



Regurgitation

(Return of Food or Other Contents from the Esophagus, Back Up through the Mouth)

Basics

OVERVIEW

- Passive, backward movement or return of food or other contents from the esophagus (part of the digestive tract, the tube running from the throat to the stomach) into the throat (known as the “pharynx”) or mouth

GENETICS

- Regurgitation due to an enlarged esophagus (known as “megaesophagus”) can be inherited in wire fox terriers (autosomal recessive) and miniature schnauzers (autosomal dominant or 60% penetrance autosomal recessive)

SIGNALMENT/DESCRIPTION OF PET

Species

- Dogs—more common than in cats
- Cats

Breed Predispositions

- Dogs—wirehaired fox terriers, miniature schnauzers; other susceptible breeds include Great Danes, German shepherd dogs, Irish setters, Labrador retrievers, Newfoundlands, and Chinese shar-peis
- Cats—Siamese and Siamese-related

Mean Age and Range

- Congenital (present at birth) cases are identified soon after birth, or at weaning from liquid diet to solid foods
- Acquired (present later in life/after birth) cases may be seen at any age, depending on the cause

Predominant Sex

- No predominant sex has been identified as being more likely to regurgitate

SIGNS/OBSERVED CHANGES IN THE PET

- Owners often report “vomiting”; veterinarian must differentiate vomiting (forceful ejection of stomach contents up through the esophagus and mouth) from regurgitation (passive, backward movement or return of food or other contents from the esophagus [part of the digestive tract, the tube running from the throat to the stomach] into the throat [pharynx] or mouth)
- Regurgitation—passive process; little to no abdominal effort; regurgitated material has increased amounts of thick mucus in it
- Vomiting—active process; forceful ejection of stomach contents up through the esophagus and mouth; vomited

material may have increased amounts of bile staining (yellowish staining) in it

- The shape of the expelled material (such as “tube-like”), presence of undigested food, and length of time from ingestion to regurgitation or vomiting are less helpful to differentiate between regurgitation and vomiting
- Difficulty swallowing (known as “dysphagia”)
- Coughing
- Ravenous appetite
- Weight loss; may be extreme weight loss with muscle wasting (known as “cachexia”)
- Other signs, depending upon underlying cause
- Swelling may be noted in the neck
- Excessive salivation/drooling (known as “ptyalism”)
- Bad breath (known as “halitosis”)
- Increased breathing noises
- Discharge from the nose
- Fever, if pet also has pneumonia
- Weakness

CAUSES

Congenital Pharyngeal Problems (Problems Involving the Throat, Present at Birth)

- Cleft or short palate
- Cricopharyngeal achalasia (neuromuscular disorder of young dogs in which the function of the muscles in the throat and upper esophagus is abnormal, leading to swallowing difficulties)
- Myasthenia gravis (a disorder of neuromuscular transmission characterized by muscular weakness and excessive fatigue)

Congenital Esophageal Problems (Problems Involving the Esophagus, Present at Birth)

- Persistent right aortic arch (abnormal development of major arteries of the heart, resulting in the esophagus being trapped by the blood vessels causing obstruction)
- Enlarged esophagus (megaesophagus)
- Glycogen-storage diseases (inherited diseases in which normal glycogen [the body's carbohydrate reserve] metabolism is altered)
- Esophageal diverticulum (a pouch or sac, opening from the esophagus)
- Abnormal opening between a bronchus (airway) and the esophagus (known as “bronchoesophageal fistula”)

Acquired Pharyngeal Problems (Problems Involving the Throat, Develop Later in Life)

- Foreign bodies
- Cancer
- Rabies
- Poisoning or toxicity (botulism)
- Muscle disease (known as “myopathy”) and/or nervous system disease (known as “neuropathy”)

Acquired Esophageal Problems (Problems Involving the Esophagus, Develop Later in Life)

- Enlarged esophagus (megaesophagus)
- Myasthenia gravis (a disorder of neuromuscular transmission characterized by muscular weakness and excessive fatigue)
- Abnormal narrowing of the esophagus (known as a “stricture”)
- Tumor or cancer
- Inadequate levels of steroids are produced by the adrenal gland (known as “hypoadrenocorticism” or “Addison's disease”)
- Low levels of thyroid hormone (known as “hypothyroidism”)
- Hiatal hernia
- Folding of part of the stomach into the esophagus (the tube running from the throat to the stomach; condition known as “gastroesophageal intussusception”)
- Backward or reverse flow of stomach contents into the esophagus (known as “gastroesophageal reflux”)
- Tumors around the esophagus
- Dysfunction of the autonomic nervous system (known as “dysautonomia”)

- Muscle disease (myopathy) and/or nervous system disease (neuropathy)
- Foreign bodies
- Disease characterized by the formation of nodules (known as “granulomatous disease”) involving the esophagus
- Poisoning or toxicity (lead)
- Unknown cause (known as “idiopathic” disease)
- Stomach dilates with gas and/or fluid (known as “gastric dilatation”), and subsequently rotates around its short axis (known as “volvulus”)—condition known as “gastric dilatation-volvulus” or “bloat”
- Parasitic infection—*Spirocerca lupi*; *Spirocerca lupi* is a parasitic worm that lives in nodules in the esophagus; the nodules are known as “granulomas”
- Abnormal opening between a bronchus (airway) and the esophagus (known as “bronchoesophageal fistula”)

RISK FACTORS

- Possible risk of backward or reverse flow of stomach contents into the esophagus (gastroesophageal reflux) with general anesthesia; the resultant inflammation of the esophagus (known as “esophagitis”) may lead to regurgitation (return of food or other contents from the esophagus or stomach back up through the mouth)

Treatment

HEALTH CARE

- Therapy for underlying cause should be instituted
- Most important are meeting nutritional requirements and preventing or treating aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids)
- Aspiration pneumonia may require supplemental oxygen therapy; administration of medication in a fine spray (known as “nebulization”) and efforts to dislodge secretions in the lungs and to induce coughing (known as “coughage”); and fluid therapy with balanced electrolyte solution
- These pets may be recumbent and require soft bedding and should be maintained up on their chests (in sternal recumbency) or turned to alternate down side every 4 hours

ACTIVITY

- Depending on cause, restricted activity usually is not necessary

DIET

- Experiment with different food consistencies—liquid gruel, small meatballs, or food slurries made by using a kitchen blender
- Some cases benefit from tube feeding, although regurgitation (return of food or other contents from the esophagus or stomach back up through the mouth) may still occur
- Food and water should be elevated, and the pet should be maintained in an upright position 10–15 minutes after eating or drinking
- The caloric needs of the pet should be calculated and the diet should be monitored to ensure that the pet is getting adequate calories; your pet's veterinarian can provide information on the amount of food to feed

SURGERY

- Surgical intervention is indicated for treatment of abnormal development of major arteries of the heart, resulting in the esophagus being trapped by the blood vessels causing obstruction (abnormal arteries known as a “vascular ring anomaly”); neuromuscular disorder of young dogs in which the function of the muscles in the throat and upper esophagus is abnormal, leading to swallowing difficulties (cricopharyngeal achalasia)—surgical treatment is a “cricopharyngeal myotomy”; abnormal opening between a bronchus (airway) and the esophagus (bronchoesophageal fistula)—dysfunction of the esophagus is permanent in most pets with these disorders, even after surgery
- Balloon dilation (procedure in which an instrument with an expandable balloon is inserted into the esophagus and the balloon is expanded to open the narrowing or stricture) is indicated for cases of esophageal stricture

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

- Antibiotics for aspiration pneumonia (broad spectrum or based on bacterial culture and sensitivity from transtracheal wash [TTW] or bronchoalveolar lavage [BAL]; TTW and BAL are techniques in which samples from within the respiratory tract are collected for evaluation by microscope and/or bacterial culture and sensitivity testing)
- Specific therapy for underlying cause, if indicated
- Drugs that improve the propulsion of contents through the stomach and intestines (known as “gastrointestinal prokinetic agents”)—metoclopramide may increase tone of the muscle between the stomach and esophagus (gastroesophageal sphincter), increases stomach motility, and may increase movement of the esophagus; cisapride is more effective for preventing backward or reverse flow of stomach contents into the esophagus (known as “gastroesophageal reflux”) than metoclopramide; however, it slows the time for materials to move through the esophagus (known as “esophageal transit time”); may be more helpful in cats due to increased smooth muscle in the lower esophagus
- Other motility agents (such as nizatidine) have not been evaluated for effects on esophageal motility
- H₂-blockers for inflammation of the esophagus (known as “esophagitis”)—ranitidine, cimetidine, famotidine
- Proton pump inhibitors may be used in severely affected pets—omeprazole

Follow-Up Care

PATIENT MONITORING

- Pets with aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids) should have chest x-rays (radiographs) and complete blood counts (CBCs) checked until resolution, or if recurrence is suspected
- Pets should be monitored, weighed, and body condition scores (BCS; “body condition score” is an estimate of weight status [under or overweight] as compared to normal weight) determined to ensure adequate caloric intake; your pet's veterinarian can provide information on determining BCS

POSSIBLE COMPLICATIONS

- Aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids)
- Others depending on presence of other diseases (such as inadequate production of thyroid hormone [known as “hypothyroidism”])

EXPECTED COURSE AND PROGNOSIS

- An older pet with enlarged esophagus of unknown cause (known as “idiopathic megaesophagus”) has a poor prognosis
- Aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids) is the typical cause of death or euthanasia

Key Points

- Regurgitation is the passive, backward movement or return of food or other contents from the esophagus (part of the digestive tract, the tube running from the throat to the stomach) into the throat (pharynx) or mouth
- If regurgitation is due to an enlarged esophagus (megaesophagus), most affected pets require lifelong therapy, even if an underlying cause is found
- Client dedication is important for long-term management
- Most pets will succumb to aspiration pneumonia (inflammation of the lungs, caused by accidentally inhaling food, vomit, or liquids) or regurgitation that does not respond to treatment

Notes

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