



ECVP/ESVP Summer School in Veterinary Pathology



Summer School 2009 – Clinical Pathology 739/07

History:

8 years old dog (spayed female) with no anamnestic information. The dog is dyspnoeic and clinical examination and imaging reveal a pericardial effusion

No information on CBC or biochemistry

Physico-chemical analysis of the effusion: pinky, transparent, total proteins = 3,0 g/dL, SG = 1020; cells = $3,0 \times 10^3/\square$ l

Cytological description

Hemodiluted sample with low cellularity and abundant bloody background.

A mixed population of cells with prevalence of moderate degenerated neutrophils (pyknosis) and occasional round-shaped cells, arranged in small aggregates or single are present.

These cells are characterized by evident anisocytosis and anisokaryosis. They have moderately basophilic cytoplasm often vacuolated and/or granulated and characterized by a perinuclear halo and by an evident brush border. Most of these cells contain polygonal orange crystals, morphologically consistent with hematoidin and some of them are binucleated. When arranged in clusters, these cells tend to be separated to each other by small clear rims ("windows"). Based on all the morphological features described above these cells can be classified as reactive mesothelial cells.

Additional features include vacuolated macrophages, rare neutrophils and lymphocytes and starch granules.

Cytological diagnosis:

Chronic hemorrhagic effusion with reactive mesothelial hyperplasia

Comment:

The most evident cytological feature in this case is the intense reactive hyperplasia of mesothelial cells associated with the presence of the hemorrhagic effusion. This latter is probably chronic due to the presence of hematoidin crystals within mesothelial cells. Hemorrhagic pericardial effusions can occur in the case of ruptured heart or large vessels, but these conditions are not "chronic", in the case of chronic bleeding from intrapericardial neoplasia, or it can be associated to the so called benign idiopathic pericarditis, which is the most likely condition in this case.



ECVP/ESVP Summer School in Veterinary Pathology



Summer School 2009 – Clinical Pathology 739/07

SCORING

Cellularity and background	0,5 pts
Description of mesothelial cells	
Single or clustered cells	1 pt
Description of cytoplasmic features	1 pt
Hematoidin crystals	1 pt
Description of nuclear features	1 Pt
Binucleated cells and windows	1 pt
Additional features	1 pt
Cytological diagnosis	1 pt
Comment on the possible cause	1 pt
TOTAL	8,5 pts