

Narrowing of the Esophagus

(Esophageal Stricture)

Basics

OVERVIEW

- The esophagus is the tubular organ that runs from the throat to the stomach; an esophageal stricture is an abnormal narrowing of esophageal lumen (the inner open space of the esophagus)

GENETICS

- No apparent genetic basis

SIGNALMENT/DESCRIPTION OF PET

Species

- Dogs
- Cats

Mean Age and Range

- Any age; strictures secondary to birth defects of the heart vessels around the esophagus (known as “vascular ring anomaly”) can show signs after weaning; cancers tend to occur in middle-aged to older pets

SIGNS/OBSERVED CHANGES IN THE PET

- Clinical signs are related to the severity and extent of narrowing or stricture
- Regurgitation (return of food or other contents from the esophagus or stomach back up through the mouth)
- Liquid meals often tolerated better than solid meals
- Difficulty swallowing (known as “dysphagia”)—seen with upper esophageal strictures
- Drooling or salivation
- Howling, crying, or yelping during swallowing when the pet has active inflammation of the esophagus (known as “esophagitis”)
- Good appetite initially; eventually, lack of appetite (known as “anorexia”) with progressive esophageal narrowing and inflammation
- May develop aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids) with progressive regurgitation and difficulty swallowing (dysphagia)
- Coughing and/or discharge from the nose in pets that have aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids); abnormal lung or breathing sounds (such as wheezes and coughing); difficulty breathing (known as “dyspnea”)



- Weight loss to severe weight loss with muscle wasting (known as “cachexia”)—in pets with long-term (chronic) or advanced stricture; malnutrition
- Pain on feeling (palpation) the neck and esophagus—may be seen in pets with inflammation of the esophagus (esophagitis) at the same time as the stricture is present

CAUSES

- Backward or reverse flow of stomach contents into the esophagus (known as “gastroesophageal reflux”) during anesthesia—most common (about 65% of cases)
- Ingestion of chemical irritants
- Persistent vomiting
- Esophageal retention of pills and capsules (such as doxycycline, clindamycin, and nonsteroidal anti-inflammatory drugs [NSAIDs])—leading to esophagitis; most common in cats
- Backward or reverse flow of stomach contents into the esophagus, unrelated to anesthesia (known as “gastroesophageal reflux disease”)
- Esophageal foreign body that produces damage over most of the lining circumference
- Esophageal surgery
- Cancer (such as lymphoma)
- Mass lesion (known as a “granuloma”) secondary to a parasite, *Spirocerca lupi*; occasionally seen in the southeastern United States

RISK FACTORS

- Anesthesia places some pets at risk for backward or reverse flow of stomach contents into the esophagus (gastroesophageal reflux), leading to inflammation of the esophagus (esophagitis), and subsequently to scarring or narrowing of the esophagus (stricture formation)
- Certain drugs used prior to anesthesia (such as diazepam, atropine, pentobarbital, phenothiazine-derivative tranquilizers)—decrease the pressure of the muscle that closes the opening between the esophagus and stomach (known as the “gastroesophageal sphincter”) and can result in the backward or reverse flow of stomach contents into the esophagus (gastroesophageal reflux)
- Administration of medication in pill form to cats without a chaser of water to help flush them into the stomach from the esophagus
- Esophageal foreign body

Treatment

HEALTH CARE

- Inpatient management initially, especially with esophagus tears (perforation) or aspiration pneumonia
- May discharge pets from the hospital after addressing hydration needs, achieving dilation of the narrowed section of the esophagus (esophageal stricture), and initiating any needed treatment for aspiration pneumonia and inflammation of the esophagus (esophagitis)
- Intravenous fluids—may be needed to correct hydration status
- Medications—give by injection following dilation procedures, to facilitate healing
- Oxygen—may be needed for pets with severe aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids)

ACTIVITY

- Unrestricted for most cases
- May be limited for pets with aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids)

DIET

- Withhold feeding pets by mouth that have severe inflammation of the esophagus (esophagitis) and following dilation procedures
- Temporary feeding tube may be placed at the time of esophageal dilation as a means of providing continual nutritional support
- Give liquid meals when restarting feeding by mouth for mild strictures, use a gruel consistency and feed partially elevated off the floor

SURGERY

- Dilate the narrowed opening of the esophagus by inserting one or more cylindrical medical instruments to gradually open up the narrowed area (known as “Bougienage tube dilation”); balloon dilation may be superior to this older technique
- Mechanical dilation using balloon catheter to open up the narrowed area, with observation of the procedure and esophagus using a special lighted medical instrument called an “endoscope” (general term for procedure is “endoscopy) or using special x-ray (radiograph) equipment called a “fluoroscope” that allows one to see movement of the balloon (procedure is “fluoroscopy”); perform endoscopy after dilation to assess damage to the lining of the esophagus; re-dilation at 1- to 2-week intervals may be necessary until stricture is resolved
- Surgical removal of the narrowed section of the esophagus—last resort

Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

- Administer medications by injection following dilation procedures and if severe inflammation of the esophagus (esophagitis) is present
- When administering medications by mouth is resumed, dissolve medications in water and give by syringe or give directly via a feeding tube to ensure that they reach the stomach
- Injections of triamcinolone and/or mitomycin-C topically—directly into the area where the stricture was located, after dilation of esophageal stricture, may be helpful in decreasing esophageal scarring
- Sucralfate suspension—coat and soothe the damaged mucosa
- Agents to decrease stomach-acid secretion (omeprazole)
- Drugs that improve the propulsion of contents through the stomach and intestines (known as “gastrointestinal prokinetic agents,” such as cisapride)—may increase tone of the muscle between the stomach and esophagus (gastroesophageal sphincter)
- Lidocaine solution—to manage severe esophageal pain
- Broad-spectrum antibiotics for aspiration pneumonia, if present

Follow-Up Care

PATIENT MONITORING

- Monitor for repeat symptoms (mostly regurgitation); monitor for resolution of aspiration pneumonia (signs, radiographs (X-rays))
- Repeat endoscopy every 2–4 weeks until clinical signs have resolved and adequate esophageal lumen size has been achieved; repeat dilation may be necessary
- An appropriate consistency of food should be provided to ease swallowing

PREVENTIONS AND AVOIDANCE

- Preanesthetic administration of cisapride or omeprazole may reduce reflux
- Proper patient preparation prior to anesthesia (8- to 12-hour preoperative fast)
- If gastroesophageal reflux is present, avoid late-night feedings as they tend to decrease the ability of the muscle between the stomach and esophagus to remain closed during sleep

- Follow administration of capsules and tablets by mouth with about a teaspoon (6 ml) of water in cats and dogs to help the medication move through the esophagus (called a “wet swallow”); especially important for drugs that favor ulcer formation such as doxycycline, clindamycin and aspirin
- Coat pills with butter to decrease the time required to get through the esophagus and into the stomach (especially for cats) or apply Nutrical® to the cat's nose to stimulate licking after administration of pills
- Encourage the pet to eat after administering capsules or tablets by mouth, to encourage swallowing and movement of the medication into the stomach (unless your vet advises it should be given apart from food)
- Prevent pet from ingesting caustic substances and foreign bodies

POSSIBLE COMPLICATIONS

- Esophageal tear or perforation—a life-threatening complication of esophageal stricture dilation; usually occurs at the time of dilation, although it has been observed several days to weeks later
- Risk for aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids)
- Excessive esophageal bleeding, esophagitis and/or introduction of bacteria into the blood stream (known as “bacteremia”) can occur secondary to esophageal dilation; stricture may recur
- If stent is placed, it may become blocked, migrate out of position or cause bleeding, trouble swallowing, perforation or pain

EXPECTED COURSE AND PROGNOSIS

- Generally, the longer the stricture, the smaller the opening, the more guarded the prognosis
- Balloon dilation has 70-88% success rate; an average of 2 procedures is required, but can be up to 5-8 before considered a failed approach
- Esophageal strictures secondary to cancer—poor prognosis

Key Points

- Pets generally do not recover from untreated esophageal stricture
- Benign strictures are best treated by esophageal dilation
- Pets with esophageal strictures secondary to cancer have a poor prognosis
- High probability of happening again (recurrence) and common need for multiple dilation procedures
- Possibility of improvement (such as decreased to absent regurgitation [return of food or other contents from the esophagus or stomach back up through the mouth], ability to eat softened canned foods but not dry food), but not cure