



d.c. Vets, inc.

## **Surgical Diseases of the Upper Airway (Collapsing Trachea, Stenotic Nares, Everted Laryngeal Saccules, Elongated Soft Palate)**

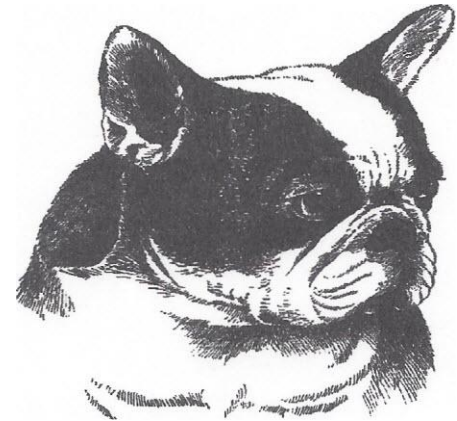
### **Collapsing Trachea**

The trachea (windpipe) is a rigid structure composed of numerous cartilaginous rings. In some small breed dogs, particularly miniature breeds, the cartilage of the trachea degenerates over time. When this occurs, the trachea becomes soft and flaccid and is prone to collapse during respiration. On inspiration, the cervical trachea collapses. On expiration, the trachea in the chest collapses. It is critical to diagnose not only tracheal collapse, but also the location of the collapse.

The most common symptom of collapsing trachea is a chronic, dry, hacking (honking) cough. In severe cases there may be exercise intolerance, cyanosis, asphyxia, and death. Clinical signs are often worse in hot and humid weather and are exacerbated by obesity and concurrent airway problems.

A tentative diagnosis of collapsing trachea is made based on history and physical examination. A cough may be elicited on palpation of the trachea. Radiographs (x-rays) may demonstrate the collapse. A definitive diagnosis may require the use of fluoroscopy, an x-ray technique that allows the doctor to observe the trachea during respiration in real time on a television screen.

Only the most severe cases are treated surgically. Most respond to correction of the other problems noted here or to medications. Weight loss and correction of concurrent airway disorders may alleviate a significant portion of the problem. Cough suppressants and anti-inflammatory medications (corticosteroids) are often beneficial as is avoidance of stress and environmental irritants.



### **Brachycephalic Airway Syndrome**

The upper airway in dogs consists of the nose, sinuses, pharynx, and larynx. There are a variety of problems that can affect the upper airway and compromise the normal flow of air. A particular set of upper airway abnormalities affects brachycephalic dogs. The term "brachycephalic" refers to dogs with shortened noses and mouths. Bulldogs, Pekingese, and Pugs are examples of brachycephalic dogs. Problems seen in brachycephalic breeds include stenotic nares, everted laryngeal saccules, and elongated soft palates. These dogs can have any or all of these conditions. Sometimes these problems compromise respiration to such an extent that surgical intervention is required.

Symptoms of brachycephalic airway syndrome include the following:

- Constant open mouth breathing
- Noisy breathing
- Excessive snoring
- Choking and gagging
- Cyanosis (blue-tinged color due to lack of oxygen)
- Exercise intolerance

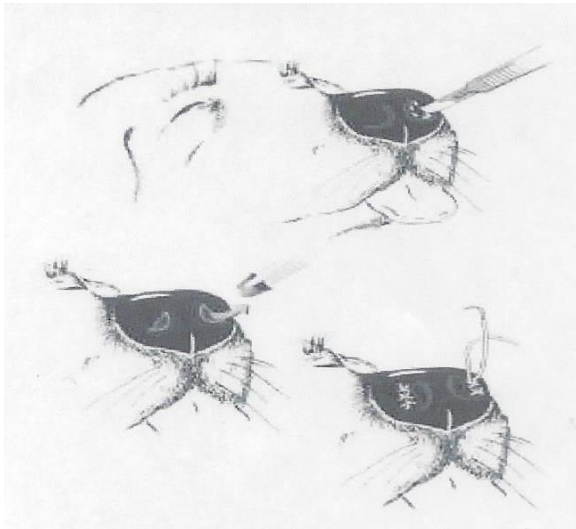
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Symptoms are often worse during hot and humid weather. Obesity can also worsen clinical signs.

A diagnosis is made by visual examination of the nares, soft palate, and larynx. Laryngeal examinations may need to be performed with the aid of sedation or anesthesia.

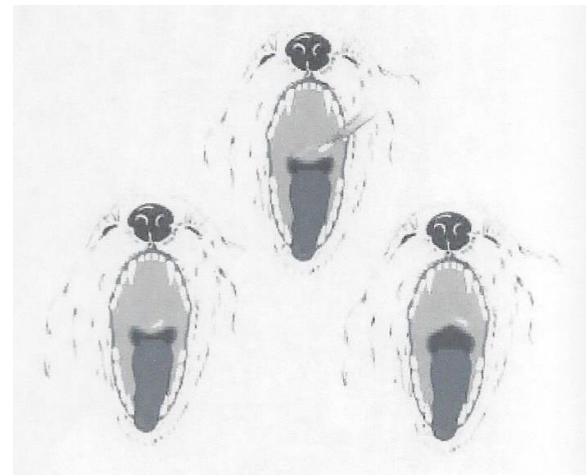
### **Stenotic Nares (Abnormally Narrow Nostrils)**

The nares (nostrils) of brachycephalic dogs are often too narrow to permit normal respiration. These dogs tend to breathe exclusively through their mouths or make wheezing sounds when breathing with their mouths closed. The treatment of choice for this problem is a surgical procedure called rhinoplasty. When performing a rhinoplasty, a small wedge of tissue is resected from the side of each nostril. The remaining tissue is then sutured together, effectively widening the opening of the nares and allowing for more normal respiration.



### **Everted Laryngeal Saccules**

The laryngeal saccules are small bags of tissue that normally sit in recessions just in front of the vocal folds. When we breathe normally, we decrease the pressure in our lungs and upper airways by expanding our chests. This action allows air to flow down our airways and into our lungs. Dogs with compromised airflow through the upper airway must work harder to fill their lungs with air. This decreases the pressure in the upper airway even more and literally pulls the saccules into the airway. When everted, the saccules sit just in front of the opening to the trachea and block the flow of air. The treatment for this problem is excision (removal) of the saccule tissue.



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