

**LECTURE TITLE:
HOW I TREAT LARYNGEAL PARALYSIS**

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INTRODUCTION

Laryngeal paralysis (LP) is a relatively common condition affecting the upper respiratory tract of dogs and, more rarely, cats. The condition is characterised by the failure of the arytenoid cartilages to abduct during inspiration due to dysfunction of the recurrent laryngeal nerve. It results in upper airway obstruction, stridor, and potentially life-threatening respiratory distress. Affected animals may present with varying degrees of exercise intolerance, cyanosis, or collapse. While LP can occur congenitally, particularly in younger dogs of certain breeds, it is more frequently acquired and idiopathic in older large-breed dogs.

In cats, laryngeal paralysis is uncommon and more often secondary to trauma, neoplasia, or iatrogenic causes. This lecture provides a structured approach to the diagnosis, management, and surgical treatment of laryngeal paralysis based on my clinical experience and supported by up-to-date literature.

AETIOLOGY AND SIGNALMENT

In dogs, LP is typically classified as congenital or acquired:

- Congenital LP is most often reported in Siberian Huskies, Bull Terriers, and Bouvier des Flandres. It is typically seen in young dogs and may be associated with generalised polyneuropathy.
- Acquired idiopathic LP primarily affects older, large-breed dogs such as Labrador Retrievers, Golden Retrievers, and Irish Setters. Increasingly, acquired LP is recognised as part of a broader condition termed Geriatric Onset Laryngeal Paralysis Polyneuropathy (GOLPP), which may include esophageal motility disorders, generalised weakness, and proprioceptive deficits.

Cats present with a broader range of causes, including trauma, neoplasia, iatrogenic nerve damage (e.g. following thyroidectomy), or inflammatory neuropathies. Siamese and Burmese cats may be overrepresented in rare congenital forms.

CLINICAL SIGNS

Typical presenting signs include:

- Inspiratory stridor, particularly during excitement or exertion
- Voice changes or hoarseness
- Exercise intolerance
- Gagging or coughing, especially during eating or drinking
- Cyanosis or syncope in severe cases
- Dysphagia or regurgitation (in cases with concurrent esophageal dysfunction)

DIAGNOSTIC APPROACH

A thorough diagnostic work-up is essential to confirm LP, exclude other causes of upper airway obstruction, and evaluate for comorbidities.

1. Physical Examination and History

- Stridor and voice changes are common findings
- Careful neurologic examination to evaluate for generalised neuropathy

2. Laryngoscopy

- Performed under light anesthesia (e.g. propofol with or without doxapram)
- Visual confirmation of inadequate or absent arytenoid abduction during inspiration
- Bilateral paralysis is more common than unilateral in acquired cases

3. Thoracic Radiography

- Assess for evidence of aspiration pneumonia or megaesophagus
- Evaluate cardiac silhouette and potential masses

4. Neurologic and Electromyographic (EMG) Evaluation

- Performed in advanced or atypical cases
- Helps confirm polyneuropathy associated with GOLPP

5. Blood Work and CRP Measurement

- Useful in preoperative screening and in cases of suspected aspiration pneumonia

6. Bronchoalveolar Lavage (BAL)

- May be performed if radiographs reveal pulmonary infiltrates; helps guide antimicrobial therapy

Advanced imaging (CT/MRI) is reserved for cases where intracranial or cervical spinal cord pathology is suspected.

ASSOCIATED CONDITIONS: MEGAOESOPHAGUS AND GOLPP

Up to 75% of dogs with idiopathic LP may have concurrent esophageal dysfunction, even in the absence of radiographically visible megaesophagus. Stanley et al. (2010) demonstrated that esophageal motility disorders may contribute to regurgitation, increased aspiration risk, and poor outcome if unrecognised [1]. Dogs with GOLPP require holistic management, and the decision to operate should weigh the severity of respiratory signs against the extent of systemic neurologic impairment.

MEDICAL MANAGEMENT

Medical management is rarely definitive but may be considered in:

- Very early-stage cases
- Patients with minimal clinical signs and no evidence of respiratory distress
- Cases where surgical risk is unacceptably high

Conservative strategies include exercise restriction, environmental cooling, stress minimisation, sedation (e.g., acepromazine), and oxygen supplementation in acute settings. However, most dogs will progress to require surgical intervention due to worsening clinical signs.

SURGICAL TREATMENT: UNILATERAL ARYTENOID LATERALIZATION

Procedure of Choice:

The unilateral arytenoid lateralization ("tie-back") remains the gold standard surgical treatment

for acquired LP in dogs.

Surgical Technique:

- Performed under general anesthesia with the patient in lateral recumbency
- A lateral cervical approach is made to access the arytenoid cartilage
- Permanent lateralization is achieved using non-absorbable sutures placed between the muscular process of the arytenoid and the cricoid or thyroid cartilage
- Only one side (usually the left) is lateralized to reduce the risk of aspiration

Key Points:

- Accurate placement of sutures is critical to prevent over- or under-correction
- Gentle tissue handling reduces postoperative swelling and risk of laryngeal edema

I do not perform partial arytenoidectomy, ventriculocordectomy, or permanent tracheostomy in these cases, as they are associated with higher complication rates or reduced efficacy.

MANAGEMENT OF EMERGENCY CASES

Acute upper airway obstruction due to LP is a surgical emergency. Stabilisation before surgery includes:

- Sedation (e.g. acepromazine, butorphanol)
- Cooling and oxygen therapy
- Intubation and mechanical ventilation if required
- CRP and thoracic radiographs to assess for aspiration pneumonia
- BAL may be indicated to guide antibiotic therapy preoperatively

POSTOPERATIVE CARE

Postoperative care is aimed at minimising complications, especially aspiration pneumonia.

- Hospitalisation is minimised — most dogs are discharged within 24–48 hours
- Feeding: No major alterations; patients are fed more frequently in smaller portions
- Drinking: Care should be taken to encourage small-volume water intake
- Activity: Restricted for 2–3 weeks post-op to allow tissue healing

COMPLICATIONS AND LONG-TERM OUTCOME

The most significant postoperative complication is aspiration pneumonia, which can occur in 10–30% of cases. Risk factors include:

- Esophageal dysfunction
- Over-lateralization
- Poor swallowing coordination

Management of aspiration pneumonia includes antibiotics (guided by BAL if available), supportive care, and sometimes hospitalisation.

Prognosis:

- 90–95% of dogs show marked clinical improvement
- Long-term prognosis is generally good, though LP is part of a progressive polyneuropathy in many cases

MacPhail (2020) emphasises that, when properly selected and stabilised, surgical candidates enjoy a substantial improvement in quality of life and exercise tolerance [2].

CLIENT COMMUNICATION

It is essential that general practitioners and owners understand:

- LP is treatable, not terminal
- Referral for surgical consultation should not be delayed if signs are progressing
- GOLPP is progressive, and clients should be prepared for potential future neurologic decline
- Postoperative complications can occur but are manageable with proper follow-up

CONCLUSION

Laryngeal paralysis is a serious but manageable condition. With timely diagnosis, appropriate surgical intervention, and attention to perioperative care, most dogs experience a dramatic improvement in respiratory function and quality of life. Recognising and addressing comorbidities like esophageal dysfunction is critical for surgical success. As a surgeon, I approach each case systematically — prioritising airway stabilisation, surgical precision, and proactive client education.

REFERENCES

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3. Thieman Mankin KM. Geriatric Onset Laryngeal Paralysis Polyneuropathy (GOLPP) in Dogs: A Case Series. *J Vet Intern Med*. 2023;37(1):45–52.

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