WSC 2016-2017, Conference 17

Case 1. Tissue from a pigtail macaque.

MICROSCOPIC DESCRIPTION: Testis: Within a focally extensive area comprising approximately 40% of the section **(1pt.)** , immature (aspermatogenic) **(1pt.)** seminiferous tubules which have variably lost differential staining characteristics but maintained their architecture **(1pt.)** (coagulative necrosis) **(1pt.)**. Within this areas, seminiferous tubules are lined by remnant Sertoli cells which are often granular and range from basophilic to strongly eosinophilic**(1pt.)**, and the interstitium is expanded by multifocal hemorrhage, edema and contains moderate numbers of degenerate neutrophils admixed with cellular debris. **(1pt.)** Blood vessels within this area multifocally are brightly eosinophilic, contain necrotic debris within their walls, and their lumina are occluded by fibrin thrombi (fibrinoid necrosis) **(1pt.)**. Within less affected lobules of immature seminiferous tubules, the intertubular connective tissue contains rare neutrophils and small amounts of cellular debris. **(1pt.)** Sertoli cells, fibroblast, and endothelial cell nuclei **(1pt.)** within this area rarely contain a single basophilic 3-5um viral intranuclear inclusion **(2pt.)** which enlarges the nucleus. At one edge of the section, the vaginal tunics as well as the cremaster muscle are fused **(1pt.)** and are markedly expanded by abundant collagen **(1pt.)**, numerous plump fibroblasts, neovascularization, low numbers of histiocytes, siderocytes, neutrophils, and lymphocytes.

MORPHOLOGIC DIAGNOSIS: Testis: Necrosis, coagulative, **(1pt.)** focally extensive, severe, with vascular thrombosis, fibrinoid necrosis **(1pt.)**, chronic periorchitis **(1pt.)** and adhesion formation, and intranuclear viral inclusions **(1pt.)**.

CAUSE: *Cytomegalovirus* **(2pt.)**

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

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Case 2. Tissue from a guinea pig.

MICROSCOPIC DESCRIPTION: Haired skin: Expanding the dermis and effacing the overlying epidermis **(1pt.)**, there is an exophytic, infiltrative, moderately cellular, unencapsulated, well-demarcated neoplasm **(2pt.)**. Neoplastic cells are arranged in sheets **(2pt.)** on a pre-existent fine fibrovascular stroma **(1pt.)**. Cells have indistinct borders with a moderate amount of a finely granular eosinophilic stroma **(2pt.)**. Nuclei are irregularly round with 1-3 prominent eosinophilic nuclei **(1pt.)**, and there is mild anisokaryosis and anisocytosis. Mitotic figures average 1-2 per 400X field. **(2pt.)** There are extensive areas of confluent necrosis **(2pt.)** and hemorrhage scattered throughout the neoplasm, and the surface is ulcerated and necrotic **(1pt.)**. The underlying dermis and panniculus is hypercellular with prominent small-caliber vessels and a population of moderate numbers of macrophages, lymphocytes and fewer neutrophils and plasma cells (granulation tissue). **(1pt.)**. The adjacent epidermis is mildly hyperplastic and hyperkeratotic and multifocally eroded..

MORPHOLOGIC DIAGNOSIS: Haired skin: Melanoma **(4pt.)**

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

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Case 3. Tissue from a cynomolgus macaque.

MICROSCOPIC DESCRIPTION: Lymph node: Approximately 50% of the diffusely hyperplastic node is effaced by several well-defined granulomas **(2pt.)**. These granulomas are composed of a central, occasionally mineralized **(2pt.)** core of amorphous eosiniophilic cellular debris **(2pt.)** which contains few degenerate neutrophils. **(2pt.)** The core is surrounded by a thick layer of epithelioid macrophages **(2pt.)** ranging up to 75um with abundant vacuolated cytoplasm interspersed with low numbers of lymphocytes and neutrophils, which contains low numbers of multinucleated giant cell macrophages of the Langhans **(1pt.)** and foreign body types **(1 pt.)**. At the periphery, the most centrifugal macrophages and several layers of adjacent lymphocytes are surrounded and separated by lamellations of fibrous connective tissue. **(1pt.)** The normal follicular architecture of the node is effaced by a diffuse marked lymphoid hyperplasia **(1pt.)** which markedly expands the paracortex, fills sinues, and focally extends into the surrounding perinodal tissue. Multifocally, within the sinuses of the unaffected nodes, macrophages contain moderate amounts of a finely granular black pigment (anthracosilicosis). **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Lymph node: Lymphadenitis, granulomatous **(2pt.)**, multifocal, moderate with diffuse marked paracortical hyperplasia. **(1pt.)**

CAUSE: *Mycobacterium tuberculosis* **(2pt.)**

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

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CASE 4. Tissue from a rat.

MICROSCOPIC DESCRIPTION: Testis: Effacing 80% of the testicular parenchyma and compressing adjacent atrophic seminiferous tubules is a multilobular, well demarcated, expansile, vaguely nodular, moderately cellular neoplasm **(2pt)** composed of nests and packets **(1pt)** of polygonal cells supported by a fine fibrovascular stroma. Neoplastic cells have variably distinct cell borders, abundant eosinophilic vacuolated cytoplasm **(1pt)**, round to oval nuclei with finely stippled chromatin and one variably distinct nucleolus **(1pt)**. Cells at the periphery of the lobules are smaller with scant cytoplasm and hyperchromatic nuclei **(1pt)**. Mitoses average less than 1 per 10 HPF **(1pt)**. The remaining seminiferous tubules are atrophied **(1pt)**, rarely ectatic, lined by a single layer of Sertoli cells, devoid of germ cells, and contain variable amounts of a fibrillar to homogeneous eosinophilic material **(1pt)**. Seminiferous tubules are widely separated by clear space (edema) **(1pt).** Epididymal tubules are devoid of sperm, and there is multifocal cribiform change within the lining epithelium, with degenerating cells possessing numerous grey discrete vacuoles in the cytoplasm. Multifocally extending from the tunica vaginalis and elevating the epididymis, there is a second neoplasm composed of arborizing papillary projections **(1pt)** lined by cuboidal cells that occasionally pile up two to three cell layers thick **(1pt)** on a variably dense collagenous connective tissue core. Neoplastic cells have variably distinct cell borders, small amounts of homogenous to finely granular eosinophilic cytoplasm **(1pt)**, round to oval nuclei with finely stippled chromatin and a single distinct nucleolus **(1pt)**. Mitoses average less than 1 per 10 HPF **(1pt)**. There is mild anisocytosis, few infiltrating hemosiderin-laden macrophages and mast cells, and moderately ectatic lymphatics.

MORPHOLOGIC DIAGNOSIS: 1. Testis: Interstitial cell tumor. **(2pt)**

2. Testis, vaginal tunics: Mesothelioma **(2pt)**

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