Laryngeal Paralysis

There is a growing awareness of a breathing problem seen in many older Brittanys. As a Brittany owner and veterinarian, I have watched several of my own and friends' dogs suffer from this problem. While our breed is not listed as being predisposed, I believe, based on my own observations and conversations with colleagues and other Brittany owners, that our wonderful breed does suffer an increased incidence of laryngeal paralysis. I could speculate as to why; genetics, training methods that result in trauma to the neck or our wonderful breed's dislike of walking on a loose leash! The signs of this disorder are insidious in onset and many times attributed to other disorders. I believe that many veterinarians don't have a high index of suspicion for this disease and think of it more often in larger breed dogs. Even when it is suspected, because the signs are subtle and slowly progressive, owners and veterinarians are not quick to pursue a definitive diagnosis. Unfortunately, as I discuss below; when a crisis occurs, the prognosis for survival AND good quality of life is poor without rapid accurate diagnosis and aggressive treatment. While it is important to understand the risk of surgery and postsurgical complications, it is equally important to understand that doing nothing will result in a poor quality of life for your dog and the inevitable crisis will lead to a heart rending decision on your part and/or an unpleasant death for your dog. Surgery when done by an experienced veterinary surgeon with the expertise AND facility/staff to manage and avoid complications can lead to a good quality of life for your older dog. There are NO medical treatments that will allow your dog to breathe comfortably once this disease has advanced to the point where the airway opening is significantly affected.

So what exactly is the larynx? The larynx is a structure that is located at the top of the throat, just in front of the tubes that lead into the lungs (i.e., trachea) and stomach (i.e., esophagus). When the larynx is fully open, air can pass freely into and out of the lungs. When closed, as is the case when an animal swallows, the larynx prevents food, water, or other substances, including air, from entering the trachea. The larynx also houses the vocal chords and other structures. The larynx is a box primarily made out of cartilage and soft tissues. In the middle is an oblong opening that is oriented vertically. Laryngeal muscles contract and relax to open and close the larynx depending on whether an individual needs to breathe or swallow.

What is Laryngeal paralysis? The opening to the trachea ("wind pipe") normally is pulled open on two sides when breathing in, and relaxes when breathing out. In dogs and cats with laryngeal paralysis, the muscles that normally pull the airway open do not function properly. When an affected pet breathes in, the walls of the airway do not pull open—rather, they are sucked into the opening, or in severe cases sucked shut. It is like breathing through a straw. Early in the condition, this creates increased noise when they breathe; later, it can completely obstruct their airway, and they can suffocate.

The early signs of laryngeal paralysis can be quite subtle. You may notice harshness in their panting, increased panting or panting when cool and calm, a hoarse or raspy-sounding bark, noisy respiration and a high-pitched sound when breathing in (most common), occasional coughing/gagging especially after drinking or eating, reduced activity, exercise intolerance and elevated rectal temperature (especially during warm weather months). Owners report that they see their pet working harder to breathe; their facial expression is a bit anxious, their eyes are prominent and their chest is vigorously expanding. The pet may also look like they are "smiling" when they pant, with their lips pulled way back and tongue hanging out. Dogs will seem to tire more easily during activities such as walking.

Because animals use their breathing as a means to cool themselves naturally, pets with laryngeal paralysis are more prone to overheating under conditions that would not make a normal dog hot. This may be a simple walk outside on a sunny day or vigorous play on a cool day.
When the paralysis is quite pronounced, it is very obvious that the dog or cat is really working to breathe. The extra noise they create with each breath is harsh and easy to hear. Their tongue may be a darker red or purple in color; they do not want to be touched or restrained. They are in "respiratory distress" and need medical assistance. If laryngeal paralysis is not treated, a respiratory crisis can emerge. In this situation, the patient

attempts to breathe deeply and simply cannot, creating a vicious cycle of anxiety and respiratory attempts. The laryngeal folds become swollen making the obstruction in the throat still worse. The patient's gums become bluish in color from lack of oxygen and the patient begins to overheat. The patient must be sedated, intubated and cooled down with water in order to survive. As soon as intubation is done, the patient can breathe normally, oxygen can be administered and the crisis can be curtailed if it has not progressed too far.With this brief but effective therapy, most patients will rest comfortably and return to their pre-crisis state. Unfortunately, most patients that have reached a crisis point will continue to suffer these breathing episodes because their airway is ineffective.
If your veterinarian suspects this disorder, they may recommend some or all of the following diagnostic tests: blood tests, chest x-rays, neurologic examination and sedated examination of your pet's throat. In order to determine if a dog has laryngeal paralysis, the larynx must be examined and this requires sedation. The level of sedation must be heavy enough to allow the larynx to be visualized but light enough for the patient to be taking some deep breaths. In a normal larynx, the arytenoids cartilages are seen to open and close widely. In a paralyzed larynx they just sit there limply while the patient breathes deeply. Obviously, it is best to pursue this diagnosis before a crisis occurs.

What is the most effective treatment? Many different approaches have been used to surgically treat laryngeal paralysis. Over the years and through the monitoring of many post-operative patients, one technique has remained at the top of the list of procedures with good success and few complications, the **Unilateral Arytenoid Lateralization or "Tieback"**. In the tieback procedure, a suture is used to permanently pull the wall of the airway open on one side of the larynx. To minimize the chance of fluids or food entering the airway, only one side is pulled open enough to prevent airway compromise and future breathing crises.
In the hands of an experienced veterinary surgeon, this is typically a relatively straight-forward, **minimally invasive surgical procedure**. The incision is only 3-4 inches on one side of the neck and well-planned pain management can reduce or eliminate post-operative pain directly associated with surgery.
Most small animal veterinarians have not done enough of these surgeries to be comfortable with the technique and more importantly, lack the staff and facility to prevent and monitor for complications. They will likely refer you to a board certified surgeon with a 24 hour care facility.
Restrictions following surgery include use of a harness rather than a neck collar (this should be done immediately if you suspect your dog may have this problem), minimize barking for 6 weeks, pre-form meals into meatballs to minimize the chance of the food being sucked into the windpipe, consider an elevated feeding station or a bowl designed to slow your pet down while eating, avoid swimming and implement a weight loss program if needed.
Minor post-surgical complications can include: incision infection, seroma (an accumulation of fluid under the incision), loss of voice (usually already gone with laryngeal paralysis), coughing during or following eating and drinking (usually tapers off over time).
Major post-surgical complications can include aspiration of regurgitated stomach contents into the lungs resulting in mild to severe pneumonia and breakdown of suture/cartilage connection that results in pre-surgical breathing status requiring re-operation. The surgeon that did my dog's surgery has a specific fasting and drug protocol he uses that decreases the risk of aspiration immediately post op.
While laryngeal paralysis and its post-operative complications can be quite severe, the majority of families living through this with their dogs are happy with the quality of life that is restored with surgery. It is less and less common for aspiration pneumonia to be fatal, and dogs can make a full recovery even in severe cases. Most dogs do not suffer these complications and go on to live well with the ease of breathing restored.

I don't like to "reinvent" the wheel so much of this information was taken from the following web sites:
http://www.petmd.com/blogs/fullyvetted/2012/june/laryngeal_paralysis_common_cause_of_respiratory_difficulties_in_dogs-26124

https://www.acvs.org/small-animal/laryngeal-paralysis

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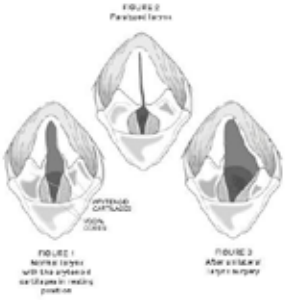

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