

Laryngeal Paralysis

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Laryngeal Paralysis is a condition that develops in older large breed dogs, especially Labrador retrievers. The exact cause is not known. There is also a congenital form that occurs in young dogs (Bouvier, huskies). In the acquired form there is a dysfunction of the laryngeal muscles, the recurrent laryngeal nerves or vagal nerves or there is fibrosis of the laryngeal cartilages. The result is that laryngeal muscles fail to abduct the vocal folds as the dog takes a breath. Clinical signs include a persistent inspiratory stridor or noise as well as exercise intolerance during activity. Because dogs also need to regulate their body temperature through respiration this condition can become pronounced in warmer weather and result in heat stroke and collapse.

Laryngeal anatomy: Figure 1 diagrams the anatomy of the larynx, There are three sets of paired cartilage surrounded by muscles that act to open and close the *rima glottis* (laryngeal inlet)

Diagnosis: Laryngeal paralysis is suspected when clinical signs such as inspiratory stridor, exercise intolerance and episodes of collapse occur in the absence of other neurologic or cardiorespiratory conditions. A laryngeal exam under a light plane of sedation is usually diagnostic to reveal the inability of the folds to abduct or open the airway (Figure 2a)

Arytenoid lateralization: The surgery to improve airflow through the larynx. The laryngeal cartilages are identified on one side of the patient's neck. (Figure 3) The **arytenoid cartilage** is freed and retracted up and away and then sutured in place to either the **thyroid cartilage** or both the **cricoid and thyroid cartilage**. This effectively pulls the arytenoid and vocal folds in the larynx out of the way and widens the opening of the airway (Figure 2b and 3). Only one side is operated to open the airway enough to improve respiration but still retain protection of the airway from accidental inhalation of food or water. After surgery food and water are introduced slowly to avoid the patients from aspirating any particles. In time normal feeding can be resumed. A temporary cough may develop after surgery until inflammation from the procedure resolves. The patient's bark may sound slightly different after this procedure because the vocal fold has been retracted. These patients should be limited in their activity and kept calm for the first 2 weeks to allow healing to occur.

Prognosis: Most patients improve dramatically after surgery. However it is advised to still limit these patients from excessive activity for the rest of their lives, especially during warm or humid weather.

Figure 1

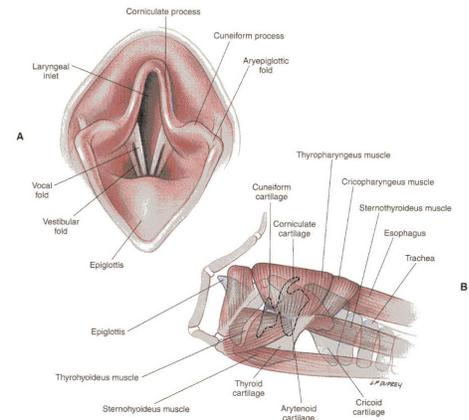


FIG 30-1 Laryngeal anatomy. A, Oral view. B, Lateral view.

Figure 2a



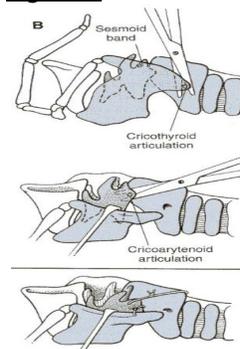
Figure 2a—Preoperative laryngoscopy revealed laryngeal edema and inflammation as well as laryngeal paralysis in this dog (also pictured postoperatively in Figure 5).

Figure 2b



Figure 2b—Laryngoscopic view of dog with laryngeal paralysis when extubated immediately following surgery (unilateral cricoarytenoid laryngoplasty). The patient's left arytenoid cartilage is seen in the abducted position.

Figure 3



Illustrations are reproduced from the following sources:

Figure 1: Fossum TW. Small Animal Surgery. 2nd ed. Mosby St Louis, 2002

Figure 2a and b: LaHue TR. Treatment of Laryngeal Paralysis in Dogs by Unilateral Cricothyroid Laryngoplasty. J AmAnim Hosp Assoc. 25: 317-324, 1989

Figure 3: Fossum TW. Small Animal Surgery. 2nd ed. Mosby St Louis, 2002