

German Shepherd Dog with vomiting, retching and tachypnoea

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SIGNALMENT AND HISTORY

A 3-month-old intact male German Shepherd Dog was evaluated because of vomiting and retching of 1 day's duration. The dog began vomiting following Nylabone ingestion the previous day. The patient had a history of regurgitation since 3 weeks of age. The owner suspected the patient had megaesophagus and had been using a Bailey chair since the dog was 3 weeks old (although a diagnosis of megaesophagus had not been confirmed). The patient was also treated for presumed aspiration pneumonia (although radiographs were not taken at that time) with doxycycline at 3 weeks of age. Vomiting episodes observed on the day of presentation were different from the previously seen regurgitation because there was active retching on the day of presentation. The owners also reported periods of tachypnoea. On initial evaluation, the patient was hypersalivating and had laboured breathing. Muffled heart sounds and increased bilateral bronchovesicular sounds were heard on thoracic auscultation. During the course of the physical examination, regurgitation was observed. Abdominal palpation was unremarkable. Radiography of the thorax was performed next.

Determine whether additional imaging studies are required or make your diagnosis from Figure 1. What features are visible? However, as the owners were considering intervention, additional diagnostic imaging (Figure 2) was performed under sedation.

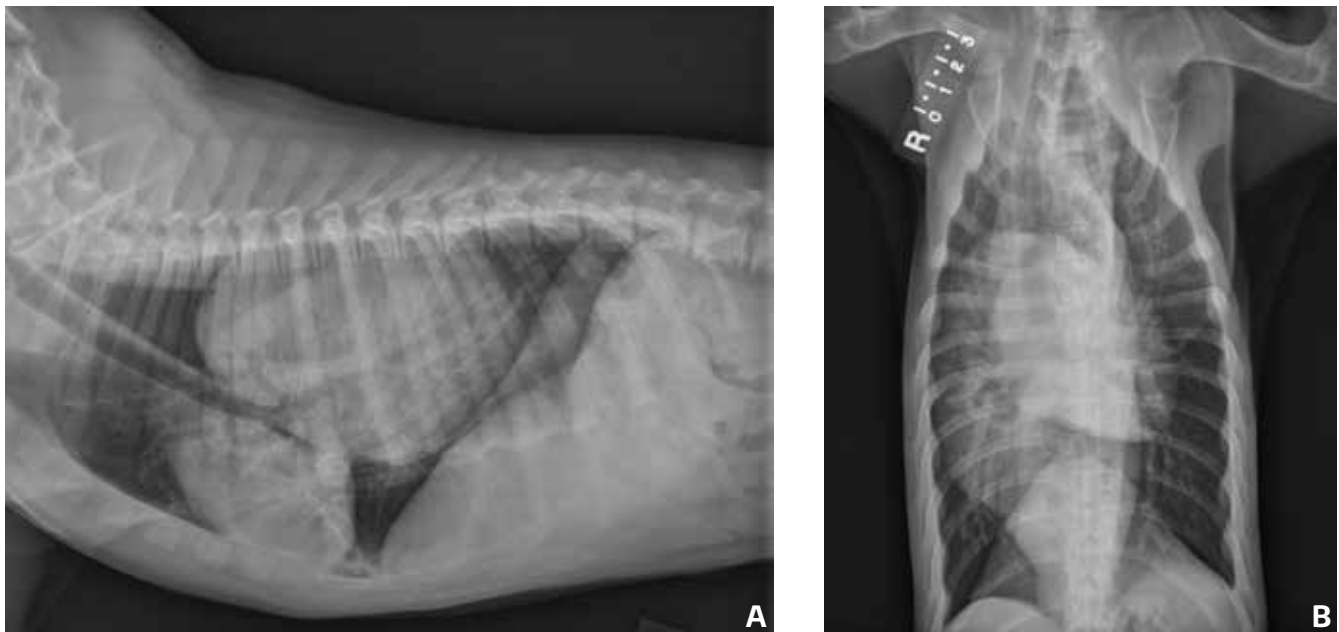


FIGURE 1. Lateral (A) and ventrodorsal (B) radiographic views of the thorax of a 3-month-old intact male German Shepherd Dog evaluated for vomiting and retching of 1 day's duration, following Nylabone ingestion the previous day. The patient also had a history of regurgitation since 3 weeks of age.

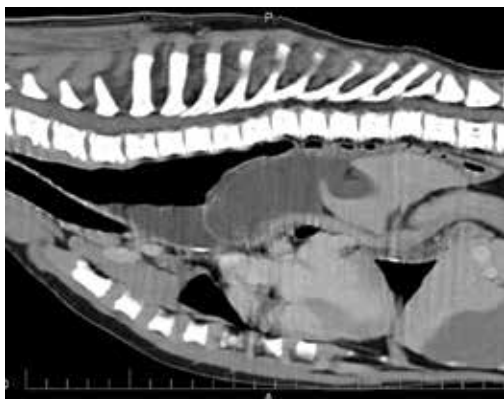


FIGURE 2. What abnormal features can you identify on this sagittal contrast CT image of the same dog shown in Figure 1?

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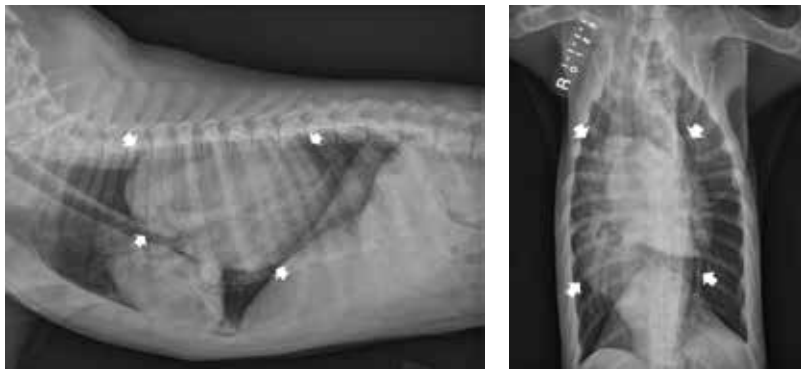


FIGURE 3. Same radiographic views as in Figure 1, showing a large, opaque soft tissue structure with white arrows delineating within the thoracic oesophagus causing ventral displacement of the trachea and heart.

DIAGNOSTIC FINDINGS AND INTERPRETATION

Thoracic radiography

There is a large soft tissue opaque structure within the thoracic oesophagus from the level of T4–T12 that is causing ventral displacement of the trachea and is displacing the heart ventrally and to the left. There is gas dilation of the oesophagus cranial to the mass. There is a curved soft tissue–gas interface associated with the cranial aspect of the mass. On the ventrodorsal view, there is gas in the oesophagus surrounding the intraluminal mass. There is an alveolar pattern within the ventrally dependent portion of the right middle lung lobe and caudal subsegment of the left cranial lung lobe. There is a structure in the cranial abdomen with gas in the lumen that represents a portion of the stomach or colon. The entirety of the stomach is not identified within the abdomen. The structure within the oesophagus was suspected to represent a gastro-oesophageal intussusception (Figure 3). The appearance of the lungs was likely caused by mild aspiration pneumonia.

Computed tomography

The cervical and thoracic oesophagus is diffusely and severely dilated. There is intussusception of several abdominal organs into the oesophagus, including the majority of the stomach, the spleen, a large portion of the omentum and mesentery and a portion of the pancreas. The spleen is small and folded upon itself. The intussuscepted organs are aggregated in a tubular shape and are surrounded by a thick soft tissue-attenuating rim of tissue, which likely represents mesentery or omentum. There is ventral and leftward compression and displacement of the heart and great vessels and ventral displacement of the trachea by the dilated oesophagus. There is a large volume of gas throughout the dilated oesophagus, with accumulation of a moderate volume of fluid within the dependent portion of the cranial thoracic oesophagus. The oesophageal fluid is primarily cranial to the intussuscepted organs; however, fluid intermixed with the mesentery/

omentum is suspected because this tissue is hypoattenuated compared with the surrounding soft tissues. The oesophageal hiatus is widened (Figure 4).

DISCUSSION

The CT confirmed the gastro-oesophageal intussusception with intussusception of the stomach, spleen, mesentery/omentum and pancreas into the oesophagus without compromise of the splenic blood supply, with a generalised megaesophagus, widened oesophageal hiatus and aspiration pneumonia. Considering the invasiveness and expense of surgery, and the guarded prognosis, the owners elected euthanasia. A necropsy confirmed generalised megaesophagus with intussusception of the entire stomach, a small part of the duodenum, the entire spleen with mesentery and the left limb of the pancreas, together with aspiration pneumonia.

Canine gastro-oesophageal intussusception (GOI) is a rare and fatal disease that usually affects puppies aged < 3 months of age, mostly reported in male German Shepherd Dogs and commonly seen with megaesophagus, secondary pneumonia and possibly abnormal oesophageal hiatus.¹ This is the first report in which the entire stomach, entire spleen, mesentery, small part of the duodenum and part of the pancreas were all involved in the intussusceptum of a dog. GOI was suspected on the thoracic radiographs, but CT assisted in determining which organs were intussuscepted, assessing the blood flow within the intussuscepted organs and for planning the corrective procedure either surgically (Belt loop gastropexy² or bilateral incisional gastropexies³) or endoscopically.^{4,5} GOI should be suspected in any young dog with a history of megaesophagus and sudden deterioration in clinical condition.

CONFLICTS OF INTEREST AND SOURCES OF FUNDING

No external funding or financial support was received.

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FIGURE 4. Sagittal contrast CT image of the gastro-oesophageal intussusception of the same dog shown in Figure 1. Notice the intussusception (white arrows) of the stomach, spleen, mesentery, omentum and pancreas into the oesophagus.