

What Is Your Diagnosis?

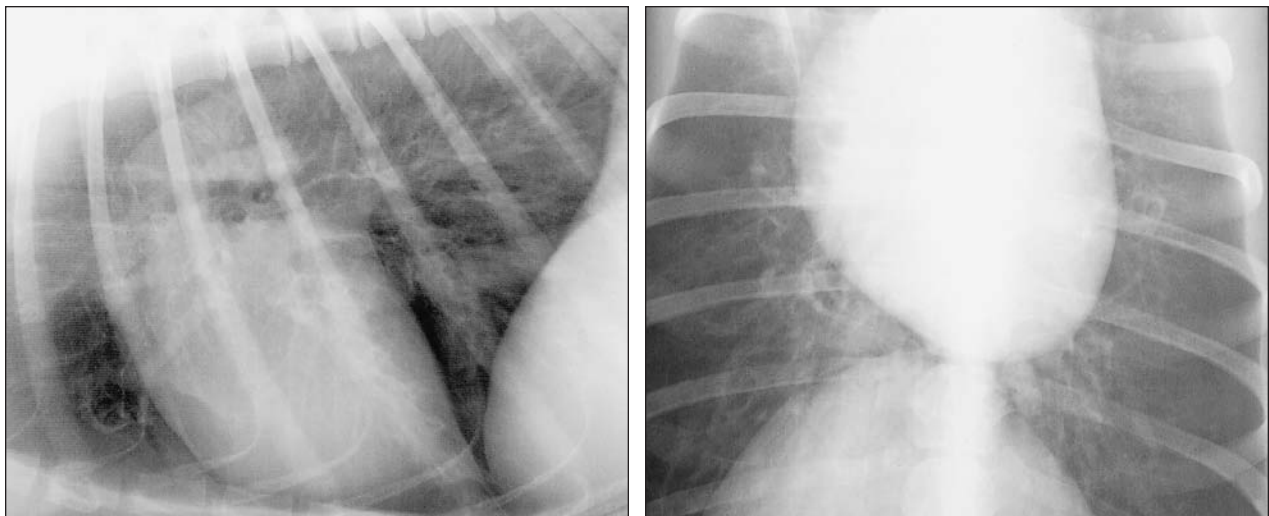


Figure 1—Lateral (left) and dorsoventral (right) radiographic views of a 1.5-year-old dog evaluated because of a chronic cough of 6 months' duration.

History

A 1.5-year-old mixed-breed dog was referred for evaluation of a chronic cough of 6 months' duration. The dog had developed exercise intolerance, and its appetite had decreased during the preceding 6 months. Coughing was exacerbated by excitement. The cough was productive and had increased in severity. The dog was kept indoors, and the owner was a heavy smoker. Treatment with antibiotics had not improved the dog's condition.

During physical examination, a cough was easily induced by palpation of the trachea. Thoracic auscultation revealed severe crackles and expiratory wheezes over both sides of the thorax. Rectal temperature, pulse and respiratory rates, and CBC results were within reference limits. Fecal examination by use of zinc sulfate flotation revealed *Trichuris vulpis* oocytes, but results of a Baermann sedimentation and direct smear were negative. Thoracic radiographs were obtained (Fig 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page ▶

This report was submitted by Balázs Szladovits, DVM; Károly Vörös, DVM, PhD; Péter Vajdovich, DVM, PhD; and John R. Dodam, DVM, PhD, DACVA; from the Department of Veterinary Medicine and Surgery, College of Veterinary Medicine, University of Missouri, Columbia, MO 65211 (Szladovits, Dodam); and the Department of Internal Medicine, University of Veterinary Science, Budapest, Hungary (Vörös, Vajdovich).

Address correspondence to Dr. Dodam.

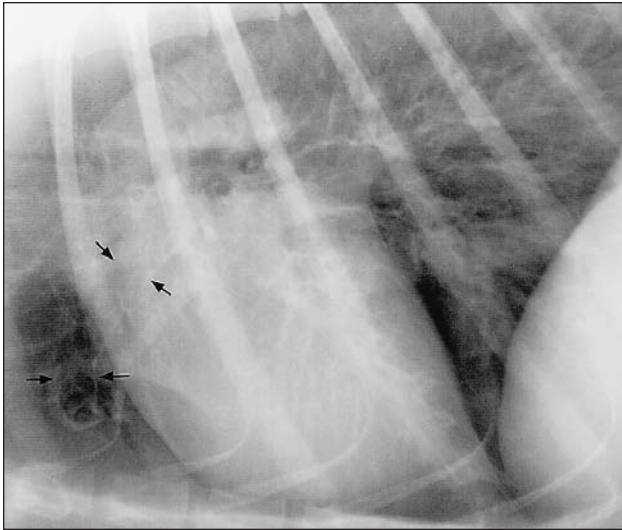


Figure 2—Same radiographic views as in Figure 1. Notice the bronchial pattern (arrows) evident on the dorsoventral view. Bronchiectasis (arrows) is evident on the lateral view as bronchi that do not taper. The diameter of several airways in the periphery of all lung fields is greater than expected.

Diagnosis

Radiographic diagnosis—Diffuse increase in pulmonary opacity with a bronchial pattern and bronchiectasis (Fig 2).

Comments

Detection of a bronchial interstitial pattern and bronchiectasis on thoracic radiographs together with a history of chronic cough is highly suggestive of chronic bronchitis. However, even when coupled with history and physical examination, radiographic appearance is not sufficient for a definitive diagnosis. Careful elimination of other differential diagnoses is necessary. Other diseases that may be associated with bronchiectasis include ciliary dyskinesia and situs inversus (Kartagener syndrome).

To obtain a specific diagnosis for the dog of this report, bronchoscopy was performed. Results revealed severe mucosal hyperemia. The mucosa also had an irregular, nodular, and polypoid appearance (Fig 3). These findings were consistent with chronic bronchitis, although changes detected during histologic examination of bronchial mucosal specimens were more severe than expected. These changes included a metaplastic epithelial layer and an edematous lamina propria infiltrated with large numbers of eosinophils and polymorphonuclear cells.

Inflammation persisting for more than 2 months that results in permanent airway damage is termed chronic bronchitis.¹ Allergic bronchitis in dogs is a poorly defined syndrome. Its distinction from chronic bronchitis is arbitrary and primarily based on finding a large number of eosinophils in bronchial secretions, together with a good response to treatment with corticosteroids or elimination of allergens.² Other potential causes for eosinophilic infiltration, such as parasitic lung infections, were ruled out in the dog of this report by use of fecal flotation and larval isolation tests. Detection of eosinophilia would increase the suspicion of allergic bronchitis. However, we did not detect

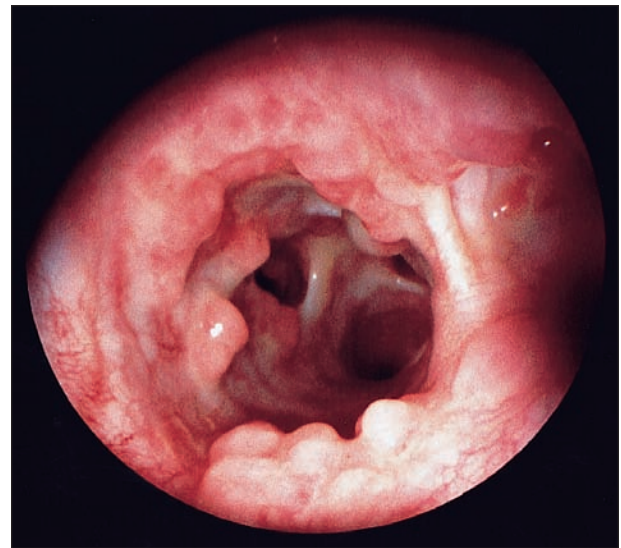


Figure 3—Photograph obtained during bronchoscopy of the dog described in Figure 1. The mucosa of the main stem bronchus appears reddened, and polypoid nodules are evident protruding into the airway lumen.

eosinophilia. Bacterial infection was excluded by results of microbiologic culture of specimens obtained during bronchoscopy. Thus, our final diagnosis was chronic eosinophilic bronchitis.

Chronic exposure to cigarette smoke may have triggered the disease in this dog. Treatment included limiting the dog's exposure to cigarette smoke and administration of bronchodilators and prednisone. Noticeable improvement was seen after the initiation of treatment; however, clinical signs did not resolve completely.

References

1. Wheeldon EB, Pirie HM, Fisher EW, et al. Chronic bronchitis in the dog. *Vet Rec* 1974;94:466-471.
2. Padrid PA. Diseases of the lower airway. In: Morgan, RV, ed. *Handbook of small animal practice*. 3rd ed. Philadelphia: WB Saunders Co, 1997;164-172.