

Laryngeal Paralysis

By Dr. Karen Becker

Hi, this is Dr. Karen Becker. Laryngeal paralysis describes dysfunction of the nerves that control the muscles and the cartilage that open and close the larynx. The result is voice changes and sometimes difficulty eating or breathing.

The larynx, also known as the voice box, is located at the back of your dog's throat, and has several important jobs to do. It protects the lungs from aspiration when your pet swallows or vomits. It also allows for barking, meowing, growling, and other vocalizations to occur, and it allows the outside air to flow into the lungs. When your pet breathes, he pulls air in through his mouth and nose, through the larynx, and into the trachea and, of course, down into the lungs.

In a normal larynx, the cartilages open during breathing. But when the larynx is paralyzed, the cartilages don't open. They don't pull back and they don't close effectively, making it more difficult for your dog or cat to breathe normally.

Causes and Diagnosis

Acquired laryngeal paralysis is most often seen in older, large breed dogs, including the Labrador and golden retriever, the Saint Bernard, and the Siberian husky. Typically the larynx in these dogs is normal at birth, but the nerves and muscles controlling the laryngeal cartilages lose function over time.

Laryngeal paralysis can also be inherited, though it's less common than the acquired form. Breeds affected by the inherited form of the disease include the bouvier, the Siberian husky, the English sheepdog, and the Dalmatian. In Dalmatians, the condition is usually part of a larger disorder called laryngeal paralysis polyneuropathy complex.

In affected breeds, inherited laryngeal paralysis usually shows up in the form of breathing difficulty by the time a puppy is 2 to 6 months of age, so it strikes very early. It is thought that males of the affected breeds acquire the disorder at a rate of up to 3 times that of females. Laryngeal paralysis rarely occurs in cats. Those that do acquire this disorder are usually older cats that develop it as a result of trauma to the neck or neck surgery, still a form of trauma.

Acquired diseases of the voice box, including laryngeal paralysis — we sometimes call laryngeal paralysis “Lar Par” — are often idiopathic, meaning there is no identifiable cause. We don't know why it happens in dogs or cats. However, certain underlying issues can cause or exacerbate the condition, including vagal (vagus) nerve abnormalities, abnormality of the recurrent laryngeal nerves, a chest infection, inflammation or cancers that affect the throat, or immune mediated disorders, like hypothyroidism or Addison's, and certainly trauma of the musculature of the neck and throat.

In my opinion, cervical or neck trauma is the most common reason that this condition occurs, and oftentimes can be traced back to one of several predisposing factors: an acute leash accident involving the neck. Let's say a dog was tied out and went running and got to the end of the rope and didn't realize it, and he choked himself. Just a single episode of severe acute trauma to the neck where maybe you think, "Oh my gosh, that happened five years ago." And yes, he coughed for a day or two after, he really coughed or he maybe even spit up blood but he was fine. Those are those incidences that oftentimes people whose dog developed this condition later on are able to look back and say, "You know what? There was that one time when neck trauma happened."

Absolutely, a sudden jerk to the neck such as inappropriate training is another reason that I see. Kind of fear-based, old school dominant training where we pop the neck using maybe either a prong collar or a very tight choke collar, when we pop the trachea cartilage repeatedly as a means of training – not something any integrative vet would ever recommend – you could possibly end up with tracheal damage. There is a tremendous amount of pressure on the larynx because the collar sits right over the top of it. A dog that spends his entire life pulling on a leash, even if there was no popping, a dog that has tension on the leash that sits on top of the larynx absolutely could provide chronic low-grade stress to that part of his body.

A dog that's constantly pulling and applying pressure to that part of the throat will absolutely be more predisposed to do damage to his larynx overtime. This is one reason that vets, like myself, are so adamant about their being slacked on a leash when you walk your dog.

If you have a dog that's super fired up about walking and loves to walk in the first three blocks, is always pulling, is a chronic puller, the best thing you can do is buy a harness and there's lots of different types of harnesses. There literally are a dozen different types of harnesses depending on your dog's body shape and where they pull, how they like to walk, where you like to hook the leash. It doesn't matter what harness you decide on, but all harnesses take the pressure off the trachea. If you have a dog that pulls, absolutely, we recommend getting the pressure off the trachea to prevent laryngeal issues down the road.]

Symptoms

Oftentimes, the first sign of a problem with the larynx is that there is a voice change. For example, your dog's bark may take on a different tone or may sound hoarse or a different pitch. Abnormally loud inhalations are another symptom of laryngeal paralysis, along with gagging or choking while eating. Many dogs start snoring, that's a big one. They'll say, "You know my dog is 6 and just started snoring," and then you need to be thinking about laryngeal damage if that occurs. Situations that can worsen the problem include hot and humid temperatures, exercise, and obesity.

If the condition becomes severe, your pet may not be able to take in enough air, which obviously can become life-threatening. Oftentimes an experienced veterinarian will suspect laryngeal paralysis from simply observing the dog in the exam room and getting a brief history

of symptoms. Confirmation of this disease will require your veterinarian to look down the larynx while your pet is sedated. If the fold of the larynx doesn't open and close normally, that's a confirmed diagnosis.

Treatment

In extreme cases of Lar Par, where the patient becomes too hot or overworked and cannot move enough air, the patient will be taken to the emergency room. If you can see your dog turning purple and not breathing, the treatment is they go into an oxygen cage. It delivers 100 percent oxygen. That's an emergency situation that you would need to do if your pet has got that substantial laryngeal disease.

At that point, surgery is the treatment of choice for most cases of severe laryngeal paralysis, with the goal of permanently opening the larynx to increase airflow. This procedure is known as a laryngeal tie-back surgery and is usually performed by board certified soft tissue surgeons. During this surgery, one or two permanent heavy sutures, nylon sutures, are placed to hold the laryngeal cartilage open, allowing adequate air to continue to be passed into the lungs.

Typically only one side is tied back to help decrease the risk of potential aspiration pneumonia after the surgery. The tie-back procedure, like all surgical procedures, absolutely carries some risks, including bleeding, aspiration of stomach contents during surgery, or aspiration of food long after surgery. The four hallmarks of aspiration pneumonia are coughing, lethargy, poor appetite, and fever. All dogs that have had this surgery done need to know about those potential symptoms because they are at high risk for the life of the dog post-surgery.

Prevention and Recommendations

Obviously, preventing this degenerative condition from occurring is the goal, and proactive vets like myself really want to focus on what can we do with anything to reduce the likelihood that this is going to take place idiopathically. Ideally, we want all puppies to learn how to walk in a self-controlled manner on a leash without pulling. That would be ideal.

But what about those dogs who are adopted from shelters – God bless you if you did that – that have never learned how to walk on a leash? In fact, they're rambunctious and they pull. It's like walking a largemouth bass. They're all over. Constantly pulling back on a dog's neck is not going to teach him how to walk in a more self-controlled fashion. That rambunctious 9-month-old Labrador who still has not mastered walking on a leash, that's a really good time to invest in a harness that takes the pressure off the neck while he's learning how to walk responsibly on a leash.

Those puppies that have never gone to class, that just will almost string themselves up and bounce around from crazy excitement play on a leash, those puppies are at risk because their cartilage is still developing. Their necks are actually quite delicate. And they can do damage early on as puppies that will affect them much later in life, and permanent damage. Getting

those puppies out of collars and into harnesses is one thing that most proactive veterinarians will recommend that you do.

The best insurance against laryngeal damage is a harness system that does not go around your pet's neck, if you have a dog that can't walk sensibly on a leash. If you know your dog has had cervical trauma or is in the beginning stages of laryngeal paralysis, I recommend beginning a hefty protocol of cartilage supportive supplements. You can pick between one or several of them. Some that I suggest are methylsulfonylmethane (MSM), glucosamine sulfate, perna mussel which is also called green-lipped clam, eggshell membrane (not calcium), cetyl myristoleate, and hyaluronic acid.

[END]