

Collapsing Trachea

ABOUT THE DIAGNOSIS

The trachea is commonly known as the windpipe. In dogs, as in people, this is the “tube” that extends from the back of mouth to the chest, where it divides into smaller tubes (bronchi) that lead to the lungs. Air travels into and out of the lungs through the trachea. The trachea consists of a long column of rings stacked on top of each other. These rings are made of firm cartilage. In dogs who have a collapsing trachea, some of these rings can lose their rigidity prematurely with age and partially flatten or become narrower in some dogs. The rigid tube then becomes floppy and can flutter with breathing, which triggers fits of coughing. This can happen anywhere along the length of the trachea. Collapsing trachea most commonly occurs in middle-age to older dogs that are toy or miniature breeds (Lhasa apso, Yorkshire terrier, Chihuahua, Pomeranian, toy poodle, shih tzu, and others); however, a collapsing trachea occasionally occurs in younger dogs or in larger dog breeds. Very rarely, a dog may be born with this problem (congenital disorder). Collapsing trachea is also called tracheal collapse, and it is important to realize that this means the trachea’s structure is weakened, the trachea is not closed or blocked.

The most common sign associated with a collapsing trachea is a nonproductive (dry) cough. The cough is often described as a “goose honk” because of its characteristic sound and the cough typically can be triggered by excitement, anxiety, exercise, eating and/or drinking, becoming overheated, and mild pulling on the collar (as opposed to pulling hard on a collar or leash, which can trigger a cough in virtually any dog). Some owners report that picking their dogs up under the chest area can bring on coughing caused by a collapsing trachea. Like any cough in dogs (whether caused by collapsing trachea or anything else), dogs generally give the impression that they are trying to “cough something out,” even though there is nothing to cough out. This is an impression that is produced by the repetitive fits of coughing that end in a terminal retch; a terminal retch is a final, hacking, gagging sound that is louder than the cough and that ends a fit of coughing. A dog may occasionally produce foam or bile during the terminal retch. None of these symptoms is specific to collapsing trachea, however, and dogs with any manner of lung, bronchial, or tracheal problem can produce this same appearance of symptoms. The cough occasionally may be severe enough to cause the dog to faint. In the earliest stages, some dogs with a collapsing trachea do not cough at all and the problem goes unnoticed.

Collapsing trachea is usually diagnosed based on a combination of symptoms (coughing episodes brought on by the events listed above) and visualizing the narrow trachea on x-rays of the neck and/or chest. Occasionally, the veterinarian will recommend that other procedures be performed to help determine if the dog has a collapsing trachea or to determine the severity of the collapse. One of these tests, fluoroscopy, is a method of watching “moving x-rays” of the dog as he or she lies on a table. These real-time x-ray images make it plainly apparent that the trachea is collapsing during respiration. Fluoroscopy is performed with the dog awake or mildly sedated and is noninvasive. It confirms that collapsing trachea is present and shows the extent of the collapsing segments (i.e., severity). Bronchoscopy is a less commonly performed test to assess the severity of a collapsing trachea. Bronchoscopy involves gently inserting a long tube with a very small camera on its end into the trachea while the dog is anesthetized. As the tube is advanced into the airway, images of the walls of the airway are seen and

the process of collapsing trachea can be seen directly, as can any complicating factors such as evidence of infection (pus) and swelling of the tracheal or bronchial walls (airway edema).

If your veterinarian suspects that your dog has another respiratory problem that may be exacerbating the collapsing trachea, several other tests may be performed while your dog is sedated or anesthetized. For example, the airway may be flushed with a sterile fluid to collect organisms and cells lining the inside of the trachea (bronchoalveolar lavage or BAL). Another test involves inserting a small brush into the trachea and gently rubbing it against the walls in several locations to collect organisms and cells (brush cytology). These tests may help to find organisms such as bacteria, viruses, fungi, or others that do not belong in the dog’s airways.

LIVING WITH THE DIAGNOSIS

Collapsing trachea is not curable, but it can often be controlled with medication or with more invasive procedures. If your dog has been diagnosed with a collapsing trachea, you can do many things to help make him or her more comfortable. Instead of a collar, you should use a harness when taking your dog for a walk. Harnesses fit around a dog’s chest, avoiding pressure on the neck caused by collars. Do not walk the dog in hot, humid weather and avoid leaving him or her in a car in hot weather in general, but especially with collapsing trachea. Leaving a dog in a car can not only lead to overheating, but also can be stressful even in cooler weather. Even after changing from a collar to a harness, avoid overexercising your dog. For overweight dogs, switching him or her to a weight-reducing diet and monitoring weight loss until an optimal weight is reached can help tremendously. If stressful situations are anticipated (for example, if people will be in your home and your dog is excited about seeing them), talk to your veterinarian about giving a sedative medication to your dog just beforehand. Often, barking and fast breathing are triggers for tracheal irritation and long bouts of coughing, so activities that can trigger barking or fast breathing should be limited or abolished.

TREATMENT

For most dogs diagnosed with collapsing trachea, some medications can be very helpful. Your veterinarian can prescribe a specific type of medication for your dog depending on the specific features of the case and available medications. There are several types of appropriate medications that work in different ways. **Sedatives** can help a dog to relax, which breaks the cycle of anxiety-induced coughing → coughing-induced tracheal irritation → more anxiety and more coughing (and so on). Some types of **cough suppressants** can be very helpful and may even contain a sedative, which helps to calm your dog and breaks the vicious circle of coughing induced by tracheal irritation that was induced by coughing. Another type of medication (**bronchodilator**) works by dilating the tiny airways that lead to the lungs—the bronchi—and making the work of breathing a little bit easier. It is important to understand that bronchodilator drugs to *not* dilate the trachea, and they might not help your pet. Sometimes, tracheal collapse is made worse by an infection, so you may be instructed to give a short course of antibiotics. Your veterinarian can discuss the schedule and appropriateness of these medications with you. Some dogs may only need to be given the medication at certain times of greatest need. Other dogs may need to receive them more often to prevent flare-ups. Just as in people, a dog may respond better to some medications than others. For this reason, if one medication does not appear to help, talk to

your veterinarian about trying another type or any need for tests to assess why it might not be working (for example, if complications are present). None of these drugs will actually fix the trachea, only help control the symptoms.

If the dog has other respiratory or heart problems, these may need to be treated as well. It is very common for one dog to have more than one heart/lung/airway issue at the same time. The treatment will depend on the specific problem.

In some dogs, a medication may lose its effectiveness, especially if the collapsing trachea worsens over time. If a dog no longer responds well to any of the available medications, a minimally invasive stent procedure or surgery may be an option. A stent is a wire mesh tube that can be placed inside the trachea to prop open the dog's real tracheal rings. It should not be thought of as a cure, but it can sometimes provide dramatic improvement to quality of life or even ease breathing. For a few dogs, stents can be implanted around the neck portion of the trachea at surgery. These very complicated procedures are carried out by a veterinary specialist using special equipment. There are real and important complications before choosing these invasive options, and not all dogs are candidates for this procedure. Your veterinarian can refer you to a specialist if this type of surgery might be an option. It might be performed by either a veterinary small animal internal medicine specialist (www.ACVIM.org or www.vetspecialists.com in North America, or www.ecvim-ca.org in Europe), or by a specialist veterinary surgeon (www.ACVS.org in North America, or www.ECVS.org in Europe).

DOs

- Give medicine exactly as prescribed.
- Use a harness or Gentle Leader-type face collar instead of a regular collar.
- Avoid placing the dog in situations that you suspect may be stressful or anxiety-provoking or that have triggered fits of coughing in the past.
- Realize that collapsing trachea is not a curable problem, but also not one to give up hope on. With the right medication combination, weight loss if needed, and common-sense approaches like using a harness instead of a collar, most dogs can achieve a normal lifestyle despite collapsing trachea.
- Understand that collapsing trachea can be difficult to treat, and that a second opinion from a veterinary internal medicine specialist may be helpful. You can discuss this with your veterinarian and a list of these specialists.

DON'Ts

- Do not ignore if your pet is having difficulty breathing, or if the gums take on a bluish tinge. These warrant an immediate trip to the veterinarian.
- Don't give up too easily or too early even if there is a cough. Dogs may enjoy a good quality of life after the diagnosis, even if periodic adjustments to treatment are required.
- Do not leave any dog in a car with the windows rolled up, especially in warm, humid weather.
- Do not force your dog to continue exercising if coughing begins.

When to Call Your Veterinarian

- If your dog shows signs of an adverse drug reaction (weakness, drowsiness, anorexia or decreased appetite, hives [bumps under the skin], vomiting, diarrhea, constipation or straining to have a bowel movement, seizures, etc.).
- If your dog faints and you cannot wake him/her up immediately.
- If your dog produces a greenish or whitish phlegm when coughing (or a similar-appearing discharge comes from the nostrils).
- If a medication no longer appears to be effective. Some dogs become "resistant" to some medications after taking them for a while and can be switched by the veterinarian to other medications to which they respond better.

Other information that may be useful: "How-To" Client Education Sheet:

- How to Deal with Incessant Coughing

Practice Stamp or Name & Address

Also available in Spanish.