



ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2014 – GEMS

Case 14-33-13-1. Tissue from a C57BL/6Tac mouse (middle tissue only)

Description:

Lung: Most of one lung lobe is mildly expanded by a poorly-defined diffuse area of interstitial inflammation, consisting of approximately uniformly thickened, hypercellular alveolar septa and alveoli that contain swollen alveolar macrophages. Many of the alveolar macrophages contain eosinophilic crystalline material; others are foamy. Brightly eosinophilic, angular crystals are also extracellular in the alveoli, and may be admixed with intraalveolar proteinaceous material. The crystals are generally rectangular, with either straight or frayed edges. Most have pointed ends. Occasional alveoli contain multinucleate giant cells and a few eosinophils. Alveolar septa are lined by enlarged cuboidal cells, presumably alveolar type II cells. Some of the terminal bronchioles contain plugs of eosinophils, macrophages, and crystalline material. Blood vessels in the affected area are often surrounded by wide cuffs of eosinophils and excessive perivascular fluid and are lined by swollen endothelium. The major bronchus in the affected lobe is lined by mildly hypertrophic epithelium. The pleura is mildly thickened. In the adjacent, relatively unaffected lung lobes, bronchi contain occasional eosinophilic crystals, often associated with sloughed bronchial epithelial cells, and occasional enlarged alveolar macrophages are present within alveoli. Many of the bronchial epithelial cells contain eosinophilic droplets, some of which bud into the bronchial lumina, or finely particulate eosinophilic crystalline material. Other tissues in the section include skeletal muscle and a nerve, which are unaffected.

Diagnosis: Pneumonia, eosinophilic, interstitial, granulomatous, crystalline, chronic, multifocal, moderate, lung.

Likely composition of crystals: YM1 chitinase (Chil3)

Interpretation: Eosinophilic crystalline pneumonia is an occasional background finding in mice. It is especially common in certain strains, such as 129S4/SvJae and C57BL/6.

Notes on grading:

Must describe as interstitial pneumonia.

The majority of the descriptive points (10 pts) are for the pattern of the pneumonia (diffuse, interstitial, alveolar septa, alveolar macrophages, crystals)

The minority of the points (4 points) are for secondary effects, including blood vessels, bronchus in affected area, changes in less affected lung lobe

Morphologic Diagnosis - 6 points