



ECVP/ESVP Summer School in Veterinary Pathology



Marie Curie Training Courses

Summer School 2006 – Toxicological Pathology 80-6834

Slide 7. L-1 (80-6834/80-6804) Rat.

Description (13)

Granulomas (8)

- multifocal to coalescing nodules – early ones around airways
- mix of fibroblasts, macrophages, eosinophils, globular leukocytes
- lymphocyte foci
- silica particles – foreign body
- accumulation of macrophages surrounded by lymphocytes peribronchially.

Alveolar granular proteinaceous material free in alveoli and in macrophages, a few inflammatory cells (neutrophils and macrophages), debris, cholesterol clefts (4)

Arteriole – smooth muscle hypertrophy (1)

Morphologic Diagnosis(es) (5)

Severe multifocal to coalescing pulmonary granulomas/granulomatous pneumonia with intralésional particulate material/foreign body (consistent with silica) and associated arteriolar smooth muscle hypertrophy (3)

Alveolar proteinosis associated with interstitial pneumonia (2)

Etiology/Etiologic diagnosis: (1)

Silica/silicosis

Note: differentials: other pneumoconiosis eg beryllium, asbestos; fungal infection

Possible mechanism of toxicity (1)

Particulates damage macrophages during ineffective phagocytosis

Additional information: *Rat given 50 mg silica (quartz, 0.5 um particles).*

Rats did not appear clinically affected.

Lung weight and collagen content increased, silica content decreased over time.

Gross – lungs larger than normal with a nodular appearance and crunchy. Enlarged lymph nodes. Lesions progressive over 1 yr to mature silicotic nodules (acellular collagenous nodules).

Alveolar lipoproteinosis - +ve with PAS stain.

Reiser et al, 1983, Am J Pathol 110:30-41