

WSC 2019-2020 Conference 6.

Case 1. Tissue from a cardinal tetra.

MICROSCOPIC DESCRIPTION: Scaled skin, head, face, lips: There is diffuse loss of the epidermis **(1pt.)** but retention of scales) proximal to the anterior aspect of the gill plates. **(1pt.)** The dermis is markedly expanded by edema **(1pt.)**, and infiltrated by modest numbers of degenerate macrophages, lymphocytes, and granulocytes, as well as innumerable haphazardly arranged filamentous bacilli **(1pt.)**, measuring approximately 1x5um **(1pt.)**, admixed with cellular debris. Ulcerated areas extend into the oral cavity as well as the olfactory organ and the hypodermis and skeletal muscle of the face. Skeletal muscle is multifocally vacuolated, hypereosinophilic (degenerate) **(1pt.)**, as well as markedly fragmented and devoid of satellite nuclei (necrosis). **(1pt.)** Fibers are separated by edema, and surrounded by moderate numbers of macrophages **(1pt.)**, granulocytes **(1pt.)**, and lymphocytes **(1pt.)**, as well as moderate amounts of cellular debris and numerous filamentous bacilli.. Ventral to anterior to the stomach, there are several small granulomas centered on cross and tangential sections of larval nematodes. **(1pt.)** Several atretic follicles are present in the ovary.

MORPHOLOGIC DIAGNOSIS: 1. Head: Dermatitis, necrotizing **(1pt.)** and lymphocytic **(1pt.)**, focally extensive, severe, with skeletal muscle degeneration and necrosis **(1pt.)** and innumerable filamentous bacilli. **(1pt.)**

2. Coelom: Granulomas, multiple, with nematode larva.

CAUSE: *Flavibacterium columnare* **(3pt.)**

NAME THE DISEASE: Columnaris disease **(1pt.)**

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

WSC 2019-2020. Conference 6

Case 2. Tissue from a zebrafish.

(This is not a good descriptive slide; find the organism, and move on to the next.... I'm not even going to grade this out for you...)

MICROSCOPIC DESCRIPTION: Sagittal section: Randomly and multifocally within the hindbrain, caudal to the ventricle, there are few microsporidian cysts (sporophorous vesicles) ranging from 25-50um in diameter. The vesicles contain oval spores measuring 5-6um in diameter. There is a minimal gliosis adjacent to some of the sporophorous vesicles. Rarely, within the spinal cord, the cysts are ruptured and small aggregates of macrophages contain few spores within their cytoplasm. Multifocally, within the skeletal muscle of the ventral tail, several myocytes are shrunken, with granular cytoplasm and the myofibers and the interstitium is infiltrated with low numbers of histiocytes and rare granulocytes. There is a minimally expansile focus of swollen hepatocytes within the liver which compress adjacent hepatocytes and have abundant eosinophilic cytoplasm.

MORPHOLOGIC DIAGNOSIS: 1. Microsporidian sporophorus vesicles, multiple.

2. Liver: Focus of eosinophilic alteration.

CAUSE: *Pseudoloma neurophilia*

WSC 2019-2020. Conference 6

Case 3. Tissue from a zebrafish.

MICROSCOPIC DESCRIPTION: Intestine: Approximately 75% **(1pt)** of the section of intestine is infiltrated or effaced by an unencapsulated, moderately cellular, poorly demarcated neoplasm. **(1pt)** Neoplastic cells exhibit a loss of polarity **(1pt)**, efface the traditional villar pattern **(1pt)** forming acini and tubules **(1pt)** (and rare rosettes) within the mucosa and nests and packets **(1pt)** when infiltrating the underlying submucosa, muscularis and adjacent tissues. The acini, which are separated by a moderate fibrovascular stroma, recapitulate crypts to some extent. Neoplastic cells exhibit two different morphologies **(1pt)** – a less common but larger polygonal **(1pt)** cell with abundant vacuolated cytoplasm resembling a mucous cell **(1pt)**, and more numerous, less well differentiated polygonal cells with a small amount of eosinophilic granular cytoplasm. **(1pt)** Both cell types possess small hyperchromatic nuclei **(1pt)** which are often peripheralized within more mature mucous-type cells. Mitoses are rare. **(1pt)** There are low numbers of apoptotic neoplastic cells scattered throughout the section. Within the neoplasm, tubular lumina contain variable combinations and concentrations of neoplastic cells (often of the mucoid type), admixed with abundant cellular debris. **(1pt)** Neoplastic cells multifocally invade the submucosa, muscularis, and are present along the serosa. **(1pt)** The neoplasm is infiltrated by low to moderate numbers of lymphocytes **(1pt)** and fewer heterophils and histiocytes.

MORPHOLOGIC DIAGNOSIS: Intestine: Adenocarcinoma **(4pt)**.

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

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Case 4. Tissue from a Puerto Rican toad.

(Good news – another non-descriptive slide - it's really a combination of "not a lot" to the lesion, as well as most people's unfamiliarity with amphibian skin. You probably should delve into this one if you are into amphibians, but not for improving your descriptive technique.)

MICROSCOPIC DESCRIPTION:

Skin: Multifocally, there are areas of epidermal hyperplasia which measure up to three to five times normal, and are covered with a thick layer of lamellar keratin (which is often torn off as a result of processing.) Multifocal, basal keratinocytes are swollen to 2x normal size with abundant lightly vacuolated cytoplasm, and a large round nucleus with prominent nucleoli (dysplasia.)The basal epithelial cells are multifocally pyknotic, and aggregates of large foamy melanocytes abut the dermoepidermal junction. There is marked expansion of the Eberth-Katschenko layer.

MORPHOLOGIC DIAGNOSIS: Skin: Epidermal hyperplasia and hyperkeratosis, diffuse, marked, with multifocal epidermal dysplasia and expansion of the Eberth-Katschenko layer.

NAME THE CONDITION: Brown skin disease of Puerto Rican crested toads.