



# ECVP/ESVP Summer School in Veterinary Pathology



## Marie Curie Training Courses

### Summer School 2005 – Fish F04/787

#### Slide No. F04/787: Tissue from a discus

##### Description of histological findings

Intestine, focally extensive the mucosa is replaced by moderate amounts of cell and nuclear debris (necrosis), large amounts of macrophages with abundant foamy cytoplasm, lymphocytes and plasma cells intermixed with multiple protozoan parasites. These parasites are pear shaped, 4 by 10  $\mu\text{m}$ , with one to two apical nuclei and two visible flagella on the other site (interpreted as *Spironucleus* sp.). The same flagellates are also located in groups of up to 20 in the lamina propria and submucosa surrounded by aforementioned inflammatory cells and necrotic material. There is moderate proliferation of fibroblasts and angiogenesis (granulation tissue).

Multifocally to coalescing, the lamina propria, the submucosa and the serosa are severely thickened due to accumulation of large amounts of macrophages and lymphocytes, few plasma cells and eosinophil like cells. Multifocally, granulomas are formed with a central necrosis, marginating epithelioid macrophages, lymphocytes and fibroblasts.

In the adjacent intestinal loops there are numerous intralumenal cut sections of ciliates, 30 x 100  $\mu\text{m}$ , with abundant eosinophilic, granulated cytoplasm, an eccentric nucleus and multiple cilia on the cell membrane (interpreted as *Balantidium* sp.).

Additionally there is multiple round to elongated organisms, up to 20 x 100  $\mu\text{m}$ , with an amphophilic central nucleus, deep eosinophilic and light eosinophilic granulated cytoplasm (protozoa, *Protoopalina* sp.) and multiple cut sections of nematodes, up to 50  $\mu\text{m}$  in diameter, with a cuticula, underlying musculature, a coelomic cavity, intestinal and reproductive organs.

##### Morphological diagnoses

Intestine, ulcerative enteritis, focally extensive, moderate with intralumenal flagellates

Intestine, granulomatous enteritis, severe, multifocal to coalescing

##### Etiologies

*Spironucleus* sp.

*Balantidium* sp.

*Protoopalina* sp.

Nematodes

Scoring system	Points
<u>General:</u>	
Design	2
Tissue	1
<u>Descriptive features:</u>	
ulceration	2
inflammatory cells	1
description of flagellates	2
description of granulomatous inflammation	3
ciliates	1
protozoa ( <i>Protoopalina</i> sp.)	1
nematodes	1
<u>Morphological Diagnoses:</u>	4
<u>Etiologies:</u>	2