Respiratory Distress in a Domestic Shorthair Feline

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Signalment and Anamnesis

- DSH, MN, 10 years
- History of:
  - Chronic lower airway disease
  - Methylprednisolone

January 2016
- Radiographs
- Fine Needle Aspirate
- Bronchoscopy
  - Erythema
  - Increased mucus
  - White plaques
- Bronchoalveolar lavage
  - Eosinophils
Case Progression

- Diagnosis: Feline Hypersensitivity Airway Disease

- Treatment
  - Prednisolone
  - Cyclosporine
  - Inhaled steroids

- June 2016
  - Active Herpes infections

- September 2016
  - Acute Respiratory Distress
  - Emergency Rescue Therapy
  - Steroids, cyclosporine, antibiotics and bronchodilators
  - No improvement, Euthanized
Gross Pathological Findings

- Abundant red fluid in thoracic cavity
- Lungs firm to rubbery
- Foci
- Heart normal
Histopathological Findings
- Thickened alveolar septa
- Inflammatory infiltrates in septa
- Tall cuboidal to columnar epithelium lining septa
- Alveolar exudate
- Smooth muscle hypertrophy
- Replacement of normal Type I pneumocytes by Type II pneumocytes

- Myriad organisms that are intraepithelial, free or in macrophages
- Myriad 2-3 μ bannana-shaped organisms
- Morphologically typical of *Toxoplasma gondii*
Large areas of necrosis alongside areas of proliferative changes

Necrosis of all parenchymal areas

Previously described organisms can also be found interspersed in the areas of necrosis along with inflammatory cells.
Diagnosis

- Interstitial pneumonia with necrosis
- Active *Toxoplasma gondii* infection
Toxoplasma gondii

- Obligate intracellular apicomplexan parasite
- Felids → definitive hosts
- All mammals and birds → intermediate host
- Complex life cycle
  - Extraintestinal asexual cycle
  - Intestinal sexual cycle
Toxoplasmosis

- **Diverse Clinical Signs**
  - 97% Pulmonary Lesions
  - 93% Hepatic Lesions
  - 93% Pancreatic lesions

**Possible Pathogenesis**

- **Recrudescent infection**
  - Infected previously in life

- **New infection**
  - Infected after cyclosporine treatment
  - Tachyzoites only and IgM titer
  - Similar to Lappin study (AJVR, 2015)
Thank You!
References


Greene, Craig E. Infectious diseases of the dog and cat. Elsevier Health Sciences, 2013.

