

Case 1. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Haired skin: Diffusely, at all levels of the moderately hyperplastic **(1pt)**, hyperpigmented and mildly hyperkeratotic epidermis **(1pt)**, there numerous individual and small groups of eosinophilic, shrunken **(1pt)**, apoptotic **(1pt)** keratinocytes often with one to several lymphocytes and/or neutrophils in close association **(1pt)**. Degenerating keratinocytes exhibit moderate inter- and intracellular edema with peripheralization of nuclei. Within the superficial dermis, there is a marked interface dermatitis **(1pt)** which often obscures the dermo-epidermal junction and consists of large numbers lymphocytes **(1pt)** macrophages, **(1pt)** plasma cells with fewer neutrophils which infiltrate **(1pt)** the epidermis. This infiltrate surrounds follicles and adnexa within the superficial dermis, and infiltrates follicular epithelium as well. There is moderate pigmentary incontinence. Multifocally, follicles contain variable numbers of viable and degenerate neutrophils, and occasionally there is destruction of the follicle with extrusion of hair shafts and keratin debris into the dermis (furunculosis) **(1pt)**. There is marked congestion of superficial epidermal vessels. Expanding the stratum granulosum and elevating the overlying stratum corneum **(1pt)** of the, there are numerous large intraepidermal pustules **(1pt)** which are composed of innumerable degenerate neutrophils **(1pt)** which are admixed with abundant cellular debris, edema fluid, and occasional colonies of cocci. Occasionally, these pustules extend into underlying layers of the epidermis. There is mild diffuse parakeratotic hyperkeratosis. **(1pt)**

MORPHOLOGIC DIAGNOSIS: 1. Haired skin: Dermatitis, interface **(1pt)** and lymphohistiocytic, **(1pt)**, diffuse, moderate, with transepidermal and follicular keratinocyte apoptosis **(1pt)**, diffuse, severe.

2. Haired skin: Dermatitis and furunculosis, suppurative, multifocal to coalescing, severe, **(1pt)** with diffuse moderate ortho-and parakeratotic hyperkeratosis and bacterial cocci.

NAME THE CONDITION: Erythema multiforme/Stevens-Johnson Syndrome/TEM **(2pt)**

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Case 2. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Haired skin and subcutis: Expanding the superficial and deep dermis, extending into the panniculus, and elevating the overlying epidermis **(1pt)** are multiple focally extensive and occasionally coalescing pyogranulomas **(2pt)**. These pyogranulomas are centered on rarely mineralized aggregates of densely packed, amphophilic, 5-10 um wide, septate **(1pt)** fungal hyphae **(1pt)** with thick, nonparallel walls **(1pt)**, rare irregular non-dichotomous branching **(1pt)**, and up to 25 um diameter bulbous swellings **(1pt)**, which are surrounded by radiating, club-shaped amorphous eosinophilic material (Splendore-Hoeppli reaction) **(1pt)** and in turn, numerous neutrophils, fewer macrophages, and extravasated red blood cells. The pyogranulomas themselves are composed of a thick wall of numerous epithelioid macrophages **(1pt)** and viable and degenerate neutrophils, with fewer lymphocytes, plasma cells, occasional multinucleated giant cells **(1pt)**, enmeshed in small amounts of collagen, fibroblasts, and small-caliber blood vessels. At the periphery of pyogranulomas there are follicular-like aggregates of lymphocytes **(1pt)** often in perivascular areas, and surrounding and separating pyogranulomas are is abundant mature fibrous connective tissue (fibrosis). **(1pt)** Multifocally, infiltrating the superficial dermis are low numbers of periadnexal to perivascular lymphocytes, plasma cells and fewer macrophages. There is diffuse mild epidermal and multifocal follicular orthokeratotic hyperkeratosis.

MORPHOLOGIC DIAGNOSIS: Haired skin and subcutis: Pyogranulomas **(1pt)**, multiple, with numerous intradermal fungal hyphae **(1pt)** Splendore-Hoeppli material **(1pt)**, and dermal fibrosis.

MOST LIKELY CAUSE: *Microsporium canis* **(2pt)**

CONDITION: Feline dermatophytic pseudomycetoma **(1pt)**

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Case 3. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Pancreas: The pancreas is expanded and remaining lobules are compressed by a multilobular, infiltrative, moderately cellular, poorly demarcated, neoplasm which is forming a compression capsule. **(1pt.)** The neoplasm, which is largely necrotic, is composed of disorganized nests and packets **(1pt.)** of neoplastic epithelial cells which rarely form acini on a dense fibrous stroma. Neoplastic cells are polygonal, with indistinct cell borders and a moderate amount of finely granular eosinophilic cytoplasm. **(1pt.)** Nuclei are irregularly round with finely clumped chromatin and 1-2 eosinophilic nuclei; many of the nuclei are hyperchromatic. **(1pt.)** Mitoses average 30 per 2.37mm² **(1pt.)** Neoplastic cells invade the compression capsule **(1pt.)** and there is extensive necrosis **(1pt.)** within the large nodule and throughout the infiltrating nests of cells. Small numbers of lymphocytes and neutrophils are present within the compression capsule. The adjacent pancreatic lobules are compressed with diffuse mild atrophy of acinar cells. There is infiltration of the pancreatic interstitium with low to moderate numbers of neutrophils **(1pt.)** and lymphocytes and there is mild interstitial fibrosis. **(1pt.)** Neutrophils are present as well as within degenerating acini and pancreatic ductules. Remaining pancreatic islets often contain abundant homogenous waxy eosinophilic material which results in atrophy of islet cells (amyloid). **(1pt.)** Some pancreatic lobules compress adjacent lobules (exocrine hyperplasia). **(1pt.)** There is diffuse marked fat atrophy. **(1pt.)**

Haired skin: There is diffuse and severe atrophy **(1pt.)** of hair follicles and apocrine glands. Follicles are diffusely in telogen **(1pt.)**; no hair shafts **(1pt.)** are present within the markedly atrophic follicles. Apocrine glands are contracted and epithelium is vacuolated. There is minimal to mild acanthosis of the overlying epidermis. The stratum corneum is very thinned, and there is a lack of keratohyaline granules in the granular layer. Abdominal fat is absent, and there is atrophy of the underlying skeletal muscle. **(1pt.)**

- Morphologic Diagnosis:**
1. Pancreas: Pancreatic exocrine carcinoma. **(1pt.)**
 2. Pancreas: Pancreatitis, interstitial, subacute, diffuse, mild, with acinar atrophy. **(1pt.)**
 3. Pancreas, islets: Amyloidosis, diffuse, mild.
 4. Haired skin, follicles and apocrine glands: Atrophy, diffuse, severe. **(1pt.)**
 5. Subcutis, fat and skeletal muscle: Atrophy, diffuse, severe. **(1pt.)**

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Case 4. Tissue from a cat.

MORPHOLOGIC DESCRIPTION: Haired skin: Diffusely, the superficial and deep dermis **(1pt.)** is infiltrated by large numbers of lymphocytes **(2pt.)** which surround and separate pre-existent collagen bundles **(1pt.)**. The infiltrate does not appear to have any particular focus **(2pt.)** (follicles, adnexa, dermoepidermal junction), but occasionally cluster in higher density around vessels or lymphatics. **(1pt.)** Lymphocytes do not infiltrate the epidermis of the subcutis. **(1pt.)** Few macrophages **(1pt.)** and neutrophils **(1pt.)** are scattered throughout the infiltrate, and fibroblasts are mildly hypertrophied. Dilated lymphatics **(1pt.)** are present in the superficial dermis (edema), and mild pigmentary incontinence **(1pt.)**. The majority of follicles are devoid of hairshafts. **(1pt.)** There is mild acanthosis **(1pt.)** of the overlying epidermis as well as orthokeratotic hyperkeratosis **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Haired skin: Dermatitis, lymphocytic **(2pt.)**, diffuse, severe. (Haired skin: Lymphoma, cutaneous)K)

Name the condition: Cutaneous lymphocytosis **(2pt.)** (Indolent cutaneous lymphoma OK)

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