

ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2014 – Toxicological Pathology (183)

Slide 8.L-2 (01-23121) Cat

Description (14)

Main changes – edema, neutrophilic aggregates

Alveolar spaces - (5)

- amorphous, eosinophilic material (edema)
- scattered macrophages, RBCs and neutrophils, also aggregated of neutrophils
- occasional syncytial/multinucleated cells

Alveolar walls/interstitium – edema and inflammatory cells (2), in peripheral areas fibrillar material and spindle shaped cells (fibroblasts) (2)

- Occasionally dense eosinophilic lining material (hyaline membranes) (2)
- Prominent epithelial cells (type II hyperplasia) (2)

Bronchi/bronchioles – submucosa – mononuclear cells (1)

- intraluminal inflammatory cells

Morphologic Diagnosis(es) – 4

Bronchointerstitial pneumonia with hyaline membranes and type II cell hyperplasia, diffuse, severe, acute

Note: interpretation of inflammatory cells in airways – if active inflammation in airways, then use bronchointerstitial pneumonia; if cells being removed via mucociliary escalator, then not airway inflammation.

It only takes about 3 days to get fibroblast proliferation in the lung after injury

Possible causes and mechanisms -2

1. Infectious –most likely due to neutrophilic infiltration - viral (not calicivirus) , blood borne bacterial, protozoan (e.g., toxoplasmosis)

2. Toxic -

- paraquat – cyclic oxidation to reactive metabolite - ingestion
- inhaled toxin – direct irritation e.g., ammonia, oxygen
- chemotherapeutic agent – parenteral administration
- oxygen toxicity - inhaled
- ARDS (e.g. secondary to pancreatic injury),
- large animal mainly - plant toxins – see lecture notes

3. Idiopathic - this is often the final diagnosis – lung has limited response to injury

Case information: 7yr female spayed cat, pale mucous membranes