

Canine Bronchial Diseases

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This presentation provides a review of the most common bronchial and airway diseases affecting dogs, focusing on tracheal collapse, bronchomalacia, chronic bronchitis, and eosinophilic bronchopneumopathy (EBP). These conditions represent a spectrum of disorders involving airway rigidity, inflammation, and structural compromise, each with distinct clinical patterns but often overlapping signs such as chronic cough and exercise intolerance.

The discussion begins with tracheal collapse, defined as a loss of rigidity to the support structures of the trachea leading to decreased luminal diameter and dynamic upper airway obstruction. This condition is most common in toy and small-breed dogs and may present as early as six months of age. Tracheal Collapse is always a progressive condition, beginning with dorsoventral weakening of the tracheal rings and advancing into mucosal inflammation, mucus accumulation, and worsening airway obstruction. Thoracic radiographs may identify collapse but often underestimates the severity and frequency. Therefore, both bronchoscopy and fluoroscopy will provide a more accurate assessment. Management focuses on weight reduction, antitussives, short-term corticosteroids, and sometimes bronchodilators. In severe cases, intraluminal stenting offers rapid relief but does not eliminate the need for ongoing medical treatment. Bronchomalacia, a lower-airway disease characterized by dynamic collapse of bronchi and bronchioles, should be considered separately or as a component of Tracheal Collapse. This is not solely a tracheal disease but may coexist with tracheal collapse in nearly half of affected dogs. Bronchomalacia primarily affects large-breed, middle-aged to geriatric dogs and is strongly associated with chronic airway inflammation. Computed Tomography (CT) imaging and bronchoscopy are key diagnostic tools, with bronchoscopy serving as the gold standard. Medical management focuses on addressing the underlying inflammation, typically with systemic corticosteroids, while bronchodilators are discouraged because they may worsen airway instability. Canine Chronic Bronchitis (CCB) is defined as a chronic cough of more than 2 months duration in the absence of infection, cardiac disease, or environmental triggers. CCB shares many of the clinical signs as the others, however CCB pathophysiologically includes neutrophilic airway inflammation, mucus hypersecretion, and impaired mucociliary clearance. Thoracic radiographs often

reveal a bronchial pattern, and bronchoscopy shows irregular mucosa with mucoid debris. Treatment relies on corticosteroids—oral or inhaled—with antibiotics reserved for suspected secondary bacterial involvement. Antitussives may be added for symptomatic relief. Finally, the presentation addresses eosinophilic bronchopneumopathy, part of a broader spectrum of eosinophilic lung diseases involving infiltration of eosinophils into the airways and pulmonary interstitium. Young adult dogs, particularly northern breeds such as Siberian Huskies and Malamutes, are predisposed. A hallmark of EBP is its substantial eosinophilic inflammatory presence with a rapid response to corticosteroids.

Collectively, these conditions underscore the importance of recognizing breed predispositions, identifying the level of airway involvement, and tailoring therapy to the underlying pathophysiology. Early diagnosis and targeted management can significantly improve quality of life for affected dogs.