

## **COLLAPSING TRACHEA**

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Collapsing trachea is a **relatively common cause of coughing and sometimes respiratory distress in miniature and toy dog breeds**. It is caused by a **hereditary** defect of the cartilaginous rings of the trachea (chondromalacia). Essentially, the rings are not as sturdy as they should be and collapse to varying degrees when the turbulence of air flowing through the trachea increases. There is also a component of inflammation of the tracheal lining. It occurs most commonly in **middle-aged to older dogs**.

The primary clinical sign is a **dry, non-productive cough, sometimes described as a “goose-honk” cough**. A coughing episode is often **precipitated by excitement, exercise, a neck lead, cold, heat or any other reason for irritation of the tracheal lining and/or increased turbulence of breathing**. These dogs often show no signs at all when they are resting quietly because air flows through their trachea easily and with minimal turbulence. When one of the inciting factors is present, irritation occurs or turbulence increases and collapse begins. The pet coughs and opens the trachea back up, but the cough itself causes inflammation within the trachea and a **vicious cycle ensues**. Many times the pet will quiet down and get himself or herself through an episode, but sometimes this is not the case and an emergency visit to the veterinary hospital is warranted. When respiratory distress occurs, the dog may collapse, have a bluish-tinge to the gums and may stop breathing.

The **diagnosis** of collapsing trachea comes from: a history of the characteristic clinic signs and inciting factors; the typical breed/age of dog; a cough which is elicitable with tracheal palpation; characteristic radiograph/x-ray changes; and occasionally by actually witnessing collapse during tracheal scoping. Collapse can occur at any level of the trachea. Generally, we **define the collapse by location** (cervical, thoracic inlet or intrathoracic). **Some dogs** experience collapse of their **main stem bronchi** (the largest airways that depart from the trachea) and potentially lower airways, **compounding their clinical signs and potentially making treatment more difficult**.

**Medical and surgical treatments** for collapsing trachea exist. Usually, if a patient presents relatively stable, medical management will be attempted first. There are several different medications and combinations of medications used. There are **no medications that will actually repair the cartilage defect**. The goals of medical management are: to control coughing, to decrease tracheal inflammation and to dilate lower airways, maximizing air flow at a lower point in the respiratory tree. Over-the-counter antitussive and prescription sedating agents are often used to control coughing. Steroids may be used to help control inflammation of the tracheal lining. Bronchodilators (like those used for asthmatics) may be used to help dilate lower airways. It is also important for the owner to keep the dog quiet, as much as possible and to use a chest harness, instead of a neck lead.

If a patient fails to respond adequately to medical management or presents for the first time in severe respiratory distress, surgery is the recommended treatment. Surgical management is based on **stenting** or placing devices around or within the trachea to mechanically hold it open. Some facilities will place stents through the mouth and down the trachea, using real-time radiography/x-rays (fluoroscopy), avoiding invasive surgical procedures. It is important for owners to realize that stenting is not without its own set of short-term and long-term complications and so is often reserved for severely affected patients. In addition, main stem bronchial collapse can not be addressed with stenting.

**Response to treatment and prognosis can vary tremendously between dogs.** Trial and error with different medications and doses may be necessary to find what works best for each individual. Owners must realize that their pet could go into **respiratory distress at any time** and complete collapse/obstruction could be fatal. As with any respiratory condition, **delay in getting to a veterinary hospital is never advised, if a pet is having a severe episode.** During transport, the best thing an owner can do is to calm/quiet the dog.