

Canine Laryngeal Paralysis

A PowerPage Presented By



Canine laryngeal paralysis is typically an idiopathic disease of older dogs which can result in severe dyspnea and death if not recognized. There are several key items to know about laryngeal paralysis that aid in making a timely diagnosis. Treatment options are not without risk and owners need to be thoroughly educated prior to performing surgery. This PowerPage focuses primarily on idiopathic laryngeal paralysis, its treatment, and outcome.

Key Points

- Idiopathic laryngeal paralysis is the most common presentation
- Older Labradors and Golden retrievers
- **Voice change, inspiratory stridor**, and dyspnea
- Laryngeal exam for definitive diagnosis
- Most common treatment is **cricoarytenoid lateralization**

Pertinent Anatomy

- Cricoarytenoideus dorsalis muscle
 - Responsible for abduction of the arytenoid cartilage
 - This results in opening of airway
- **Recurrent laryngeal nerve**
 - Innervates the cricoarytenoideus dorsalis
- Cricoarytenoid cartilage
 - Has two parts
 - Corniculate process
 - Cuneiform process

Causes of Laryngeal Paralysis

- Acquired or congenital forms
 - Acquired is far more common
- Idiopathic
 - **Most common**
- Trauma
- Cranial mediastinal or cervical mass compressing recurrent laryngeal nerve
- Neuropathy or polymyopathy
- Hypothyroidism

Clinical Signs and Diagnosis

Signalment

- Older dogs (9 years)
- Labrador retrievers, Golden retrievers, Saint bernards, and Irish setters predisposed
- Has been reported in the cat

Presenting signs

- Affected dogs may exhibit any of the following:
 - Coughing
 - **Voice change**
 - Gagging, especially during eating
 - Dysphagia
 - **Dyspnea**
 - Cyanosis
 - Syncope
 - Decreased endurance
 - **Inspiratory stridor**
 - **Aspiration pneumonia**

Diagnosis

- Definitive diagnosis is via laryngeal examination
 - This is done under a very light plane of anesthesia (to maintain laryngeal function)
 - **Doxapram** (stimulates respiration) may be administered to help visualize arytenoid function
 - May see unilateral or bilateral paralysis
 - When patient inhales, the arytenoids **should abduct in a normal patient**

Treatment and Outcome

- 1) **Crycoarytenoid lateralization** (“Laryngeal tie-back”)
 - a. Most feel this is the treatment of choice
 - b. 10-28% will develop pneumonia eventually after surgery
 - i. Of those, up to 14% may die from pneumonia
 - c. If no complications owners report an improvement in quality of life
- 2) Partial laryngectomy
 - a. 50% complication rate with laryngeal webbing being the most common complication
- 3) Permanent tracheostomy
 - a. Appropriate in patients that are at increased risk of aspiration pneumonia (such as concurrent megaesophagus)
- 4) Reinnervation of laryngeal muscles
 - a. May take a long time for laryngeal function to resume so not practical
- 5) Castellated laryngofissure
 - a. Associated with severe post-operative bleeding and edema.
 - b. Not commonly performed
- 6) Video and laser assisted unilateral partial arytenoidectomy
 - a. New technique described in 2009. (Olivieri M. [Video-Assisted left partial arytenoidectomy by diode laser photoablation for treatment of canine laryngeal paralysis](#). *Veterinary Surgery* 38:339-344, 2009)
 - b. Appears to have good results in a case series of 20 dogs. Only 2 dogs developed aspiration pneumonia

