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Pneumonia, Bronchitis/Bronchiectasis, Eosinophilic Bronchopneumopathy and Chronic Obstructive Pulmonary Disease:

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Dogs may occasionally develop pulmonary (lung) disease. There are many different types of diseases that may affect a dog's lungs, including heartworm disease, congestive heart failure and airway collapse (collapsing trachea and mainstem bronchus collapse). The following is a brief description of other causes of lung disease in the dog.

Pneumonia is infection in the lungs. Pus accumulates within the lung tissue, and this leads to coughing and difficult or labored breathing in severe cases. Pneumonia is usually caused by bacterial infection, and may be initiated by **aspiration** – which is the inhalation of vomitus or water. The aspiration of vomitus is termed *aspiration pneumonia*, and secondary pneumonia may result. Patients at risk for aspiration include those that have esophageal problems such as megaesophagus, laryngeal issues like laryngeal paralysis and patients that have had anesthesia or prolonged recumbency due to illness. In some cases, we never determine what caused the pneumonia. Diagnosis is made on the basis of the history, physical examination, chest x-rays and transtracheal wash/bronchoalveolar lavage. Treatment typically consists of antibiotics, however bronchodilators may be used as well.

Bronchitis and bronchiectasis is a condition that may cause chronic coughing in dogs. Bronchitis is inflammation of the airways. The underlying causes may never be determined, but most of the time airborne allergen exposure is implicated. Excessive mucus production in the airways can occur, leading to frequent coughing. Bronchiectasis is abnormal dilation of the lower airways that may result secondary to long-standing bronchitis. Bronchitis may be diagnosed on the basis of the history, physical examination, chest x-rays and transtracheal wash/bronchoalveolar lavage. Bronchiectasis may be diagnosed based on x-rays or bronchoscopy. Patients with bronchitis and bronchiectasis may be medically managed with corticosteroids, antihistamines, bronchodilators, cough suppressants and occasionally antibiotics if concurrent airway infection is present.

Eosinophilic bronchopneumopathy (eosinophilic bronchitis or pneumonitis) is a specific type of inflammation that occurs in the airways and lung tissue. The underlying cause is uncommonly identified, however exposure to airborne allergens is typically implicated. Patients with this condition often have severe coughing, and may develop difficult or labored breathing. Diagnosis is made on the basis of the history, physical examination, chest x-rays and transtracheal wash/bronchoalveolar lavage. The identification of large numbers of a certain type of white blood cell, the eosinophil, in airway secretions confirms the diagnosis. Treatment generally consists of broad-spectrum deworming and tapering courses of corticosteroids.

Chronic obstructive pulmonary disease or COPD is the end-stage result of likely many different types of chronic interstitial diseases of the lungs. This condition is characterized by pulmonary fibrosis or scarring in the lung tissue that is the result of chronic inflammation. This scarring impairs the ability of dogs to expand normally and can lead to labored breathing. Concurrent inflammation in the airways often leads to chronic coughing. This is an incurable condition, however patients may be managed medically for periods of months to even years. Definitive diagnosis requires a lung biopsy, however airway inflammation and

infection may be diagnosed with a less invasive test such as a transtracheal wash or bronchoalveolar lavage. Most patients are treated with a combination of corticosteroids, bronchodilators, cough suppressants and occasionally antibiotics if concurrent airway infections are present.