The canine esophagus is a muscular tube used to bring ingesta from the mouth to the stomach. Anatomically the esophagus is divided into the upper esophageal sphincter, the body, and the lower esophageal sphincter. In the dog the entire body of the esophagus is composed of skeletal muscle innervated by branches of the vagus nerve. The lower esophageal sphincter is composed of an outer layer of skeletal muscle and an inner layer of smooth muscle.

Symptoms of disease of the esophagus can include regurgitation, ptyalism, dysphagia, and/or pain with swallowing. It is important in an examination to always differentiate vomiting from regurgitation as most owners will not appreciate this difference. Vomiting is an active process (abdominal press, etc) frequently associated with nausea and/or bile in the vomitus. Regurgitation is a passive process.

Primary causes of esophageal problems include motility issues, inflammation, and/or obstruction. If esophageal problems are suspected, the initial diagnostics would likely include thoracic +/- cervical radiographs and baseline bloodwork including a CPK. Findings could include an esophageal foreign body or mass, but the most common finding would likely be esophageal dilation which can either be segmental or generalized. Segmental dilation may be more suggestive of a focal obstructive lesion whereas generalized dilation may suggest diffuse or very distal esophageal obstruction. In cases where no radiographic changes are noted, but esophageal disease is still suspected, diagnostics including fluoroscopy, esophagoscopy, and contrast esophagram could be considered.

This talk is focused on canine megaesophagus, which is a diffuse pathologic dysfunction of the esophagus that frequently leads to generalized and sometimes severe gas dilation. The cause can be in the CNS, peripheral nerves, musculature, or at the neuromuscular junction.

Congenital megaesophagus typically becomes apparent around 3 months of age and has proven heritability in some breeds. Breeds affected can include the Great Dane, German Shepherd, Labrador Retriever, Newfoundland, Shar Pei, Irish setter, Wirehaired Fox Terrier, and the Miniature Schnauzer. In some dogs this is an ultimately fatal condition while in some breeds such as the Miniature Schnauzer, the issue often resolves with maturity.

Acquired megaesophagus develops later in life (typically at age 5-12) and is usually caused by a peripheral neuropathy, issue with the neuromuscular junction, or is due to weakness or dysfunction of the esophageal musculature.

If an acquired megaesophagus is diagnosed, further testing is targeted at finding potentially treatable causes. Frequently performed tests could include adrenal axis testing to rule out hypoadrenocorticism, acetylcholine receptor antibody testing to rule out myasthenia gravis, and/or thyroid testing.

Myasthenia gravis (MG) is the most commonly diagnosed single cause of megaesophagus. MG is an auto-immune disease directed against the acetylcholine receptor in the synapse leading to dysfunction of
the neuromuscular junction. MG can be focal (weakness of esophagus, pharynx, and/or larynx) or can be generalized. The treatment for MG involves the use of acetylcholinesterase inhibitors such as pyridostigmine or neostigmine. Megaesophagus resolves in about 50% of cases with treatment. Anti-inflammatory medications (prednisone, azathioprine, etc) may help speed remission. Repeat acetylcholine receptor antibody testing should be performed as many dogs with develop remission and not require long term therapy.

Hypocortisolism associated with hypoadrenocorticism can lead to muscular weakness which can lead to signs of esophageal dysfunction and/or esophageal dilation. Symptoms usually resolve with prednisone therapy.

Hypothyroidism has been associated with megaesophagus, but causality has not been proven. Many dogs have both hypothyroidism and megaesophagus, but may have other issues. Neither improvement in radiograph megaesophagus nor improvement in symptoms has been consistently demonstrated with treatment of hypothyroidism.

Geriatric onset laryngeal paralysis and polyneuropathy (GOLPP) is a disease process described in many large breed dogs but especially the Labrador Retriever. These dogs frequently have signs of laryngeal paralysis but also develop signs of progressive hind limb dysfunction. Studies have shown that many of these dogs also have signs of megaesophagus or esophageal dysfunction, presumptively due to degeneration of the recurrent laryngeal nerves. These dogs are likely at higher risk for aspiration pneumonia following laryngeal tie back surgery.

Idiopathic megaesophagus (we don’t know the cause) is diagnosed in about 50% of megaesophagus cases. Most of these cases are likely neurogenic in origin although a muscular cause can occur in some dogs. This usually leads to severe esophageal dysfunction and dilation and is frequently fatal.

Treatment of megaesophagus is largely symptomatic and primary treatment goals include avoiding malnutrition and dehydration, avoiding aspiration pneumonia, and minimizing esophageal dilation and regurgitation.

Dietary management should involve feeding a high quality calorie dense diet. The consistency of diet tolerated best can vary between dogs so one should try canned food, a watery gruel, and/or even kibble. Most dogs do best on a canned diet fed in small meat balls to slow ingestion. Elevating feeding for 10-15 minutes after ingesting water or food can help propel food into the stomach via gravity and is surprisingly effective in some dogs. Some owners try to hold up small dogs, but larger dogs frequently require feeding on stairs or a ramp, or the use of a “Bailey’s chair”. If all else fails, a gastrostomy tube (placed surgically or endoscopically) can insure the delivery of food, water, and medications to the stomach and may reduce regurgitation. Despite this, regurgitation and aspiration pneumonia remains an issue in many dogs.

Antacids can be used in dogs with esophagitis and/or gastroesophageal reflux disease (GERD). Antibiotics are used (ideally based on culture) for aspiration pneumonia. Prokinetic medications such as cisapride or metoclopramide are believed by some to be helpful in some megaesophagus cases, but given that the body of the esophagus is composed of skeletal muscle, this is unlikely to be helpful and may be harmful in some cases.
The prognosis with megaesophagus varies with cause. About 20-46% of dogs with congenital megaesophagus will have resolution. Megaesophagus secondary to a treatable condition likely have the best chance of long term survival. The prognosis of idiopathic megaesophagus is guarded at best. The average survival time for this condition is about 5 months.