinal hemorrhage as well as marked hypertrophy of pigmented retinal epithelium. **(1pt.)** There is diffuse pyknosis of neurons within the inner and outer nuclear layers, with edema of all layers. **(1pt.)** The lens is not present in the section. There is multifocal hemorrhage and edema within the ciliary body and iris. Due to the tangential section, filtration angles and the iris leaflets, and the cornea cannot be evaluated. There is moderate lymphocytic inflammation and mild hyperplasia of the conjunctiva of the eyelid. **(1pt.)**

**MORPHOLOGIC DIAGNOSIS:** 1. Retro-orbital tissue: Granular cell tumor. **(3pt)**  
2. Eye: Retinal detachment and atrophy with diffuse severe ganglion cell loss. **(1pt.)**  
3. Eyelid: Conjunctivitis, lymphoplasmacytic, chronic, diffuse, mild.

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

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Case 4. Tissue from a dog

MICROSCOPIC DESCRIPTION: Mucosa-lined tubular organ. Within the submucosa, extending to and elevating the overlying partially ulcerated mucosa, there is a multilobulated, unencapsulated, infiltrative, well-demarcated, moderately cellular neoplasm **(2pt.)**. Neoplastic epithelial **(1pt.)** cells are arranged in nests and packets **(1pt.)** as well as trabeculae **(1pt.)** on a fine fibrovascular stroma **(1pt.)**, and often form rosettes **(2pt.)**. Variably dense bands of fibrous connective tissue divide the mass into lobules, and plump fibroblasts within loosely arranged collagen border some areas of infiltration. **(1pt.)** Neoplastic cells have indistinct cell borders and a low to moderate amount of homogenous eosinophilic cytoplasm. **(1pt.)** Nuclei are oval, with finely clumped chromatin and an average of 3 small basophilic nuclei. **(1pt.)** Mitoses are rare. **(1pt.)** At the mucosal surface, rafts of neoplastic cells are occasionally present within lymphatics. **(1pt.)** There are numerous aggregates of moderate numbers of lymphocytes and few plasma cells within fibrous bands and in perivascular locations. **(1pt.)**

MICROSCOPIC DIAGNOSIS: This is a tough one to identify the tissue, so I'm taking clitoral gland adenocarcinoma, (which this is) but also giving full credit for carcinoma of the apocrine glands of the anal sac. **(5 pt.)**

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