

Laryngeal Collapse in Dogs

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BASIC INFORMATION

Description

Laryngeal collapse is also referred to *aryepiglottic collapse* or *corniculate collapse*. This condition arises when the cartilages of the larynx (voice box) become weak and lose their structural rigidity. It almost always leads to severe inspiratory distress (difficulty breathing air in). Laryngeal collapse usually occurs in dogs older than 2 years of age, but it may develop earlier in dogs with severe upper airway obstruction from other causes. (See also the handout on **Brachycephalic Syndrome**.)

Causes

Most often, the condition results from chronic airway obstruction related to brachycephalic syndrome. Fatigue of the cartilages that surround the laryngeal opening occurs because of the chronic negative pressures produced by the increased effort needed to take in air. Rarely, the condition can arise from direct trauma to the cartilages.

Clinical Signs

Noisy breathing and difficulty breathing have usually been present for years. A sudden worsening of respiratory distress may occur in dogs with various components of brachycephalic syndrome. Cyanosis (blue color of the tongue or gums caused by lack of oxygen), gagging, choking, vomiting, and restlessness are often seen. Labored, open-mouth breathing; retraction of the lips (indicating great effort is being made to breathe); panting; and elevated body temperature from exaggerated breathing effort may all occur. In severe cases, the animal may collapse and possibly die before therapy can be started.

Diagnostic Tests

A tentative diagnosis is often based on a history of chronic breathing problems in certain breeds. Diagnosis is confirmed by examination of the larynx (laryngoscopy) under anesthesia. X-rays of the chest help define any additional problems of the trachea (narrowed diameter, collapse) or lungs, as well as the presence of a hiatal hernia, which can accompany chronic airway problems.

TREATMENT AND FOLLOW-UP

Treatment Options

Emergency treatment of dogs with acute respiratory distress usually consists of oxygen therapy, sedation, and administration of anti-inflammatory drugs. If these measures are unsuccessful, a temporary tracheostomy may be needed to stabilize the dog until corrective surgery is done.

If the laryngeal collapse is mild, treatment consists of surgical correction of the underlying cause of the problem, such as shortening of an elongated soft palate, enlargement of the external openings of the nose, or removal of any excessive, obstructive tissues within the throat area. In instances of moderate to severe laryngeal collapse, a portion of one of the collapsed cartilages may be surgically removed via an oral approach (through the mouth). In severe cases or if signs persist after surgical therapy, a permanent tracheostomy may be required.

Follow-up Care

Close, continuous monitoring for airway obstruction is required after recovery from surgery. In some animals, a temporary tracheostomy is needed for several days until postoperative swelling subsides. Aspiration pneumonia is a serious problem that may occur.

Following a permanent tracheostomy, it is critical that the new opening be kept clean and that the trachea remain clear of mucus and blood. Postoperative care and monitoring often requires 4-5 days of hospitalization before it is safe to discharge the animal.

- The opening will decrease in size over several months to approximately 30-40% of the original size.
- The dog should not be allowed to engage in swimming, and harnesses (rather than collars) are preferred for restraint.
- The hair around the new opening must be kept short.
- Secretions around the opening sometimes irritate the skin, which can be treated with petrolatum or zinc oxide ointments for a short time.
- In some breeds (pugs, English bulldogs), a significant amount of skin around the new opening must be removed to prevent the excessive skin folds from obstructing the new opening. Overlapping skin folds may also become a problem months to years later and require additional surgery.
- In extremely cold environments or in dusty conditions, a lightweight scarf or wrap should be placed over the opening.
- Most dogs can no longer bark (vocalize).

Prognosis

In mild cases, surgical correction of the elongated soft palate, narrow nasal openings, or redundant tissue around the larynx results in a favorable outcome. In some instances, correction of the underlying abnormalities or partial removal of one of the laryngeal cartilages does not provide enough relief, and a permanent tracheostomy is needed.

Dogs with a permanent tracheostomy can develop life-threatening problems immediately after surgery if a mucus plug or blood clot forms within the trachea. Most dogs that survive the first 5-7 days do well, with few short- or long-term problems. Owners must be very committed to keeping the tracheostomy clean and dry.