

WSC 2023-2024
Conference 14, Case 1
Tissue from a horse.

MICROSCOPIC DESCRIPTION: Haired skin and subcutis: Markedly expanding the dermis, **(1pt.)** effacing follicles and adnexa **(1pt.)** and extending to and elevating the overlying epidermis; there are multifocal to coalescing nodules **(1pt.)** of granulomatous inflammation **(1pt.)** containing large numbers of macrophages **(2pt.)** with fewer lymphocytes **(1pt.)** (often in aggregates) and rare plasma cells **(1pt.)**, neutrophils and eosinophils. Macrophages contain multiple protozoal amastigotes **(2pt.)** surrounded by a clear halo, **(1pt.)** and to a lesser extent free within the extracellular space. They are 2-3 um in diameter **(1pt.)** with clear cytoplasm and a single 1 um diameter basophilic nucleus. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Haired skin: Dermatitis, granulomatous**(1pt.)**, multifocal to coalescing, severe, with numerous intrahistiocytic amastigotes. **(1pt.)**

CAUSE: *Leishmania* sp. (any species would do here in terms of morphology) **(2pt.)**

O/C: (1pt.)

WSC 2023-2024
Conference 14, Case 2
Tissue from a horse.

MICROSCOPIC DESCRIPTION: Nasal turbinate **(1pt.)**: One section of nasal turbinate is submitted for examination. The submucosa and underlying turbinate bone is largely effaced **(1pt.)** by multifocal to coalescing, poorly defined areas of granulomatous inflammation. **(1pt.)** Within areas of granulomatous inflammation, there are innumerable epithelioid macrophages **(1pt.)** and fewer multinucleated foreign body giant cell macrophages **(1pt.)** which are often centered on or have phagocytized one or more fungal hyphae**(1pt.)**. Hyphae are 4-6um in diameter **(1pt.)** with parallel **(1pt.)** 1-2um pigmented**(1pt.)** cell walls, clear cytoplasm and frequent septations. **(1pt.)** Yeast cells ranging up to 30um are also present. **(1pt.)** Scattered among the macrophage population are large numbers of lymphocytes and plasma cells, **(1pt.)** and fewer neutrophils and eosinophils. Areas of inflammation are often present against a background of plump fibroblasts and variably mature fibrous connective tissue. **(1pt.)** There is diffuse lysis of the bone of the nasal turbinate. **(1pt.)** There is mild production of widely separated trabeculae of woven bone oriented perpendicularly to the mucosal surface. There is moderate edema of the most superficial aspect of the submucosa, and the overlying nasal mucosa is eroded and attenuated. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Nasal turbinate: Rhinitis, granulomatous, **(1pt.)** multifocal to coalescing, severe, with turbinate bone lysis**(1pt.)** and numerous pigmented fungal hyphae**(1pt.)** and yeast cells.

NAME THE CONDITION: Phaeohyphomycosis **(2pt.)**

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

WSC 2023-2024

Conference 14, Case 3.

Tissue from a horse.

MICROSCOPIC DESCRIPTION: Respiratory mucosa (I don't think you can tell this is laryngeal versus nasal mucosa) **(1pt.)**: The mucosa is markedly hyperplastic. **(1pt.)** The submucosal connective tissue is expanded **(1pt.)** by moderate numbers of viable and degenerate neutrophils **(1pt.)**, macrophages **(1pt.)**, lymphocytes **(1pt.)** and plasma cells, admixed with fungal sporangia **(1pt.)** in various stages of maturity **(1pt.)**, as well as increased fibrous connective tissue and necrotic debris. Juvenile sporangia are round, range from 10 to 50 um in diameter, have a 2um thick wall, and contain a single karyosome (nucleus) surrounded by granular cytoplasm **(2pt.)**. Mature sporangia are arranged along and extend into the epithelium, are round and up to 200 um in diameter with a 2-3 um thick anisotropic wall (2pt) and contain immature and mature endospores **(1pt.)**, which consist of a thin wall, scant clear cytoplasm, and multiple eosinophilic bodies. Mature sporangia multifocally discharge mature endospores through an apical pore to the epithelial surface. **(1pt.)** There is multifocal mucosal epithelial hyperplasia **(1pt.)** with piling up and papillary projections, as well as occasional squamous metaplasia. The epithelium is transmigrated by numerous neutrophils and fewer lymphocytes. The nasal cavity (as demonstrated in the crevices of the proliferative epithelium) contains an exudate composed of numerous neutrophils, mucus, degenerate neutrophils, necrotic debris, few endospores and hemorrhage.

MICROSCOPIC DIAGNOSIS: Nasal mucosa: Rhinitis, proliferative **(1pt.)**, chronic-active **(1pt.)**, diffuse, moderate, with epithelial hyperplasia (1pt), and numerous multiple sporangia and endospores. **(1pt.)**

CAUSE: Rhinosporidium seeberi. **(3pt.)**

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

WSC 2023-2024
Conference 14, Case 4.
Tissue from a horse.

MICROSCOPIC DESCRIPTION: Kidney: Randomly **(1pt.)** scattered within the cortex and extending into the medulla **(1pt.)**, are multifocal to coalescing foci of inflammation **(1pt.)** that center on and efface glomeruli **(1pt.)**, extend into adjacent interstitium and surround and replace adjacent tubules **(1pt.)**. Inflammatory foci are admixed with numerous degenerate and rare viable neutrophils **(1pt.)** and rare macrophages admixed with abundant necrotic debris and hemorrhage **(1pt.)**. Throughout the section, low numbers of glomerular capillaries are segmentally expanded by fibrin thrombi **(1pt.)** and bacterial emboli **(1pt.)** composed of large colonies of basophilic 2x3um coccobacilli. **(1pt.)** Affected tufts also contain few neutrophils admixed with small amounts of cellular debris. **(1pt.)** In areas adjacent to suppurative inflammation, tubular epithelium is markedly swollen with numerous vacuoles (degeneration) **(1pt.)** or brightly eosinophilic, shrunken and fragmented, with pyknotic nuclei (necrotic) **(1pt.)**. Necrotic tubules often contain sloughed epithelial cells admixed with degenerate neutrophils and cellular debris and bacterial colonies (which are also present within the adjacent interstitium) **(1pt.)** Other tubules often contain abundant protein within their lumen, or rarely hemorrhage. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Kidney: Nephritis, suppurative **(1pt.)** embolic **(1pt.)**, with mild fibrinosuppurative glomerulitis **(1pt.)** and rare large colonies of bacilli **(1pt.)**

CAUSE: *Actinobacillus equuli* **(1pt.)**

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