

WSC 2013-2014, Conference 10

Case 1. Tissue from a cynomolgus monkey.

MICRSCOPIC DESCRIPTION: Skull, adjacent to nasal cavity: Effacing lamellar bone **(1pt)** of the skull, and infiltrating the periosteum **(1pt)** as well as infiltrating the perineurium and nerve fibers of a cranial nerve, there is an unencapsulated **(1pt)**, well-demarcated, infiltrative **(1pt)**, densely cellular neoplasm. The neoplasm is composed of polygonal cells **(1pt)** arranged in nests, packets and streams **(1pt)** on a fine fibrovascular stroma, and rarely, cells form rosettes **(1pt)**. Neoplastic cells have indistinct cell borders, and a small amount of a homogenous eosinophilic cytoplasm **(1pt)**. Nuclei are irregularly round to oval **(1pt)** with finely stippled chromatin and 1-2 small basophilic nucleoli. **(1pt)** Mitotic figures average 3-5 per 400X field **(1pt)**. There are numerous apoptotic cells **(1pt)** throughout the mass, and multiple areas of hemorrhage and necrosis **(1pt)**. The lamellar bone of the nasal bone and paranasal sinus is undergoing resorption **(2pt)**, with markedly scalloped edges.

MORPHOLOGIC DIAGNOSIS: Skull, nasal cavity and paranasal sinus: Olfactory neuroblastoma (esthesioneuroblastoma) **(4pt)**. (Primitive neuroectodermal tumor – 3pt.)

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

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Case 2. . Tissue from a 1-day-old chicken.

(Note – this is another very difficult slide to evaluate, due to a) variation in sections – my section for example had no brainstem and a thin strip of cerebellum, and b) the fact this is from a 1-day-old chick. Because there is still development going on here (not the prominent cerebellar germinal layer and the diffuse hypercellularity and poor laminarity of the brain, without having an aged-matched control, it is very difficult to really get a handle on what is going on here.

I have elected not to grade out this slide as I have found only one lesion which I think is real, and the changes in the Purkinje cells are questionable at best.

Apologies to any poultry pediatric neuropathologists for my shortcomings.)

MICROSCOPIC DESCRIPTION: Brain, longitudinal section, including cerebrum, cerebellum, and brainstem. Multifocally, large neurons within brainstem and cerebral nuclei and Purkinje cells have decreased amounts of Nissl substance (chromatolysis). Occasionally Purkinje cells are swollen with markedly vacuolated cytoplasm, and are rarely lost.

MORPHOLOGIC DIAGNOSIS: 1. Brain, cerebral and brainstem nuclei and Purkinje cells: Chromatolysis, central, multifocal, mild to moderate.

2. Cerebellum, Purkinje cells: Degeneration, multifocal, mild.

NAME THE DISEASE: Avian encephalomyelitis (AE)

CAUSE: Avian picornavirus

O/C:

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Case 3. Tissue from a pig.

MICROSCOPIC DESCRIPTION: Long bone, marrow: Within the metaphysis, the trilinear marrow is replaced **(1pt)** by an infiltrative, densely cellular, unencapsulated, neoplasm **(2pt)**. The neoplasm is composed of numerous round cells **(1pt)** on a pre-existent stroma. The cells have moderate amounts of cytoplasm with numerous eosinophilic cytoplasmic granules **(2pt)** and distinct cell borders. Nuclei are round **(1pt)**, often centrally located **(1pt)**, and have coarsely stippled chromatin with inapparent nucleoli. There is moderate anisokaryosis **(2pt)**. Mitotic figures are rare. **(1pt)** At the edges of the neoplasm, there is moderate to large amounts of fibrous connective tissue **(1pt)** which replaces marrow and marrow fat **(1pt)**. Within sclerotic areas, there is irregular deposition and resorption of trabecular bone **(2pt)**.

MORPHOLOGIC DIAGNOSIS: Bone marrow: Eosinophilic granulocytic sarcoma (chloroma). **(4pt)**

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

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Case 4. Tissue from an ox.

(Note: This is not a descriptive slide – read below and save your time and ink. Not saying it's a bad entity, just not good for description.)

MICROSCOPIC DESCRIPTION: Sternebra: There is diffuse severe atrophy of all bone marrow elements (erythrocytic, myelocytic, and platelet precursors), with less than 5% erythropoietic marrow remaining. Marrow fat and bone appears within normal limits.

MORPHOLOGIC DIAGNOSIS: Bone marrow: Atrophy, trilinear, diffuse, severe.

NAME THE CONDITION: Bovine neonatal pancytopenia

GIVE A DIFFERENTIAL DIAGNOSIS FOR A POTENTIAL CAUSE: Bovine pestivirus, bracken fern, T-2 mycotoxins all acceptable.