

ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2012 – Cytology

Z12-1184

Cat, male neutered, 13 y Pleural effusion

Description

The smear is highly cellular, evenly stained and cells are mostly spread as a monolayer, however thick areas are present and in these areas cellular details cannot be seen. There are numerous erythrocytes and large numbers of variably sized cohesive clusters composed of polygonal to roundish moderately polymorphic epithelial cells as well as large numbers of individualized epithelial cells (80% of the nucleated cells consist of them). The epithelial cells have usually abundant deeply basophilic cytoplasm, however the N/C is highly variable and many cells have a high N/C ratio. Some cells contain large optical empty vacuoles. Others have multiple small perinuclear vacuoles. Cell borders are distinct. Nuclei are round and have a reticulate chromatin. Nucleoli are often indistinct, but sometimes one to two are present. Multinucleated cells with up to 4 nuclei with mild variability of size are frequently seen. There is marked anisocytosis, moderate anisokaryosis and occasional mitotic figures (including atypical ones) are visible. In the background moderate numbers of macrophages with abundant cytoplasm that often contains erythrocytes (erythrophagocytosis indicating haemorrhage) and dark granules (up to 2µm in diameter, interpreted as hemosiderin) and few non-degenerate neutrophils as well as small lymphocytes are seen.

Diagnosis

Pleural effusion: Carcinoma (of unknown origin) with haemorrhage

Comment

Haemorrhage with highly activated mesothelial cells is maybe a differential diagnosis. However, the number of epithelial cells is very high, atypical mitotic figures can be found and no concurrent inflammatory reaction is evident. Therefore neoplasia is the most likely diagnosis.

Score

Design	2
High cellularity	1
Proportion of cells	1
Cohesive clusters, epithelial cells	2
Cytoplasmic features (basophilia, vacuoles)	2
N/C ratio	1
Nuclear features	2



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Multinucleated cells	1
Anisocytosis, anisokaryosis, mitotic figures	3
Erythrophagocytosis	1
Hemosiderin	1
Diagnosis	3