

Megaesophagus

Vomiting versus Regurgitation

Most people do not realize that there is a difference between these two actions. Vomiting is an active process. There is gagging, heaving, and retching as the body actively expels stomach contents. Regurgitation is passive. For whatever reason, food is swallowed from the mouth but never really goes anywhere beyond that point. Food sits in the esophagus until it simply falls back out the mouth at some point. In the dog, megaesophagus is the most common cause of regurgitation.

What is Megaesophagus?

The esophagus is the tube connecting the throat to the stomach. When food is perceived in the esophagus, neurologic reflex causing muscle contraction and relaxation lead to rapid transport of the food into the stomach, like an elevator going down. Other reflexes prevent breathing during this swallowing process to protect the lungs from aspiration.

When these reflexes are interrupted such as by disease in the esophageal tissue or nerve disease, the esophagus loses its ability to transport food. Instead the esophagus loses all tone and dilates. Also, the reflex protecting the lung is disrupted and aspiration pneumonia commonly follows.

What Kind of Conditions Cause Megaesophagus?

Most cases are young puppies (Great Danes, Irish setters, German Shepherds are genetically predisposed). In these cases the condition is believed congenital though it often does not show up until the pup begins to try solid food. Congenital megaesophagus is believed to occur due to incomplete nerve development in the esophagus. The good news is that nerve development may improve as the pet matures. Prognosis is thus better for congenital megaesophagus than it is for megaesophagus acquired during adulthood.

Another congenital problem is the “Vascular Ring Anomaly.” This is a band of tissue constricting the esophagus. Such tissue bands are remnants of fetal blood vessels which are supposed to disappear before birth. They do not always do so. Improvement is obtained when the band is surgically cut but in 60% of cases some residual regurgitation persists.

In adult dogs, diseases that cause nerve damage can lead to Megaesophagus. Myasthenia gravis would be a common cause and very important to rule in or out. Myasthenia gravis is a condition whereby the nerve/muscle junction is destroyed. Signals from the nervous system sent to coordinate esophageal muscle contractions simply cannot be received by the muscle. Megaesophagus is one of its classical signs though general skeletal muscle weakness is frequently associated. This condition is treatable but special testing is needed to confirm it.

Scarring in the esophagus (as would occur after a foreign body episode or with damage to the esophagus from protracted vomiting) may be sufficient to interrupt neurologic transmissions or even narrow the esophagus so that food cannot pass through it. (Such a narrowing is called a "stricture.") Technically, this is not a true megaesophagus as the muscles are working normally; there is simply an obstruction present. Special balloons can be inserted in the esophagus to dilate the narrowed area but some residual regurgitation is likely to persist. Tumors of the esophagus may have similar effects in that they, too, can cause obstruction.

Hypothyroidism may be associated with megaesophagus. It is easy to rule thyroid disease in or out with blood testing and it is important to treat a thyroid hormone deficiency; however, megaesophagus usually does not correct with thyroid replacement therapy. Whether or not hypothyroidism can truly cause megaesophagus is still being debated.

Addison's disease (hypoadrenocorticism) has also been associated with megaesophagus though this would be a rare cause. This condition represents a deficiency of cortisone production by the adrenal gland. This deficiency alters the metabolism of esophageal muscle. Diagnosis and treatment are not difficult.

External obstruction of the esophagus could cause a similar syndrome by creating a blockage. A mass in the chest could pinch the esophagus closed.

Many of the above conditions are treatable and it is important to find a cause for megaesophagus if it is at all possible to do so. Unfortunately, most cases do not have a clear cause and must be managed as they are. This can be hard work.

The Diagnostic Plan

First, the megaesophagus must be diagnosed. This is done radiographically. If megaesophagus is not obvious on plain films, it is better not to use contrast (Barium) studies if possible. This is because megaesophagus patients have the tendency to inhale or "aspirate" food contents that back up in their throats. This is dangerous enough when the material is simply food but if barium is present and becomes inhaled, the body has great difficulty removing it from the lungs. Still, sometimes this is the only way to see the megaesophagus.

The next step is to determine whether or not the animal has "aspiration pneumonia" from inhaling regurgitated food material. Chest radiographs in combination with a history of cough, nasal discharge, and the presence of fever indicate pneumonia. Usually the chest radiographs will show disease in the areas of the chest which are lowest in the standing animal as this is where gravity draws inhaled material. The presence of aspiration pneumonia makes the case much more serious as pneumonia can be a life-threatening condition.

Endoscopy is an important diagnostic test for the megaesophagus patient and, if possible, should be done in all cases. In endoscopy a long skinny tube with a special camera on the end is passed down the esophagus to the stomach. Ulcers on the esophageal walls will be seen and any narrowings will be obvious. Biopsies can be taken if any suspicious lesions are present.

Blood testing to rule in or out treatable causes of megaesophagus should be performed.

Treatment

The first step is to determine if the dog does better with a liquid or solid diet. Every individual is different. One must train the dog to eat in an elevated position. Ideally, the pet should be kept in this position for 10-15 minutes after the meal. Feeding tubes can be placed directly in the stomach for more convenient feeding. If the “cardiac sphincter” which separates the stomach from the esophagus is weak, though, regurgitation may still occur. A medication called [Metoclopramide](#) (trade name: Reglan) may help increase the tone of this sphincter.

Medication for nausea may be helpful for patient comfort and strong antacids will help minimize acid related damage to the esophagus when food is regurgitated from the stomach.

There is a motility modifier called "Cisapride" which is helpful to many cases. Theoretically this should not be so as the type of muscle in the dog's esophagus is not of a type that should be affected by this medication. Nonetheless, many individuals experience fewer episodes of regurgitation while on cisapride. Given the difficulty in managing this condition, we recommend at least a one week trial for any megaesophagus patient. Cisapride also is able to increase cardiac sphincter tone.

Aspiration pneumonia is treated with fluids and antibiotics as is any other bacterial pneumonia, though these individuals may re-aspirate at any time and require treatment all over again. Hospitalization may be required.

Megaesophagus is a difficult condition to manage. Treatment requires dedication and commitment and still may produce poor results. Be sure your veterinarian has answered all your questions about this condition.