

WSC 2020-2021

Conference 4, Case 1.

Tissue from a goat.

MICROSCOPIC DESCRIPTION: Small intestine: There is moderate autolysis of the mucosa, which focally extends into the submucosa. Remnant autolytic villi are diffusely blunted. **(1pt)** Diffusely expanding **(1pt)** the remaining mucosal lamina propria, separating, surrounding, and replacing crypts **(1pt)** and extending into the submucosa are large numbers of lymphocytes **(1pt)** and macrophages **(1pt)** with fewer admixed plasma cells, neutrophils, and eosinophils. Macrophages are polygonal and range up to 25um in diameter with abundant granular eosinophilic cytoplasm **(1pt)**. The infiltrate condenses around, expands and often effaces submucosal lymphatics. **(1pt)** There is mild fibrosis of the submucosa and submucosal arteriolar adventitia is surrounded by whorls of small to moderate amounts of collagen. The infiltrate extends through the muscularis into the underlying serosa. Within the serosa and into the adjacent mesentery**(1pt)**, there are numerous granulomas **(2pt)** measuring up to 1.5 mm in diameter which are centered on lymphatics **(1pt)**. The granulomas are composed of a central area of granular eosinophilic cellular debris which is surrounded by a band of basophilic nuclear debris and centrifugally, embedded in concentric layers of collagen, large numbers of epithelioid macrophages **(1pt)** admixed with fewer lymphocytes, neutrophils, and cellular debris. **(1pt)** Lesser affected lymphatics within these areas are markedly dilated and surrounded by low to moderate numbers of macrophages and lymphocytes. **(1pt)** Variable combinations of lymphocytes and plasma cells infiltrate the adjacent serosa and mesentery.

MORPHOLOGIC DIAGNOSIS: Intestine: Enteritis, lymphohistiocytic **(1pt)**, diffuse, severe, with, and granulomatous and caseating lymphangitis **(1pt)**.

CAUSE: *Mycobacterium avium subsp. paratuberculosis* **(3pt)**

O/C - (1pt)

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Conference 4, Case 2.

Tissue from a dog.

MICROSCOPIC DESCRIPTION: Bone and adjacent skeletal muscle. There is marked effacement of the normal bony architecture, with segmental loss of the cortical bone **(1pt)** and lysis of large amounts of medullary lamellar bone **(1pt)**. Separating and surrounding remaining lamellar bone and effacing the marrow are innumerable macrophages, lymphocytes, and plasma cells **(1pt)**, which entrap few remaining megakaryocytes. Scattered randomly throughout the granulomatous infiltrate, are large numbers of poorly-formed granulomas **(1pt)**, ranging up to 400um in diameters, which are composed of numerous epithelioid **(1pt)** and rare foreign-body type macrophages, and more peripherally, small number of lymphocytes and plasma cells enmeshed in concentric lamellae of fibrous connective tissue. **(1pt)** The granulomas occasionally have a necrotic center which contains a 40-75um **(1pt)** diameter spherule **(1pt)** which has a 1-3 um thick double-contoured hyaline wall **(1pt)** and a basophilic flocculent cytoplasm or alternatively numerous 2-5 um round endospores. **(1pt)** There is a diffuse loss of trabecular bone, and remaining fragments have scalloped edges, and few to no lining osteoblasts or osteoclasts **(1pt)** much of the surface area of these fragments is abutted directly by macrophages. In areas of cortical bone loss, the granulomatous inflammation extends into the adjacent skeletal muscle **(1pt)** and adipose tissue, separating muscle fibers. In areas of inflammation, myofibers are often shrunken and hypereosinophilic (atrophy). **(1pt)**

MORPHOLOGIC DIAGNOSIS: Bone: Osteomyelitis, granulomatous, **(1pt)** diffuse, severe, with marked bone lysis **(1pt)** and numerous endosporulating yeasts (spherules). **(1pt)**

CAUSE: *Coccidioides immitis* (*Coccidioides posadasii* OK) **(3pt)**

O/C: (1pt)

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Case 3. Tissue from a white-tailed deer.

MICROSCOPIC DESCRIPTION: Haired skin: Multifocally, clustered hair follicles are markedly expanded up to 1.5mm in diameter **(1pt)** by cross and tangential sections of numerous arthropods **(1pt)**, which are present at all levels of the follicles. The arthropods are 40 to 50 um in diameter **(1pt)**, have a smooth chitinous exoskeleton **(1pt)**, jointed appendages **(1pt)**, bands of striated muscle **(1pt)**, and a reproductive tract. Also within the affected follicles, there are occasional mite eggs **(1pt)** measuring 30 um with a thin shell and numerous granular brightly eosinophilic cytoplasm. **(1pt)**. The follicular epithelium is multifocally and mildly hyperplastic **(1pt)** up to 4-5 cell layers thick. Several follicles are ruptured **(1pt)**, with liberation of mites, hair shafts and keratin debris and debris into the surrounding dermis, where they are surrounded by numerous macrophages **(1pt)** with fewer lymphocytes, eosinophils, and plasma cells. The perifollicular and perivascular dermis **(1pt)** is expanded by moderate numbers of macrophages, lymphocytes and plasma cells, which increase in number in closer proximity to the epidermis. **(1pt)** The overlying epidermis is moderately hyperplastic **(1pt)**, with formation of short rete ridges, and there is diffuse moderate orthokeratotic hyperkeratosis which extends down into the follicular ostia. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Haired skin: Follicular ectasia, diffuse severe, with multifocal dermatitis, folliculitis, and furunculosis, **(1pt)** diffuse, moderate to severe, with numerous intrafollicular mites, nymphs, and eggs. **(1pt)**

CAUSE: *Demodex odocoeli* **(2pt)**

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

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Case 4. Tissue from a serval.

(There is significant slide variation between two sections.)

MICROSCOPIC DESCRIPTION: Urinary bladder **(1pt)**. Extending transmurally **(1pt)** downward from the multifocally hyperplastic, and eroded mucosa, there is an infiltrative, unencapsulated, poorly demarcated, moderately cellular neoplasm. **(1pt)** Neoplastic cells are arranged in nests, trabeculae and glands **(1pt)** on a moderate fibrous stroma **(1pt)**, and infiltrates, separates, surround and replace smooth muscle wall **(1pt)** and spread out multifocally along the serosa. Neoplastic cells have indistinct cell borders with a moderate amount of eosinophilic homogenous cytoplasm. **(1pt)** Occasionally cells have a large clear cytoplasmic vacuole that peripheralizes the nucleus (signet ring cells). **(1pt)** Nuclei are irregularly round, and finely stippled chromatin with 2-3 small basophilic nucleoli. **(1pt)** There is moderate anisokaryosis and anisocytosis **(1pt)**, and the mitotic count is 2-3 per 2.37mm field. **(1pt)** There are large areas of necrosis within the central areas of neoplastic lobules **(1pt)**, and also areas of coagulative necrosis as well as fibrosis within the infiltrated smooth muscle. **(1pt)** There are infiltrates of moderate of lymphocytes **(1pt)** within the submucosa as well as the serosa. (MAJOR CHANGES IN SECTIONS ARE IN THE MUCOSA – In one section, the mucosa is replaced by neoplastic urothelial cells **(1pt)** which form irregular exophytic papillary projections **(1pt)**.) **OR** The mucosa is variably irregular and thrown into polypoid projections **(1pt)** over a mildly edematous submucosa, and there is a focal area of the mucosa in which neoplastic cells pile 7-8 cells thick with a broad non-infiltrative base. **(1pt)**)

MORPHOLOGIC DIAGNOSIS: Urinary bladder: Transitional cell (urothelial) carcinoma, non-papillary, infiltrative (or papillary, infiltrative, based on the section). **(3pt)**

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