

Laryngeal Paralysis

ABOUT THE DIAGNOSIS

Laryngeal paralysis is a condition that affects dogs and, very rarely, cats. In animals, as in people, the larynx is commonly called the voice box. It is situated in the neck near the beginning of the windpipe (trachea), which carries air to and from the lungs during breathing. The larynx also contains the vocal cords. As air moves over the vocal cords, sound or voice is produced. The opening of the larynx consists, in part, of two “gates.” These gates are cartilage plates that open to allow air into the lungs when a dog inhales. When exhaling air, these laryngeal cartilage plates open slightly to let air out of the body. When a dog swallows, the cartilages close tightly to prevent food and water from entering the lungs.

In a dog with laryngeal paralysis, one or both of the cartilages (the “gates”) responsible for opening and closing the larynx are unable to open properly when the dog inhales. The amount of air reaching the lungs is decreased. Breathing is labored, especially after exercise or in hot weather, when very labored breathing and even respiratory distress, accompanied by loud wheezing sounds during inhalation, may be present. This problem most commonly occurs in large breed, adult dogs, with the age of first symptoms typically being between 6 and 12 years of age. Rarely, in some breeds such as the Bouvier des Flandres, the condition can be present at birth (congenital).

The cause of laryngeal paralysis is usually unknown (idiopathic). Other diseases have been linked to this condition, although a true cause-and-effect relationship has not yet been proven. These diseases include hypothyroidism (decreased thyroid gland activity) and hyperadrenocorticism (Cushing’s disease, which is an increased amount of certain hormones responsible for metabolism). A rare cause of laryngeal paralysis is the presence of a tumor near the nerve(s) that control(s) the movement of the cartilages or nerve injury from trauma. In most cases, however, no cause is found.

Outward symptoms of laryngeal paralysis include the development of breathing problems when a dog exercises, becomes excited, or if the dog becomes overheated. A characteristic wheezing sound during exertion is very suggestive of laryngeal paralysis, and you may help your veterinarian and your dog enormously by videotaping this—or conversely, videotaping normal breathing sounds during exercise, making laryngeal paralysis much less likely—for your next veterinary visit; be sure to include audio so the veterinarian can hear the sound of breathing, but avoid overexerting your dog beyond his/her usual routine, as excessive activity could be dangerous.

Other symptoms may include gagging or coughing when eating or drinking. Because movements of the larynx are uncoordinated in dogs with laryngeal paralysis, food can slip through to the lungs and cause pneumonia (aspiration). With laryngeal paralysis, a dog’s voice can change, and a change in the sound of the bark is often one of the early markers of laryngeal paralysis (though not necessarily indicating an immediate need for intervention/surgery). During a severe episode, so little air may reach the lungs that some severely affected dogs may faint.

Laryngeal paralysis is often suspected based on symptoms, the breed and age of the dog, and the history (forming a “presumptive diagnosis”). The condition is definitively confirmed with a procedure called laryngoscopy. For laryngoscopy, a dog is lightly sedated. Either through direct visualization or using an endoscope (small tube that has a camera attached to its end), the movement of the cartilages is observed as the dog breathes;

limited movement indicates laryngeal paralysis. An ultrasound examination of the larynx is a novel approach that can also help to diagnose this disease in some dogs.

Your veterinarian may take x-rays of your dog’s neck and chest to help determine if pneumonia or any other respiratory problems may be occurring simultaneously. A blood sample may be taken at several points in time to help to determine if the thyroid and adrenal glands are functioning properly.

LIVING WITH THE DIAGNOSIS

Laryngeal paralysis is a progressively worsening, potentially serious condition. When a dog suffers a sudden breathing crisis as a result of this condition, it is an emergency. In such situations of respiratory distress, try to keep the dog as calm as possible. If the dog has become severely overheated, cool damp cloths can be placed on the footpads and belly. If outside, the dog can be hosed down with cool water. *Do not* place the dog in an ice bath because this causes the body temperature to fall too quickly, which can cause other serious problems. If there is labored breathing beyond normal panting, take your dog to your veterinarian or the closest emergency clinic immediately, before a life-threatening crisis develops.

Once the diagnosis of laryngeal paralysis is confirmed, it is important to keep the dog out of situations that cause excitement. Do not allow the dog to become overheated. For dogs with moderate or severe laryngeal paralysis, a surgical procedure can be performed that props the paralyzed larynx in a partially open position and prevents episodes of respiratory distress from recurring.

TREATMENT

Sudden breathing difficulties caused by laryngeal paralysis require immediate intervention. The veterinarian may give a sedative to help the dog calm down and breathe more comfortably. An anti-inflammatory (e.g., a corticosteroid injection) can be given to help control swelling in the throat. In some cases, a veterinarian will need to temporarily insert a tube into the windpipe, through which the dog can breathe (tracheostomy) and prevent suffocation.

Long-term treatment involves a surgical procedure. In this procedure, part of the laryngeal cartilage that does not open properly is sutured into a permanently open position (tieback procedure). This surgery can be performed by a veterinary surgical specialist. Many factors must be considered before a dog can undergo this surgery; not all dogs with laryngeal paralysis are candidates for this surgery. Your veterinarian can discuss this option with you. Importantly, this surgical procedure increases the risk of a dog accidentally inhaling food into the trachea and lungs, a process that can be very serious and seems to affect approximately 20% of patients postoperatively. This risk is lifelong after the surgery, but it is worth taking if laryngeal paralysis is sufficiently severe that withholding surgery would carry an even greater risk of problems due to unchecked laryngeal paralysis.

Aftercare is an essential component of this surgery, and you play a vital role in this regard. Feeding needs to be reintroduced carefully, because a dog’s throat function is altered by the surgery. Many dogs do better eating from floor level (as usual), so avoid raising the food bowl. Some dogs do better with dry food/kibble, and virtually all dogs will benefit from eating slowly, which may require you to offer small meals, a bit at a time. Overall, the goal is to find a feeding approach that causes the least gagging or coughing.

Postoperative monitoring at home is also important: observing your dog for at least a few minutes three or more times a day can help you identify breathing difficulties that can indicate swelling or loosening of the surgical site (causing wheezy, noisy breathing in the throat) or labored, heavy breathing, often with fits of raspy coughing and ultimately listlessness and loss of energy and appetite; the latter symptoms could indicate aspiration pneumonitis, when particles of food have been inhaled into the lungs. Swelling, surgical breakdown, or aspiration pneumonitis are postoperative complications that can occur, overall, in a significant percentage (20%) of dogs that undergo surgery for laryngeal paralysis. Watching for symptoms of these problems at home can help your veterinarian intervene early if these problems occur; there is no better alternative than the surgery when a dog has laryngeal paralysis, and this monitoring helps reduce the impact of complications should they occur.

DOs

- Give medications exactly as directed.
- Begin a weight loss program for your dog if there is any degree of overweight or obesity; excess body fat limits the amount of expansion room for the lungs during breathing, increases the work of exercising and therefore the intensity of breathing, and makes dogs prone to overheating, all of which are reversible but otherwise are very serious potential triggers for a future laryngeal paralysis crisis.
- See your veterinarian or go to the nearest emergency clinic if your dog is having breathing difficulty.

DON'Ts

- Do not allow your dog to become overheated or overexcited, if possible.
- Do not force your dog to continue exercising if breathing problems begin.
- Do not use an ice bath to cool an overheated dog.

WHEN TO CALL YOUR VETERINARIAN

- If any of the symptoms listed above arises for the first time in your dog.
- If your dog has had laryngeal surgery and develops gagging, coughing, or labored breathing when eating or drinking or signs of not feeling well (lethargy, loss of appetite, etc.).
- If you are unable to give medicine as scheduled.
- If you cannot return for a scheduled visit.

SIGNS TO WATCH FOR

- Breathing-related difficulties as described above, which warrant an immediate recheck.

Other information that may be useful (aspiration): "How-To" Client Education Sheets:

- How to Count Respirations and Monitor Respiratory Effort
- How to Provide Home Respiratory Therapy (Humidification, Nebulization, Coupage)

Practice Stamp or Name & Address