

WSC 2013-2014, Conference 4

Case 1. Tissue from a ferret.

(This is not a slide for description. I chose it as you just rarely see this as a cytologic prep. You can probably skip this one; I have graded it out just for fun.)

GROSS DESCRIPTION: Cervical vertebrae (presumably C1-2) **(1pt)** (For orientation, the head has been skinned, with the mandibular rami on the right. The caudal aspect of the hard palate is visible subjacent to the mandibular symphysis.) In the areas of C1 and C-2 there is a multinodular, whitish-gray, pearlescent neoplasm within the ventral epaxial musculature **(1pt)**. Neoplastic nodules vary in size, and appear to be smooth, shiny, and firm. **(1pt)**

CYTOLOGIC DESCRIPTION:

This good-quality paucicellular **(1pt)** aspirate is composed of few clusters **(1pt)** of cells on a background of moderate proteinaceous fluid **(1pt)** and small amounts of blood. Neoplastic cells vary in size from 10um to 75um (marked anisocytosis) **(1pt)**. Small neoplastic cells are round to polygonal **(1pt)** with moderate amounts of dark blue cytoplasm **(1pt)**. The cytoplasm of larger cells is expanded by the presence of numerous clear cytoplasmic vacuoles **(1pt)** at the periphery, and often contains pink cytoplasmic granules **(1pt)** which range up to 5 um (physaliferous cells) **(2pt)**. Cells are often surrounded or separated by a thin rim of a brightly eosinophilic matrix **(1pt)**. Nuclei are irregularly round to oval **(1pt)**, and occasionally indented with ropy chromatin and occasionally one prominent nuclei is visible. Larger cells are often multinucleated **(1pt)**. There is occasional nuclear molding. There are no mitotic figures.

MORPHOLOGIC DIAGNOSIS: Cervical vertebrae: Chordoma **(3pt)**.

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

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Case 2. Tissue from a snake.

MICROSCOPIC DESCRIPTION: Stomach **(1pt)**: The gastric mucosa is diffusely and variable expanded **(1pt)** up to 2mm in diameter, and thrown into broad exaggerated rugal folds **(1pt)**. There is diffuse hyperplasia **(1pt)** of mucus cells, and loss of granular cells **(1pt)** deep within remaining glands, which are replaced by metaplastic **(1pt)** mucous cells. Individual mucus cells are necrotic**(1pt)**, with shrunken, brightly eosinophilic cytoplasm and pyknotic or karyorrhectic nuclei. Rarely, gastric glands are shrunken; lining epithelium is vacuolated (degenerate), necrotic, or attenuated and lumina contain cellular debris and sloughed epithelial cells (crypt abscesses) **(1pt)**. Rarely, affected glands contain single or multiple cells with prominent nuclei and large nucleoli (regenerating epithelium) **(1pt)**. The gastric lamina propria is diffusely expanded by fibrous connective tissue **(1pt)** and edema **(1pt)**, plump fibroblasts, and low numbers of lymphocytes, plasma cells, and neutrophils. Lining both the luminal and glandular mucosal epithelium are moderate numbers of 4-6µm apicomplexan **(1pt)** schizonts **(1pt)**, which are rarely free in the lumen, where they are admixed with small amounts of cellular debris, sloughed epithelial cells and rare neutrophils.

MORPHOLOGIC DIAGNOSIS: Stomach: Gastritis, proliferative, diffuse, moderate, with marked mucus cell hyperplasia and metaplasia, rare mucosal epithelial necrosis, and numerous intraepithelial and luminal apicomplexan schizonts. **(3pt)**

CAUSE: *Cryptosporidium serpentis* **(2pt)**

NAME AN APPROPRIATE SPECIAL STAIN: Acid fast (Kinyoun's etc.) **(1pt)**

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

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Case 3. Tissue from a rabbit.

MICROSCOPIC DESCRIPTION: Kidney: Multifocally within the renal cortex, and extending into the medulla, there are pyramidal rays composed of variable combinations and concentrations of histiocytes **(1pt)**, lymphocytes **(1pt)**, plasma cells **(1pt)** and rare neutrophils which separate, surround, and often replace **(1pt)** renal tubules. The inflammatory infiltrate is admixed with abundant cellular debris **(1pt)** in all areas, and medullary inflammatory aggregates have a higher proportion of histiocytes, and lymphocytes and plasma cells predominating in the cortex. Within these foci, tubules exhibit one or more of the following changes: swollen and vacuolated epithelial cells with indistinct cell borders (degeneration) **(1pt)**; shrunken, hypereosinophilic epithelial cells with nuclear pyknosis, karyorrhexis or loss (necrosis) **(2pt)**; and epithelial cells with increased cytoplasmic basophilia and hypertrophied or vesiculate nuclei, with occasional mitoses (regeneration) **(1pt)**. Tubular lumina contain a mixture of proteinaceous material, cellular and nuclear debris, and sloughed epithelial cells **(1pt)**. Within occasional, admixed with necrotic debris and protein within tubular lumina and adherent to the epithelial brush border, there are numerous 2x3 basophilic free microsporidian **(2pt)** spores **(1pt)**.

MORPHOLOGIC DIAGNOSIS: Kidney: Nephritis, tubulointerstitial, histiocytic and lymphoplasmacytic, chronic, multifocal, moderate, with intratubular microsporidian spores. **(3pt)**

CAUSE: *Encephalitozoon cuniculi* **(2pt)**

NAME AN APPROPRIATE SPECIAL STAIN: Gram stain (BB, BH, etc) **(1pt)**

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

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Case 4. Tissue from a goat.

MICROSCOPIC DESCRIPTION: Mucocutaneous junction (presumably lip) **(1pt)** : There is focally extensive epidermal hyperplasia **(1pt)** with exophytic and papillary growth **(1pt)**, marked acanthosis **(1pt)** and elongated, anastomosing rete ridges **(1pt)**. There is partial to full thickness necrosis **(1pt)** of up to 70% of the epithelium with replacement by a hemorrhagic serocellular crust. Multifocally within the remaining epithelium, primarily within the stratum spinosum, keratinocytes exhibit mild intracellular edema (ballooning degeneration) **(1pt)** and often condensed, pyknotic nuclei. Rarely, keratinocytes contain a single 4-5µm **(1pt)**, round to oval, eosinophilic intracytoplasmic viral inclusion body **(1pt)**. (NOTE: Do not mistake extravasated erythrocytes with inclusion bodies – there are lots of those overlying the epithelium!). Within remaining epithelium the superficial stratum spinosum and stratum corneum, there is neutrophilic exocytosis and multifocal clusters of neutrophils admixed with cellular and karyorrhectic debris, and abundant serum **(1pt)**. There is moderate, multifocal spongiosis of the epidermis and basal epithelial cells are mildly hypertrophic with large nuclei, prominent nucleoli, and scattered mitotic figures. Overlying the ulcerated epidermis is a variably thick serocellular crust **(1pt)** composed of keratin, abundant hemorrhage, serum, degenerate neutrophils, cellular debris, and numerous mixed bacteria. The underlying superficial dermis is expanded by numerous dilated vessels with reactive epithelium, fibrin, hemorrhage, edema, and both diffuse and perivascular dermal infiltrates of many neutrophils and fewer eosinophils, histiocytes, lymphocytes, and plasma cells **(1pt)**. In some areas, there is dermal granulation tissue **(1pt)**.

MORPHOLOGIC DIAGNOSIS: Mucocutaneous junction (presumably lip): Epithelial hyperplasia, diffuse, severe, with marked acanthosis, focally extensive necrosis, ballooning degeneration and rare intracytoplasmic viral inclusions **(3pt)**.

CAUSE: *Ovine parapoxvirus* **(2pt)**

NAME THE DISEASE: Contagious ecthyma **(1pt)**

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

