

ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2015 – Histology

Case 4

Dog

HD: Nasal mucosa.

A 2x1 cm in diameter, exophytic inflammatory lesion (polyp) with almost 90% of the lamina propria expanded and substituted by innumerable mesomycetozoan organisms at different stages of maturation associated with fibrosis.

Mesomycetozoan organisms can be identified as:

- Juvenile sporangia (trophocyte) that are round, 10 to 50 µm in diameter, with a 2 µm thick wall, and containing a single nucleus surrounded by granular cytoplasm.
- Mature sporangia that are arranged underneath the epithelium, are round and up to 200 µm in diameter, with a 2-3 µm thick anisotropic wall and contain immature endospores, which line the subepithelial side at the periphery of the cyst, and mature endospores in the center of cyst.
- Endospores that consist of a thin wall, scant clear cytoplasm, and multiple eosinophilic bodies.
- Empty, collapsed/ruptured sporangia, occasionally mineralized, that have expelled the sporangiospores are also evident.

In association with the organisms, lamina propria is also expanded by moderate amount of clear fluid (oedema) associated with elevated number of spindle cells with elongated, hyperchromatic, oval nuclei (fibrocytes) embedded in a moderate amount of amorphous intensely eosinophilic material (collagen) interpreted as fibrosis. Diffusely in the lamina propria there are also numerous mature small lymphocytes and lesser numbers of mature plasma cells, scattered hemosiderin laden macrophages, and numerous small calibre vessels lined by plumped endothelial cells (neovascularization) engorged with red blood cells (hyperaemia). Superficially, numerous extravasated red blood cells (haemorrhages) are also evident.

The superficial keratinized epithelium is hyperplastic characterized by multiple erosions, with numerous neutrophils transmigrating in the epithelium (exocytosis).

There are luminal necrotic and viable epithelial cells, endospores and, scattered extravasated red blood cells (haemorrhages).

MD: Nasal mucosa: severe diffuse chronic granulomatous and proliferative rhinitis with intralesional sporangia and endospores (also accepted Mesomycetozoan parasites)

E *Rhinosporidium seeberi*

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Histologic Description	Points
Style	1
Nasal epithelium	1
2x1 cm (dimension)	0.5
90% affected	0.5
Papillary proliferation/Polyp	0.5
Lamina propria expansion/involvement by:	0.5
Mesomycetozoon elements:	
Juvenile sporangia	0.5
round, range from 10 to 50 um in diameter	0.5
contain a single nucleus	0.5
2 um thick wall	0.5
Mature sporangia	0.5
round and up to 200 um in diameter	0.5
a 2-3 um thick anisotropic wall	0.5
contain immature endospores	0.5
thin wall, scant clear cytoplasm	0.5
Empty, collapsed/ruptured sporangia with mineralization	0.5
Associated to/surrounding parasites there are:	
Elevated numbers of lymphocytes	1
Elevated number of macrophages	1
Lesser numbers of plasma cells	0.5
Increased numbers of capillaries (angiogenesis)	1
Superficial hemorrhages	0.5
Hemosiderin laden macrophages (hemosiderophages)	1
Fibroblasts and Collagen (fibroplasia/fibrosis)	0.5
Non degenerated neutrophils transmigrating into the epithelium (exocytosis)	0.5
MD/MDs Nasal mucosa, severe (0.5) diffuse, chronic granulomatous (0.5) and proliferative (0,5) rhinitis (0,5) with intralesional sporangia and endospores (also accepted Mesomycetozoon parasites) (1)	3
E/Es <i>Rhinosporidium seeberi</i>	2
	20

References:

- Rhinosporidiosis, JKP vol II, pag. 641
- Rhinosporidiosis in a dog native to the UK. Miller RI, Baylis R. Vet Rec. 2009 Feb 14;164(7):210.