



Animal Emergency & Referral Associates

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Laryngeal Paralysis

Idiopathic laryngeal paralysis (ILP) is a common acquired disorder seen mostly in older large breed dogs, especially Labradors and Golden Retrievers. Most of these patients present to their veterinarian with slowly progressive signs of upper airway obstruction. Occasionally, young patients will present with congenital inherited laryngeal paralysis. The most common breeds affected with this form of laryngeal paralysis are Siberian Huskies & Bouviers des Flandres. Laryngeal paralysis can also be secondary to traumatic injury, neoplasia and neck surgery. It has been seen in association with several disease processes including hypothyroidism, neuromuscular disease and myasthenia gravis. The most common form of laryngeal paralysis is described as being “idiopathic” (i.e. no known cause).

ILP is characterized by neurogenic atrophy of the laryngeal muscles due to degeneration of the two main nerves supplying the larynx, the recurrent and cranial laryngeal nerves. The larynx is like a cartilage “box” at the top of the trachea which has two doors (arytenoid cartilages) that open during inspiration and close when the patient swallows food or water. In laryngeal paralysis, the function of these cartilages becomes impaired because the muscles controlling them become progressively flaccid. The result is a change in the sound of breathing - we call it stridor. It is a hoarse, constricted airway noise accompanied by panting, exercise intolerance, voice change (higher pitched or absent bark) and sometimes collapse and cyanosis. The disease frequently becomes life threatening particularly in hot weather under periods of stress (including exercise). Other signs often exist as well.

Because the larynx is not functioning properly, there is an increased risk of food or water being inhaled resulting in a condition called aspiration pneumonia. Many of these patients also frequently gag and have signs of altered esophageal function (such as regurgitation) due to degeneration of other nerves supplying the esophagus (the para-recurrent laryngeal nerves). This also increases the risk of aspiration pneumonia.

Many patients will also develop a more generalized form of peripheral nerve degeneration, referred to as generalized peripheral neuropathy. These

patients will develop generalized weakness and have trouble walking and may get worse over time. To complicate matters, most older dogs usually have underlying orthopedic disorders such as hip dysplasia and osteoarthritis which also result in hindquarter weakness and make the diagnosis of peripheral neuropathy more difficult.

The treatment for laryngeal paralysis is surgery. There are several different procedures that have been described over the past 30 years, but the most frequently performed technique used today is the unilateral arytenoid lateralization procedure (nick-named the “tieback”). In this procedure one of the arytenoid cartilages is sutured in a slightly abducted position to increase airflow. The surgery is quite successful at achieving this goal but it increases the already existing risk of aspiration pneumonia. In addition, these patients will still cough at times, especially when drinking water. Those patients who gag or regurgitate food will continue to do so. The risk of progressive polyneuropathy also remains, with some patients developing debilitating generalized disease.

In addition to timely pre-operative lab work and chest radiographs the day of surgery, electrodiagnostic testing can be performed by the Neurology department to document the existence of polyneuropathy. In some patients, this may have important prognostic implications.

Most dogs will show significant improvement with surgery though respiratory function will not be perfectly normal and owners will need to modify their home care (e.g. avoiding extremes of heat and exercise-induced stress, avoiding swimming, elevating food and water bowls, etc).

The complication rate has been reported to vary from 25-50%. These complications are often mild, and include panting, coughing, gagging or throat clearing, occasional vomiting and permanent voice change. Sometimes more serious complications may develop, such as aspiration pneumonia and neurologic signs (muscle atrophy, trouble eating, severe regurgitation/vomiting and profound limb weakness) due to progressive polyneuropathy. Occasionally these complications can be fatal.