

Canine Chronic Bronchitis

Internal Medicine Service



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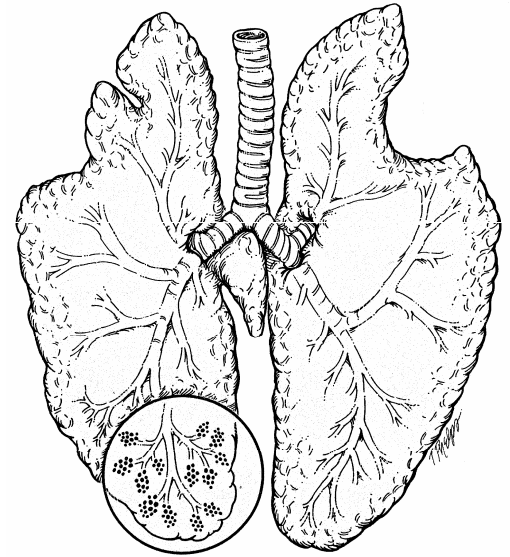
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What is Chronic Bronchitis?

Chronic bronchitis is a disease in dogs affecting the smaller airways that branch out from the trachea (windpipe). These branches, called bronchi and bronchioles, allow the transport of air into and out of the alveoli, the sites of oxygen exchange. Typically, inflammation within the airways results in excessive secretions that plug the airways. The end result is an impaired ability to bring oxygen into the alveoli for delivery to the rest of the body. Although the term “asthma” is occasionally used to describe this form of airway disease in dogs, this term is very misleading. Asthma, in people, specifically refers to the reversible constriction of muscle within the walls of the bronchi. Chronic bronchitis is associated with inflammation and swelling of the walls of the bronchi resulting in narrowing of the airways and obstruction or blockage of airways by plugs of mucus or other secretions. The inflammation of the airways is not reversible.



Bronchitis can be acute (short duration) and associated with reversible changes in the structure of the airways or chronic (long duration, usually more than 2-3 months) and associated with permanent, irreversible changes in the airways. Bronchitis may be caused by bacterial infections, hypersensitivity disorders (allergies), parasites (i.e., lung worms, heartworm), or chronic inhalation of airway irritants (second-hand smoke, dusts, exhaust fumes, etc). In chronic bronchitis the underlying cause cannot be identified.

Symptoms

The most common signs of chronic bronchitis include daily coughing, difficulty breathing, or wheezing for duration of 2-3 months or longer. Coughing is often more pronounced initially upon awaking from after sleeping, and then reduces in frequency while awake and active. Episodes of coughing can mimic vomiting; you may think that your dog is vomiting when in fact your dog is having a coughing fit followed by retching. Some severely affected dogs may have extreme exercise intolerance. These signs are not specific for bronchitis and can also be seen with many other diseases including heart failure, pneumonia, allergic lung disease, and lung cancer.

Diagnosis

To diagnose canine bronchitis, usually the first test is a chest radiograph (x-ray). The presence of radiographic changes of airway disease combined with a clinical history of middle to older aged dog with cough on most days for duration of at least 2-3 months may be sufficient to establish a tentative clinical diagnosis of chronic bronchitis. However, bronchoalveolar lavage (BAL) may be recommended to exclude other airway diseases (lung parasites, allergic bronchitis). This procedure allows collection of fluid and cells from your dog's lungs. These samples are sent out to a laboratory to determine what types of cellular changes are occurring in the lungs. If bacterial or parasitic infection is present, the results will help assist in determining what therapy might be most effective. Bronchoalveolar lavage does require anesthesia, so if the patient's condition is critical, it may not be possible to do this procedure because of increased risk of death.

Currently, the combination of the above tests is usually recommended to obtain a presumptive diagnosis of pancreatitis. The only definitive way to diagnose pancreatitis is to obtain a biopsy via surgery or laparoscopy, although many times the patient is too unstable to undergo anesthesia.

Canine Chronic Bronchitis Continued...

Treatment

Any underlying disease (i.e., bacterial or parasitic infection) must be diagnosed and treated. Changes may be needed in the dog's environment. Dogs with chronic bronchitis often have sensitive airways, and the inhalation of irritating particles from certain environments may worsen their condition. It is strongly recommended that their exposure to smoke (cigarette or fireplace), dusts (carpet fresheners, flea powder), and sprays (insecticides, hair spray, perfumes, and cleaning products) be eliminated or minimized.

Two classes of medications are commonly prescribed; bronchodilators (theophylline, aminophylline, pentoxifylline, and terbutaline) and corticosteroids (prednisolone, prednisone, and methylprednisolone). Bronchodilators (in theory) help to dilate or open the airways by relaxing the muscles around the airway walls. The overall effectiveness of these drugs alone is minimal in most dogs. Common side effects of bronchodilators in dogs can include vomiting, nausea, restlessness and lethargy. Pentoxifylline is unique in that it has anti-inflammatory effects and may be effective in some dogs with mild disease. Corticosteroids are anti-inflammatory drugs that decrease the inflammation and swelling of the airway walls. These medications are most effective for treatment of chronic bronchitis. Side effects of corticosteroids may include increased appetite, increased urination, increased thirst, and anxiety (pacing, restlessness). Corticosteroid inhaler therapy is highly effective; however, patient compliance to this type of treatment is unpredictable.

Prognosis

Prognosis is variable with this disease. In most dogs, permanent damage to the airways has occurred and the disease cannot be cured. With proper medical management, clinical signs can usually be controlled and further damage to the bronchi can be stopped or slowed. Periodic relapses of cough are not unusual and require treatment. Cough is often not entirely eliminated, but reduced in patients with chronic bronchitis.

Some dogs with chronic bronchitis develop severe irreversible changes to the airways termed bronchiectasis. These dogs are highly susceptible to recurrent pneumonia. A sudden increase in cough in patients with bronchiectasis requires prompt evaluation and chest radiographs to determine whether pneumonia is present.



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