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Cats vs Dogs: Not-So-Basic Radiology of the Thorax
imaging manifestations of dyspnea you may not have learned in vet school

Pneumonia in dogs, regardless of type, tends to have a cranioventral distribution on thoracic radiographs. This basic rule-of-thumb serves us well in most instances. In cats, distribution of the lung pattern is still important but not as simple as “cranioventral” (aren’t all cats just more complex?!). As a radiologist working closely with pathologists, I have come to understand and accept certain lung abnormalities that do not follow the basic rules, especially as they pertain to cats. In this case-based presentation, the radiographic features of infectious pneumonia in cats will be discussed. I will stress the importance of history being crucial for a radiologist to make the best prioritized differential list. The same radiographic findings can have very prioritized diagnoses depending on if signs are chronic or acute.

Imaging Feline Pneumonia

In radiology textbooks, the discussion of feline pneumonia gets combined with the basic rule of thumb for dogs, suggesting that both cats and dogs often develop a cranioventral distribution of pneumonia. This still may work for aspiration pneumonia, but aspiration pneumonia is less common (in fact, rare at Animal Medical Center) relative to other types of feline pneumonia.

Aspiration Pneumonia (AP) in cats is not common, at least not as common as it is in dogs. Predisposing factors for AP in cats include GI disease, esophageal disease, and laryngeal dysfunction. The clinical presentation of AP in cats is also not the same as it would be for a dog. AP cats do not cough. Clinical signs are often acute, with lethargy and HYPOthermia. Lung patterns can be but are not limited to a cranioventral distribution.

Bronchopneumonia (BP) in cats is more common. Clinical signs are often chronic, associated with coughing and wheezing, like feline asthma (primary inflammatory lower airway disease). In fact, BP could potentially result secondary to chronic asthma. BP is considered an infectious pneumonia, to include pathogens such as *Pasteurella spp*, *E. coli*, *Staph/Strep*, *B bronchiceptica*, and *Mycoplasma* isolates. *Mycoplasma* is specific interest, especially with regards to its potential exacerbation of asthma. Bronchointerstitial to patchy alveolar lung patterns are seen with BP, with the bronchointerstitial pattern appearing more severe than a typical asthmatic.

Acute Embolic Pneumonia (AEP) in cats is poorly described in the literature, but occasionally seen at the Schwarzman Animal Medical Center. The cat may have a nidus of infection elsewhere in the body as a predisposing factor. Presentation is often acute dyspnea and tachypnea. Radiographic findings rapidly progress and tend to be multifocal, with areas that are well margined and somewhat nodular. This should be differentiated from other differentials for nodular lung disease (it’s not always cancer!). In fact, there is a tendency to prioritize neoplastic processes at first glance of this radiographic presentation. Various isolates have been identified

on both airway washes and necropsy. Cats respond well to broad spectrum antibiotics, often improving in radiographic and clinical signs in less than a week following the acute presentation.

Interstitial Lung Disease or Interstitial Pneumonia (ILD or IP) will only briefly be touched on in our discussion. ILD encompasses a wide range of primary inflammatory lung disease (non-infectious pneumonias); the various types of ILD are poorly classified in dogs and cats. A mention of idiopathic pulmonary fibrosis (IPF) in cats is warranted because of its overlap in imaging characteristics with infectious pneumonias and asthma.

References:

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