



ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2012 – Cytology

Case #5

Signalment: Dog, great dane, SF, 11yrs

Sample: bone

Description of cytological findings

Variable quality of staining depending on thicker areas of the smears.

The smear is highly cellular with abundant, finely granular, pink proteinaceous background. There is a mixed population of cells with large prevalence of variably sized (10-30 microns), mesenchymal, spindle individualized cells, sometimes with some cohesiveness. Cells have variable N/C ratio, indistinct cell borders, and blue cytoplasm. Nuclei are large (2-4 erythrocytes in diameter), oval, occasionally indented, with granular chromatin and 1-3, variably sized, round nucleoli. Mitotic figures are not rare. Anisocytosis and anisokaryosis are prominent.

Round cells with eccentrically placed nucleus, prominent nucleolus and occasional clear paranuclear halo (Golgi apparatus) are present (reactive osteoblasts).

Very large (80-100 microns), multinucleated giant cell with clustered, overlapping, uniform, round nuclei with a single prominent nucleolus, abundant finely granular blue to pinkish cytoplasm sometimes containing small purple granules are present (osteoclasts).

Variable amount of strands of unstained, refractile, long fibrils (collagen).

Erythrocytes (mild blood contamination), purple fibrillar nuclear strands, naked nuclei, spindle mesenchymal cells (fibroblasts) and some aggregate of purple extracellular matrix (osteoid) are present.

Score

Design	(2 points)
Cellularity	(1 point)
Mixed population	(1 point)
Prevalence of spindle cells	(1 point)
N/C ratio	(1 point)
Nuclear features	(2 points)
Cytoplasmic features	(2 points)
Mitosis	(1 point)
Anisocytosis/anisokaryosis	(1 point)
Osteoclasts	(2 points)
Reactive osteoblasts	(2 points)
Blood contamination/naked nuclei/mesenchymal cells/ECM/...	(2 points)

MD

Bone – osteolytic sarcoma with bone remodeling	(2 points)
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