



---

## Animal Specialty Hospital of Florida

---

*Exceptionally skilled. Uniquely compassionate.*

### Tracheal Stent Implantation for Canine Tracheal Collapse:

Nick Schroeder, DVM DACVIM (cardiology)

Patients that have severe tracheal collapse with symptoms of or documented airway obstruction that are refractory to medical management may be candidates for tracheal stent implantation. A tracheal stent is a self-expanding metallic device which is placed within the trachea (windpipe) and is used to hold the airway open. Many different considerations must be made when evaluating patients for stent implantation. Tracheal stent implantation is a last resort for patients with severe, refractory tracheal collapse. **Stents are an imperfect treatment for a terrible problem and do not “fix” tracheal collapse.**

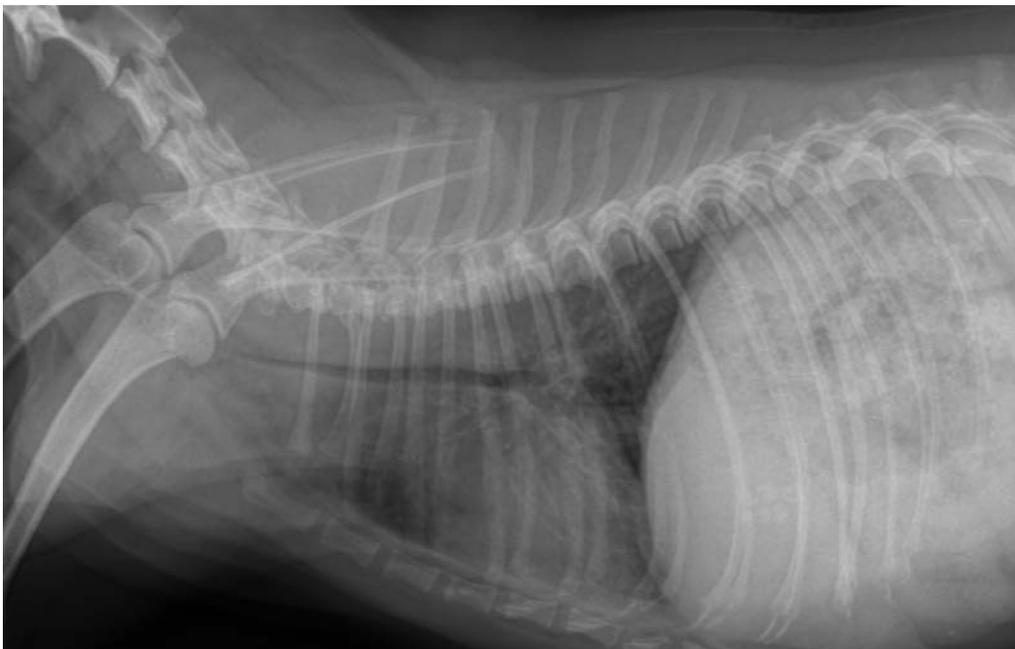
Candidates for tracheal stent implantation have certain qualities that we look for in a “good candidate.” These include the following:

- 1) Patients that have severe **cervical** tracheal collapse. Tracheal collapse may be graded from I-IV with grade I tracheal collapse being mild, and grade IV tracheal collapse being severe with often complete obstruction of the airway. Patients that have intrathoracic tracheal collapse or bilateral mainstem bronchus collapse are *not* good candidates for stent implantation, as they will continue to have severe coughing and even obstruction despite having a stent, and are at higher risk for serious complications.
- 2) Patients refractory to medical therapy. Patients may be managed for years with medical therapy. When medications are no longer helping, and patients are displaying refractory symptoms, then we may resort to a tracheal stent.
- 3) Patients that have no other major concurrent heart and/or lung problems.
- 4) Patients that have owners with the resources for continued care. Patients with a stent require periodic reevaluation, including bronchoscopy. They may need repeated transtracheal washes for cultures and occasionally intralesional injections if they develop granulomas.

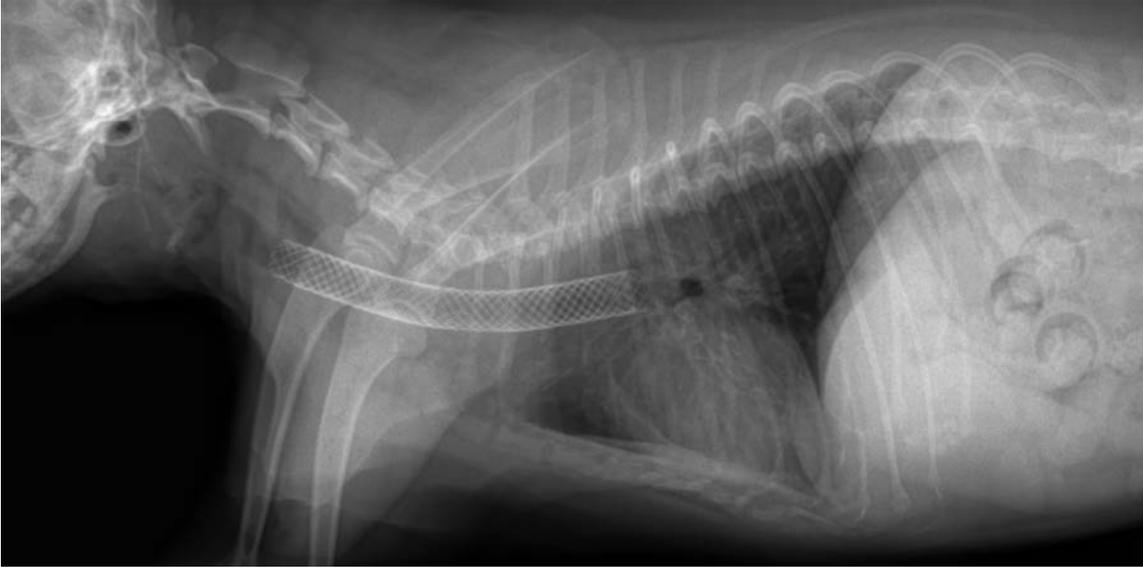
We can evaluate your pet for stent implantation, and this typically includes a combination of survey chest x-rays (thoracic radiographs), and tracheobronchoscopy with transtracheal wash. Occasionally fluoroscopy (real-time x-ray) is needed to rule-out dynamic airway collapse, and echocardiography may be used to evaluate for concurrent heart disease. Blood testing is recommended to evaluate patients prior to anesthesia for major metabolic problems.



Tracheoscopy of a patient with a recently-placed indwelling tracheal stent.



Chest x-ray of a patient with severe cervical tracheal collapse. The windpipe narrows severely in the region of the thoracic inlet.



Chest x-ray from the same patient following tracheal stent implantation. The stent is now holding the airway open.

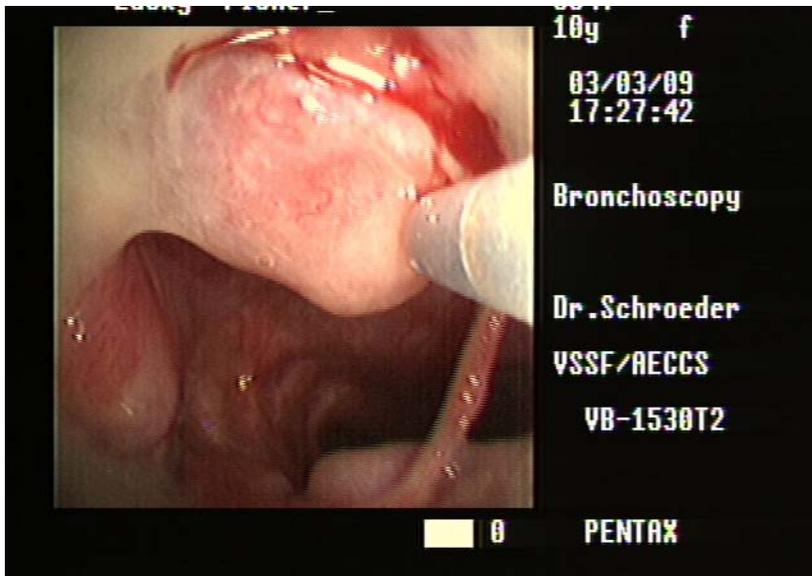
Complications are **frequent** and **expected** in patients with indwelling tracheal stents. A foreign body such as a stent within the windpipe predisposes patients to chronic and recurrent airway infections. Patients often require long-term antibiotic administration and repeated airway cultures. Chronic coughing in patients with an indwelling tracheal stent predisposes to fracture of the stent. If the fracture is severe enough, placement of a second stent within the first one may be attempted. Granuloma formation may also occur. This is a benign growth of inflammatory tissue within the airway. Intralesional injections of corticosteroids may help some of these cases.



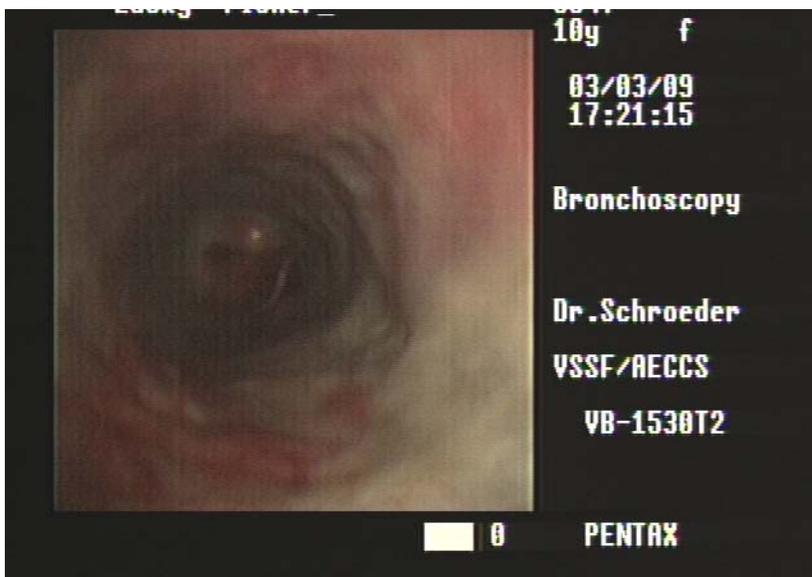
Chest x-ray from a patient with a fractured stent.



Tracheoscopy photo of the same patient. An endoscope is advanced down the windpipe and a tiny camera is used to obtain diagnostic images. The windpipe is severely narrowed at the region of the stent fracture.



Another patient is having a granuloma injected directly with a corticosteroid.



The same patient had a chronic airway infection. The yellowish material to the right lower corner is frank pus.

Generally, patients that have indwelling tracheal stents *still require lifelong medication*, including cough suppressants, as well as corticosteroids and antibiotics. While stent implantation may have complications, it can save the life of patients with severe airway obstruction secondary to tracheal collapse. Some pets have been managed for years following stent implantation.