

Laryngeal Paralysis

Surgery Service



**Michigan Veterinary
Specialistssm**

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We Can Help

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- Soft Tissue Surgery
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Locations

Auburn Hills

3412 E. Walton Blvd.
(West of Squirrel Rd.)
(248) 371-3713

Grand Rapids

1425 Michigan St. NE
(East of Fuller Rd.)
(616) 284-5300

MVS Southfield

29080 Inkster Rd.
(North of 12 Mile Rd.)
(248) 354-6660

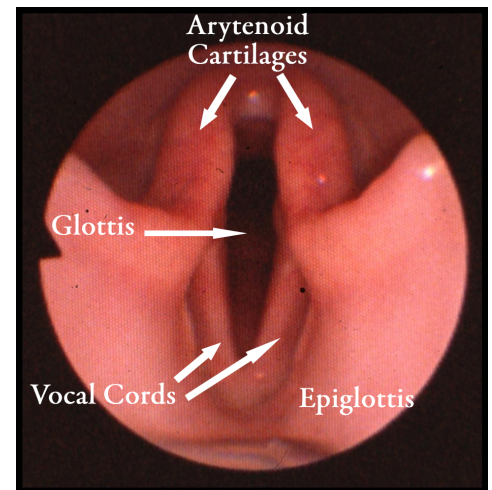
What is laryngeal paralysis?

Laryngeal paralysis is a condition in which the muscles that open the voice box become weakened due to a degenerative disease of the nerves and muscles. The result is the difficulty breathing, especially during stress or on hot humid days. This condition eventually will affect all muscles of the body, which can cause generalized weakness and swallowing difficulty. Most dogs that develop laryngeal paralysis are geriatric, large breed dogs. Occasionally this problem is seen in young, large breed dogs and the cause is an inherited genetic disease. This problem uncommonly affects cats.

Anatomy

The larynx is known in layman's terms as the voice box. The larynx consists of the vocal cords, which allow vocalization and the cartilages that provide the semi flexible structure of the larynx. The arytenoid cartilages form the structural "doors" of the larynx. The glottis is the doorway of the airway of the larynx through which air passes from the mouth into the windpipe and then into the lungs. There are two sets of muscles that attach on the arytenoid cartilages that control the larynx. One set of muscles serves to open the "doors" and the other set closes the "doors". The epiglottis is a flap or valve that flips over the larynx during swallowing to help prevent aspiration of food or water into the windpipe.

The larynx consists of the vocal



Signs and diagnosis

Signs of laryngeal paralysis are more apparent in humid, hot weather and include exercise intolerance, difficulty breathing in (inspiratory dyspnea), and raspy or noisy breathing sounds. In severe cases, exercise or excitement may cause a dog to develop a blue or gray color of the tongue or gums due to a lack of oxygen. Collapse and subsequent death may occur if the problem is untreated. Cats initially may display signs of hoarse purring, which may progress to exercise intolerance.

In order to examine the larynx, your companion will be lightly anesthetized. As the pet breathes in and out, the function of the larynx is evaluated. When the dog breathes in, the negative pressure from the windpipe will pull the arytenoid cartilages together, thus compromising the size of the glottis. This is how a diagnosis of laryngeal paralysis is made. Additional testing may include a complete blood count, full chemistry profile, urinalysis, chest x-rays, neck x-rays, and a thyroid hormone profile.

The day of surgery

Our anesthesia and surgical team will prescribe a pain management program, both during and after surgery that will keep your companion comfortable. This will include a combination of general anesthesia, injectable analgesics, and oral analgesics.

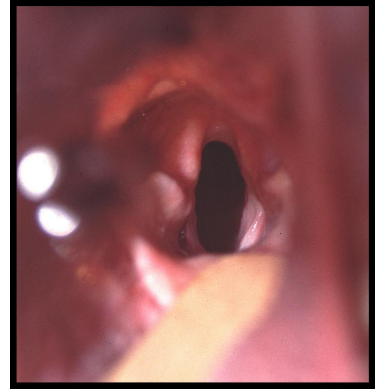
Laryngeal Paralysis Continued...

Treatment

A major contraindication for surgery is swallowing difficulties or regurgitation, as these dogs are at risk to develop pneumonia after surgery. It is therefore very important that you inform the surgeon of any of these problems that your dog may be experiencing.

General anesthesia is induced and the throat is examined again to confirm a diagnosis of laryngeal paralysis and rule out tumors that may be obstructing airflow. The side of the neck (usually the left) is shaved. An incision is made on the side of the neck over the larynx. Two permanent sutures are used to replace the paralyzed muscle that pulls the arytenoid cartilage back to open the glottis. This is called a laryngeal tie-back surgery.

This photograph (right) of a larynx after surgery shows that the airway is nicely open, allowing the patient to breathe well.



Aftercare and results

After surgery has been completed your companion will be monitored in the intensive care unit. Most patients having a routine tie-back surgery are released from our hospital the same or following day after surgery. After your pet leaves the hospital, pain is controlled with oral medication on an as needed basis. Antibiotics may be prescribed to your pet if pneumonia is present. Feeding and water bowls should be elevated about 8 to 10 inches off the floor. Canned food should be cut into chunks for the couple of weeks. Kibble also could be fed, but should be softened with warm water. Whichever food type causes less coughing should be fed. Coughing during or after drinking is very common, but will typically lessen over a period of six weeks. Overall, approximately 18% of patients that have laryngeal paralysis and treatment with a tie-back surgery will develop pneumonia. Signs of this include a persistent moist cough and lethargy. Early treatment with antibiotics is successful in most cases.

Swimming will no longer be permitted. If your pet's head should go under water, the larynx would not be able to close and drowning could occur. Exercise should be restricted for one month to prevent break down of the laryngeal surgery. A harness should be used instead of a collar, in order to take pressure off the windpipe and the larynx.

Most pets do well following laryngeal surgery. Breathing is greatly improved and your pet should not get into a breathing crisis again. Your pet likely will not be able to bark again or the bark will be hoarse. During heavy panting your pet could still have increased respiratory noise, as only one side of the larynx has been tied open and the other vocal cord may flutter as air moves in and out.

Laryngeal Paralysis Continued...

Assessment and recommendations

Patient: _____ Date: _____

Treatment

- Laryngeal paralysis is suspected/diagnosed and surgery is recommended at Michigan Veterinary Specialists
- No surgery is recommended at this time, but a follow-up evaluation should be performed on _____

The following has been prescribed

- No medications or special diet are necessary at this time
- Diet: _____
- Sedative: _____
- Antibiotic: _____
- Other medication: _____

Exercise

- Unlimited
- Confine your pet to the house other than very short leash walks necessary for bowel movements and urination
- Restrict exercise to leash walks 10 minutes twice daily

Preparation for surgery

- Start fasting your companion at midnight before the surgery; water should not be withheld
- Pepcid AC 10 mg tablets: give _____ tablets with water (if needed use a syringe) at 6 AM on the day of surgery

*Composed by Daniel A. Degner, DVM, DACVS
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