



ACVIM

Neurology
Fact Sheet

ACVIM Fact Sheet: Laryngeal Paralysis

Overview

Laryngeal paralysis is a common condition of middle to older aged dogs that involves loss of normal function of the larynx. The larynx is a collection of cartilage flaps, or laryngeal folds that sit in the back of the throat over the entrance to the trachea (wind pipe). Muscles attach to the larynx allowing it to open when breathing and close when the dog is eating and drinking to protect the airway. When the larynx becomes paralyzed, the folds remain in the closed position even when the dog is trying to breathe. Breathing becomes labored and difficult.

There are many potential causes of laryngeal paralysis, but the most common cause is idiopathic. This means there is not an identifiable underlying cause. The most common presentation occurs in older dogs particularly Labrador Retrievers and Golden Retrievers. St. Bernards, Newfoundlands and English Setters are also commonly affected. Most of the time laryngeal paralysis does not progress to involve other parts of the body. However, some dogs have been noted to develop neurologic signs in other parts of the body within a year of diagnosis suggesting that laryngeal paralysis is part of a more generalized problem (degenerative polyneuropathy affecting multiple nerves).

Signs & Symptoms

Clinical signs of laryngeal paralysis are primarily a result of progressive failure of the laryngeal muscles. Dogs with laryngeal paralysis are noisy when breathing in, particularly when panting. In early stages of the disease, owners may easily miss the abnormal sounds. As the disease progresses, the dog may fatigue easily, develop a bark change, and cough/gag when eating and drinking. Signs may progress for months to years before becoming a clinical problem for the dog. Severe upper airway obstruction can occur during strenuous exercise or in heat and humidity, which results in respiratory distress and collapse. The symptoms can snowball as increased breathing rates and panting cause the laryngeal folds to become swollen and inflamed and worsen airway obstruction. Dogs that have more generalized signs (degenerative polyneuropathy) may present with difficulty swallowing, regurgitation, and hind end weakness.

Diagnosis

Laryngeal paralysis is often suspected based on physical examination and neurologic examination findings. Increased sounds when the animal breathes in can usually be heard on physical examination. A neurologic examination will demonstrate evidence of generalized involvement in dogs with polyneuropathies. A sedated laryngeal exam with a laryngoscope, endoscope, ultrasound or CT may show failure of the larynx to open when attempting to breathe in. Thoracic radiographs can be performed to look for dilation of the esophagus, which can be seen with generalized involvement. General blood work (complete blood count [CBC] and serum biochemistry profile) can demonstrate evidence

of metabolic diseases, myopathies, endocrine diseases or infections. Since some cases of laryngeal paralysis have been linked to hypothyroidism, thyroid function testing may be performed.

Treatment & Aftercare

Treatment options can vary widely depending on the severity of signs and quality of life. Dogs that are not severely affected may be managed conservatively. Conservative management involves moderation in exercise, weight loss and possibly anti-inflammatory medications to reduce laryngeal swelling.

Dogs that have severe difficulty breathing may be candidates for surgery. Multiple surgical techniques have been described, however “laryngeal tie back” surgery is the most commonly performed. This procedure, also known as arytenoid lateralization involves suturing one or both sides of the larynx into a permanently open position to relieve upper airway obstruction. Tie back surgical procedures carry the risk of leaving the airway unprotected and increase the risk for aspiration pneumonia. As a last resort, a tracheostomy can be performed.

Prognosis

Prognosis for improvement of clinical signs and quality of life is generally good to excellent for idiopathic laryngeal paralysis. Unilateral (one sided) laryngeal tie back surgery usually results in less respiratory distress, less respiratory noise, and improved exercise tolerance, but leaves dogs at risk for developing aspiration pneumonia.

Dogs with more generalized signs (degenerative polyneuropathy) progress to develop additional neurologic signs around one year following diagnosis. Unfortunately, it can be difficult to predict which dogs will progress to develop more generalized signs. However, dogs that do not develop more generalized signs can continue to live a good quality of life following successful treatment of laryngeal paralysis.

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