Laryngeal Paralysis

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Normal Laryngeal Anatomy

The larynx is commonly known as the voice box. It is not only where sound comes from, more importantly, it marks the entrance to the airway. The larynx closes off the respiratory tract during eating and drinking to prevent aspiration (inhaling of food). During inspiration the arytenoid cartilages (the entrance to the larynx) open (abduct) to allow unrestricted airflow. During expiration they relax. Their normal movement is essential to easy, efficient breathing.

What is Laryngeal Paralysis?

Laryngeal paralysis occurs when the abductor muscles (muscles that open the arytenoid cartilage) of the larynx do not work properly. This means the cartilage does not open during inspiration so the airway is smaller than normal. This leads to increased pressure in the airway which can cause swelling, inflammation and collapse of the local tissues. It is similar to breathing in and out through a straw. This causes anxiety which leads to increased panting and respiration rate which only worsens the situation. Heat stroke and collapse are common consequences of laryngeal paralysis and require emergency treatment.

Normally this is seen in older dogs around 10-12 years of age. It is a degenerative process which affects the nerves that supply the abductor muscles. It can also be associated with a generalized neuropathy involving the pelvic limbs and occasionally the esophagus.

Labrador retrievers are the most commonly affected breed.

Signs and Symptoms

- Panting even when in a cool, quiet location
- Exercise intolerance
- Voice/Bark change
- Loud “roaring” sound when breathing
- Gasping and distress when severe
- Increased respiratory rate and effort

Diagnosis

Diagnosis starts with listening to your pet in the examination room. There is a characteristic sound and breathing pattern we often recognize.

Chest radiographs are taken to rule out aspiration pneumonia (secondary to inhaling food material), megaesophagus (an enlarged esophagus), and signs of concurrent disease. Complete blood chemistries and thyroid testing are also important to evaluate overall health.

The next step is a sedated laryngeal examination. This allows us to evaluate the arytenoids cartilage and determine if they are moving normally during the breathing cycle. It also rules out other potential causes.
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When is Surgery Indicated?

Surgery is indicated when your pet’s quality of life is compromised by the decreased airway size and the increased effort of breathing. Many animals can barely go for a short walk due to this disease process. Some of our patients will have concurrent illnesses which may influence the decision of going to surgery.

Consultation and Surgery Scheduling

It is important to start with a surgical consultation for full evaluation of your pet. We will discuss laryngeal paralysis in detail, review concurrent diseases and evaluate your pet for any complicating factors.

As many of our patients with laryngeal paralysis are older, we want to be sure to evaluate your dog and discuss all treatment options to find the best option for your family.

We can perform surgery the same day as consultation in most cases and can move from laryngeal examination to surgery in one anesthetic episode.

Emergency surgery is also available if indicated.

Patients usually stay with us overnight after surgery for pain management, post-anesthesia monitoring and incision management. We have a veterinarian monitoring our patients 24 hours a day.

Left Arytenoid Lateralization

The goal of surgical treatment is to relieve the airway obstruction while maintaining protection of the airways. Surgery involves opening the airway by suturing the left arytenoid to other cartilage in the larynx so that it is in a more open position. This allows an increased airway diameter and more comfortable breathing.

Recovery and Prognosis

The most common complication is aspiration pneumonia which can be seen in up to 25% of patients. It is usually managed with oral antibiotics but has the potential to be more severe. Swimming is not allowed due to the potential for aspiration. We also recommend switching from a collar to a harness to remove pressure on the neck. Elevated food and water are also recommended. Walking and being active with your pet during the cooler times of the day can also be beneficial.

Patients do well with surgery and often become much more active and have a zest for life again. At home care consists of rest and short leash walks for 2 weeks post-operatively, followed by a slow return to normal activity.