

Megaesophagus

ABOUT THE DIAGNOSIS

CAUSE: In animals, like in people, the esophagus is the tube-shaped organ that carries swallowed food from the mouth down into the stomach. There are several groups of muscles and nerves that make up the esophagus and that coordinate movements to propel food toward the stomach.

Megaesophagus is a disorder characterized by decreased movement (hypomotility) and dilation or distention of the esophagus. As a result, food does not pass from the mouth to the stomach appropriately and can sit in the esophagus or be brought back up through the throat and out the mouth (regurgitation). As an analogy, the esophagus can be thought of as an elevator that carries food from the mouth to the stomach, and with megaesophagus, the elevator moves very slowly or stalls altogether, leaving food trapped for a period of time on its way to the stomach before finally getting through, or else being sent back (regurgitation). Pets with megaesophagus are at greater risk for developing pneumonia (lung infection), since food and liquids sitting in the esophagus or being regurgitated can be accidentally inhaled into the lungs (aspiration pneumonitis).

Megaesophagus can occur in both dogs and cats, but it is much more common in dogs. Megaesophagus can be present at birth and become apparent when soft and dry foods are introduced at weaning, or it can occur later in life, usually in young to middle-aged adults. It is hereditary (genetically transmitted) in some wire-haired fox terriers and miniature schnauzers, and also commonly affects the German shepherd, Newfoundland, Great Dane, Irish setter, shar-pei, pug, greyhound, and Siamese cat.

Megaesophagus can be the primary disease, and in such cases the wall of the esophagus is inherently weak or paralyzed. Less commonly, megaesophagus is secondary: it occurs as a result of another disease process, such as diseases that make all muscles of the body (including the esophagus's muscle tissue) weak, or other disorders that block the esophagus and cause stretching upstream from the blockage. Although megaesophagus is often primary and its cause is unknown (idiopathic), there are several different potential disease processes in cats and dogs which can lead to a dilated esophagus: esophageal obstructions caused by foreign material (i.e., sticks, rocks, bones), abnormal narrowing (stricture) due to scarring of the esophagus wall caused by previous damage, cancers and other masses, congenital (developmental) abnormalities, neurologic and neuromuscular diseases, infectious diseases, inflammation of the esophagus (esophagitis), immune system abnormalities, hormonal disorders, and toxins.

DIAGNOSIS: Symptoms of megaesophagus can vary from patient to patient and can be similar to several other diseases. One of the most distinguishing symptoms of megaesophagus is the regurgitation of food or water. Regurgitation involves the bringing up of foods and liquids that have not yet reached the stomach, but rather are sitting within the esophagus. It does not involve any obvious effort to bring food up, which is different from vomiting because vomiting involves belly contractions and retching and can be preceded by signs of nausea and drooling. Regurgitation, by contrast, is a completely silent and effortless process: the pet tilts his or her head and neck downward, and the fluid and food (often foul-smelling) flow out onto the ground. The contents expelled after regurgitation are always undigested (whole chunks of

food), and yellow bile (stomach and intestinal fluid) is absent with regurgitation. As a result of frequent regurgitation, symptoms of excessive salivation, foul breath, and weight loss are also common with megaesophagus. If pets have developed aspiration pneumonitis as a result of megaesophagus, nasal discharge, breathing difficulties, fever, coughing, and other general symptoms of illness may be apparent to you.

Your veterinarian will begin by asking you several questions to try to determine if megaesophagus, or another type of problem altogether, could be responsible for the symptoms. You should provide whatever information you have when you answer these questions, which often include: the type of symptoms observed, the length of time they have been occurring, effects on vital functions such as appetite, any previous medical problems or recent procedures, the possibility of exposure to potentially poisonous substances in the past, and any current medications or supplements you are giving your pet. Distinguishing between vomiting and regurgitation is a key issue that your veterinarian will likely want to clarify through these questions.

When examining your pet, your veterinarian will look for some of the changes that can occur with megaesophagus, which can include emaciation (being excessively thin), dehydration, bad breath, excessive drooling, and bulging of the esophagus or pain noted when feeling the region of the neck associated with the esophagus. In some cases, evidence of behavioral changes, neurologic disorders, and pneumonia can be detected as complications of megaesophagus, or as parallel symptoms that occur with illnesses causing secondary megaesophagus. The symptoms listed here are not specific to megaesophagus, however, and other disorders could in fact be the cause of the problems. Therefore, if megaesophagus is suspected by your veterinarian, further testing will be recommended.

Megaesophagus can often be identified with plain x-rays of the neck and chest. Some cases may require more specialized imaging techniques such as barium swallows (contrast material ["dye"] is fed in a meal and an x-ray is taken in order to outline the dilated esophagus), fluoroscopy (a continuous x-ray that allows for real-time visualization of the esophagus in motion while swallowing), or endoscopy (a small camera on the end of a long, steerable tube which is inserted directly into the esophagus, requiring general anesthesia). These techniques can also be useful in detecting foreign materials lodged in the esophagus, masses, and cases that are complicated by pneumonia.

Lab work consisting of standard blood and urine tests is necessary because it helps identify complications, and can detect any concurrent problems that could alter medication choices.

Other tests that may be performed depending on the case can include: acetylcholine receptor antibody titer (ARAT) and/or edrophonium test (to evaluate for myasthenia gravis, a disorder that causes muscle weakness), electromyography (EMG, to test muscle function), nerve conduction velocity (NCV, to assess the conduction properties of nerves), and/or muscle and nerve biopsies (to rule out neuromuscular abnormalities), antinuclear antibody (ANA test, to detect immune system abnormalities), hormonal testing (to screen for diseases of hormonal deficiency such as hypothyroidism and hypoadrenocorticism), blood levels of antibodies against certain infectious diseases that can cause megaesophagus, and toxicology assays, because some substances that cause chronic poisoning, like lead, can cause megaesophagus. These

tests are considered on a case-by-case basis in order to detect possible triggers or causes of megaesophagus.

LIVING WITH THE DIAGNOSIS

Megaesophagus is a potentially serious and sometimes even life-threatening illness. The prognosis (outlook for improvement and return to normal) varies dramatically with the underlying cause of the disease, the presence of secondary complications (i.e., pneumonia), the administration of appropriate treatments and response to those treatments (is the medication helping, or is the megaesophagus too severe?), and the level of nursing care and treatment compliance that can be provided at home. Some cases will completely resolve if the underlying disease is treated, while many cases will persist despite all of the appropriate measures. During the course of the disease, it is very important to keep all recommended follow-up appointments and tests with your veterinarian in order to monitor the progression of disease and make any needed medication or treatment adjustments. At home by monitoring your pet's weight, as well as changes in appetite, behavior, frequency of regurgitation, and breathing, you can collect helpful information to bring to your next appointment.

Give all prescribed medications as directed by your veterinarian. These medications generally are essential in controlling the effects of megaesophagus as well as improving the quality of your pet's life.

Food and water should be maintained in an elevated position so that gravity can help move food through the esophagus, toward the stomach. This can be accomplished by placing food and water bowls on a table or stepstool or by encouraging animals to eat with their front legs placed up on a chair, table, or stepstool. Ideally, animals are held in a sitting, upright position for as much as 10 to 15 minutes after eating or drinking, to help food and water flow down into the stomach.

You should discuss an ideal diet for your pet with your veterinarian and feed only the recommended foods. If your pet is no longer willing to eat a particular food, contact your veterinarian prior to changing foods. Both the consistency of the food and an adequate level of nutrition are extremely important in megaesophagus. In many cases of megaesophagus, a high-calorie food fed in frequent small meals through the day is ideal. This allows the food to pass through the esophagus gradually. The consistency of the food must be tailored to the individual pet since some animals do well with a gruel, where others do better with meatballs of canned or other solid food.

Some dogs or cats require the placement of a feeding tube in order to maintain adequate nutrition. In such cases, be sure to ask your veterinarian or veterinary technician to show you how to appropriately administer food, water, and medications through the tube, flush the tube if it becomes blocked, and how to keep the tube's entry point at the skin clean and dry.

TREATMENT

The goals of treating an animal that has megaesophagus are to eliminate the cause when possible, minimize the frequency of regurgitation, prevent overdistention of the esophagus, maintain a good level of nutrition and body condition, prevent or rapidly identify and treat complications such as aspiration pneumonitis, and improve the overall quality of the pet's life.

Treatment of megaesophagus must be based on the individual patient, with special attention paid to severity of the symptoms, underlying cause, and secondary diseases that may be involved. In every patient, however, all toxins (mainly thallium or lead—both fairly rare as causes of megaesophagus) that can cause megaesophagus should be identified and removed from the

environment, and all concurrent or underlying diseases should be identified and treated.

Patients with severe symptoms of megaesophagus and aspiration pneumonia often need to be hospitalized initially while intravenous (IV) fluids are given to correct dehydration and electrolyte abnormalities and medications including antibiotics are initiated. If hospitalization is not required, your veterinarian can start treatment with medications and treatments that you can give at home.

Appropriate diet (caloric content and consistency) and administration (elevated) is essential in providing the best care for dogs or cats with megaesophagus (see above). Of course, most dogs and cats do not understand this, and you should use distractions such as holding up a treat (dogs), holding your pet in your arms (cats, small dogs), or even purpose-made chairs (e.g., "Bailey chair") to help keep him/her seated upright for several minutes.

Some patients will require the placement of a temporary or permanent feeding tube in order to maintain an adequate level of nutrition. This tube allows for food and water to be administered directly into the stomach or intestines.

There are several different medications available that can help improve the function of the gastrointestinal tract, especially by decreasing reflux from the stomach back to the esophagus sphincter muscle between the esophagus and the stomach. Medications that help reduce the acidity of the stomach and those that coat and protect the esophagus and stomach lining can also be beneficial in some cases. These drugs have varying levels of success from patient to patient.

Animals with aspiration pneumonitis will need to be treated with broad-spectrum antibiotics for an appropriate time frame depending on the severity of the symptoms.

DOs

- Realize that the proper management of a pet with megaesophagus requires significant owner/family commitment and that in many cases the symptoms improve somewhat but that the need for this level of care often can be lifelong.
- Realize that serious and life-threatening complications (i.e., aspiration pneumonitis) can arise if megaesophagus is severe, left untreated, or treated inappropriately.
- Keep all recommended follow-up appointments with your veterinarian since they are essential in monitoring your pet's response to medications and treatments.
- Have your veterinarian or veterinary technician show you how to give all medications and demonstrate the correct method for feeding tube handling, administration, and cleaning.
- Handle and give all medications exactly as directed by your veterinarian. If your animal is having side effects from any medications or you are finding it very difficult to medicate your animal, contact your veterinarian for advice before discontinuing the treatment.
- Ask your veterinarian questions about information you do not understand.
- If you do not trust or are not comfortable with your veterinarian, get a second opinion from another veterinarian or a veterinary internal medicine specialist.
- Consider humane euthanasia if your pet is not responding to all possible treatments and you feel he or she is suffering or has a poor quality of life.

DON'Ts

- Do not postpone a visit to your veterinarian if you observe any symptoms of illness or of megaesophagus since early diagnosis and treatment can aid in preventing serious and life-threatening complications of the disease and improve the quality of your

pet's life. The initial screening tests can often be performed on an outpatient basis.

- Do not give any medications that are not prescribed by your veterinarian for the specific animal in question.
- Do not stop elevating food and water or any medications if your animal is feeling better without consulting with your veterinarian first.
- Do not assume that all sources of information are accurate or complete (i.e., Internet sites, outdated pamphlets or books, pet store workers, friends, etc.). Ask your veterinarian for recommended sources of information, including a second opinion with a specialist in internal medicine (veterinary internist; directories at www.acvim.org and www.ecvim-ca.org).

WHEN TO CALL YOUR VETERINARIAN

- If you are unable to give medications as prescribed or if you require a prescription refill.
- When you observe new signs or symptoms (see below).

SIGNS TO WATCH FOR

- Watch for general signs of illness, which can include changes in appetite, weight loss, decrease in activity, lethargy and sluggishness, and a dull or poorly kept haircoat.
- Watch for signs of recurrent or worsening megaesophagus, which can include frequent regurgitation, excessive salivation, foul breath, and weight loss.
- Watch for signs of aspiration pneumonitis, which can include nasal discharge, breathing difficulties, sluggishness/weakness due to fever, and coughing.

ROUTINE FOLLOW-UP

- As primary/idiopathic megaesophagus is a serious disease that can deteriorate over time, it is important to keep all recommended follow-up appointments and tests with your veterinarian in order to monitor the progression of disease, document and treat any new problems that may arise, and make any needed medication adjustments.

Other information that may be useful in some cases: "How-To" Client Education Sheets:

- How to Provide Elevated Feedings
- How to Use and Care for an Indwelling Feeding Tube
- How to Provide Home Respiratory Therapy (Humidification, Nebulization, Coupage)

Practice Stamp or Name & Address