

WSC 2021-2022

Conference 14, Case 1.

Tissue from a sheep.

**MICROSCOPIC DESCRIPTION:** Mammary gland **(1pt)**: 66% of the acini within the section are infiltrated by large numbers of neutrophils **(1pt)** and lymphocytes **(1pt)** and fewer numbers of macrophages **(1pt)** and plasma cells. Inflammatory cells are primarily located within the interacinar interstitial tissue **(1pt)**, but often infiltrate acini. Interstitial connective tissue is mildly expanded by additional fibrous connective tissue and plump fibroblasts. **(1pt)** In areas of inflammation, acinar secretory epithelium demonstrates one of the following: loss of lipid vacuoles **(1pt)**, swelling and vacuolation (degeneration) **(1pt)**, pyknosis, karyolysis, and sloughing into the lumen (necrosis) **(1pt)**, where they are admixed with inflammatory cells as previously described and cellular debris. Inflamed glands are shrunken and lack secretory material within their lumina. **(1pt)** In the adjacent glands with secretory material, the secretory material contains large numbers of macrophages **(1pt)** and fewer neutrophils and small amounts of cellular debris. Within the interlobular septa, there are low to moderate numbers of lymphocytes and plasma cells within perivascular areas. **(1pt)**

**MORPHOLOGIC DIAGNOSIS:** Mammary gland: Mastitis **(1pt)**, lobular, lymphohistiocytic **(1pt)** and neutrophilic **(1pt)**, multifocal to coalescing, moderate with glandular necrosis and loss. **(1pt)**

**CAUSE:** Small ruminant lentivirus **(3pt)**

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

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Conference 14, Case 2.  
Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Testis: Effacing 90% of testicular architecture, filling seminiferous tubules **(1pt.)** and expanding into the interstitium and focally infiltrating the tunics, there is an unencapsulated, infiltrative, densely cellular round cell neoplasm. **(1pt.)** Neoplastic germ cells **(1pt.)** are arranged in sheets **(1pt.)** on the variably dense pre-existent fibrous stroma. Neoplastic cells are round with distinct cell borders and a moderate amount of granular basophilic cytoplasm. **(1pt.)** Nuclei are round with finely clumped chromatic and 1-3 large eosinophilic nucleoli. **(1pt.)** There is mild to moderate anisokaryosis **(1pt.)** and anisocytosis, and frequent apoptosis. Mitoses average 5- 6 per 2.37mm<sup>2</sup> field. **(1pt.)** The few remaining tubules that are not effaced by the neoplastic germ cells are devoid of spermatogonia and developing spermatids, lined by a single layer of Sertoli cells, and often have an undulant basement membrane. **(1pt.)** Interstitial cells are inapparent. Epididymal tubules are devoid of spermatozoa. There are fibrous papillary tags **(1pt.)** projecting from the vaginal tunics and lining and expanding the spermatic cord. These fibrous tags contain numerous lymphocytes, plasma cells and scattered poorly formed pyogranulomas **(1pt.)** centered on 10-30um yeasts **(1pt.)** with a 1-2um hyaline cell wall and granular basophilic cytoplasm with endospores **(1pt.)**. Yeasts are surrounded by low to moderate numbers of viable neutrophils and in turn, epithelioid macrophages, lymphocytes and plasma cells enmeshed in thin lamellae of collagen and fibroblasts.

**MORPHOLOGIC DIAGNOSIS:** 1. Testis: Seminoma. **(2pt.)**

2. Testis, seminiferous tubules: Atrophy and aspermatogenesis, diffuse, severe. **(1pt.)** **(This is actually a cryptorchid testicle, so hypoplasia is probably a better choice, but atrophy is ok).**

3. Testis, vaginal tunics and spermatic cord: Funisitis and periorchitis **(1pt.)**, granulomatous **(1pt.)**, diffuse, moderate with endosporulating yeasts **(1pt.)**, etiology consistent with *Coccidioides immitis*.

**CAUSE:** *Coccidioides immitis* **(1pt.)**

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Case 3. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Liver: Effacing 40% of the submitted section of liver, there is a well-demarcated, unencapsulated, moderately cellular infiltrative neoplasm. **(1pt)** The neoplasm is arranged in nests and packets **(1pt)** on a fine fibrovascular stroma. **(1pt)** Neoplastic cells are round with indistinct cell borders and a moderate amount of finely granular eosinophilic cytoplasm. **(1pt)** Nuclei are irregularly round with coarsely clumped chromatin and 1-2 small basophilic nucleoli. **(1pt)** There is moderate anisokaryosis and anisocytosis **(1pt)**, with occasional apoptosis. Mitoses average 4-5 per 2.37mm<sup>2</sup> field. **(1pt)** The neoplasm is surrounded by a dense area of fibrosis which effaces hepatocellular architecture and extends at its periphery along portal areas. **(1pt)** There are numerous scattered macrophages, lymphocytes and plasma cells and fewer eosinophils and neutrophils embedded in the fibrotic area, which markedly increase in number at its periphery. **(1pt)** There are numerous lipogranulomas composed of aggregates and dispersed lipophages **(1pt)** with vacuolated brown cytoplasm admixed with lymphocytes plasma cells, and eosinophils which border, infiltrate and isolate the adjacent remnant hepatocytes, and Ito cells **(1pt)** are prominent within these areas. Adjacent to the neoplasm, portal areas are markedly expanded by fibrosis **(1pt)** which encroaches on adjacent hepatocellular plates, and there is marked ductular reaction (biliary hyperplasia.) **(1pt)** There is marked acute congestion of sinusoids, and lymphatics around sublobular veins are markedly dilated (edema). **(1pt)** There is diffuse subcapsular hepatocellular atrophy and edema. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Liver: Transmissible venereal tumor (neuroendocrine carcinoma OK as well – the preservation of the cells is suboptimal). **(4pt)**.

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

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Case 4. Tissue from an equine fetus.

**MICROSCOPIC DESCRIPTION:** Heart: There is multifocal to coalescing interstitial **(1pt.)** infiltrates, most often in perivascular areas, **(1pt.)** of small to moderate numbers of macrophages **(1pt.)**, lymphocytes **(1pt.)** and plasma cells. Within these areas, myofibers occasionally exhibit a range of changes, including nuclear hypertrophy, hypereosinophilia **(1pt.)**, shrinkage **(1pt.)**, fragmentation, loss of cross striations, pyknosis, and karyorrhexis. Occasionally, in vessels of all sizes, there is necrosis of endothelium and/or smooth muscle cells and infiltration of low numbers of macrophages and lymphocytes into the vessel wall (vasculitis), as well as perivascular edema **(1pt.)** and hemorrhage. There is mild to imaginary interstitial edema within inflamed areas (be very careful with this interpretation in fetal tissues). Similar inflammatory infiltrates multifocally are present within both the endocardium and epicardium. **(1pt.)**

Lymph node: There is diffuse moderate but disorganized hyperplasia **(1pt.)** of the paracortex with lack of follicle formation and numerous scattered tingible body macrophages **(1pt.)**. There are numerous plasma cells within the medullary cords. The cortical and medullary sinuses are expanded by large numbers of macrophages, hemorrhage, and small amounts of polymerized fibrin; numerous macrophages contain erythrocytes within their cytoplasm. **(1pt.)** Vessels of all sizes within the node and the surrounding perinodal fat are surrounded by low to moderate numbers of macrophages, lymphocytes, and rare neutrophils and plasma cells, **(1pt.)** and their walls are rarely infiltrated by similar cells where they are admixed with small amounts of cellular debris (vasculitis) **(1pt.)**. Multifocally, the perinodal fat is infiltrated by low to moderate numbers of neutrophils admixed with cellular debris.

**MORPHOLOGIC DIAGNOSIS:**1. Heart: Pancarditis **(1pt.)** and periarteritis, lymphohistiocytic **(1pt.)**, multifocal to coalescing, severe, with multifocal myofiber degeneration, necrosis **(1pt.)**, and loss and lymphohistiocytic vasculitis and perivasculitis

2. Lymph node: Reactive hyperplasia **(1pt.)**, diffuse, mild to moderate with medullary plasmacytosis and lymphohistiocytic vasculitis and perivasculitis **(1pt.)**

3. Perinodal fat: Steatitis, necrotizing, multifocal, mild.

**CAUSE:** *Neorickettsia risticii* **(2pt.)** (If you got this one, bravo! Me, I just added a new one to my differential diagnosis for myocarditis in an abortus.)