

What Is Your Diagnosis?

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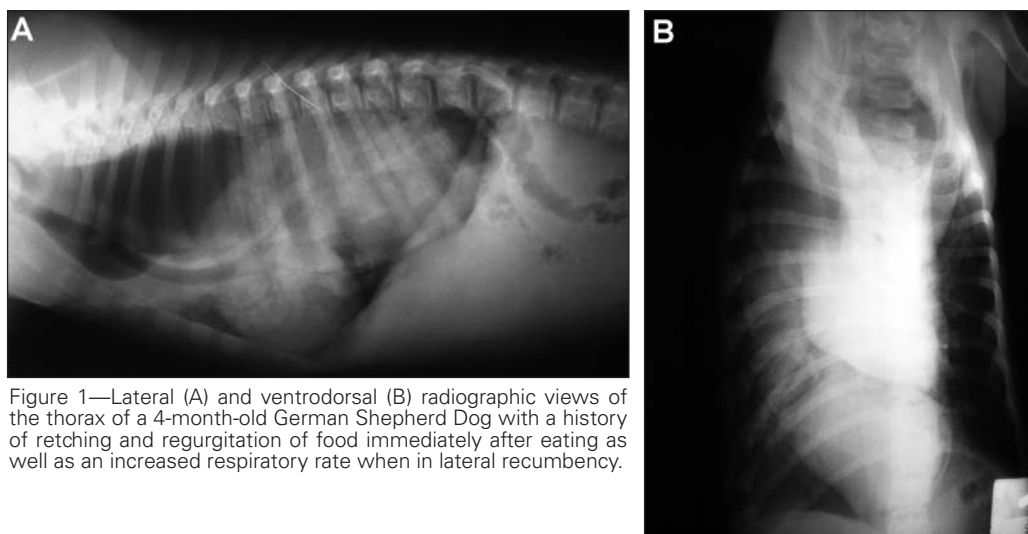


Figure 1—Lateral (A) and ventrodorsal (B) radiographic views of the thorax of a 4-month-old German Shepherd Dog with a history of retching and regurgitation of food immediately after eating as well as an increased respiratory rate when in lateral recumbency.

History

A 4-month-old sexually intact male German Shepherd Dog was referred because of increased respiratory effort and restlessness after falling off of the owner's porch earlier that day. The dog also had a history of retching and regurgitation of food immediately after eating as well as an increased respiratory rate when in lateral recumbency. The owner reported that the dog always had a good appetite, but recently noticed that it appeared thinner. The dog had been vaccinated and treated with an anthelmintic 1 week earlier. No problems had been reported with the other puppies in the litter.

On physical examination, the dog was thin and had a body condition score of 2 of 5. The rectal temperature was slightly high, and the dog had tachycardia and tachypnea. Lung sounds were not heard on the right side during thoracic auscultation. Signs of pain were elicited during abdominal palpation. The PCV and concentrations of total solids and serum glucose were within reference limits. Thoracic radiographic views were obtained from the referring veterinarian (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page →

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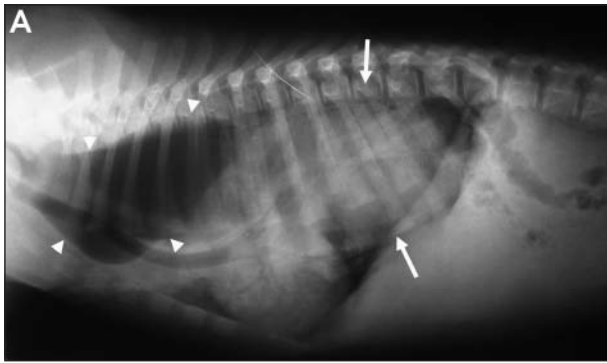


Figure 2—Same lateral (A) and ventrodorsal (B) radiographic views of the thorax as in Figure 1. Notice the large, homogenous, soft tissue opacity in the caudal portion of the mediastinum (arrows) and the severe generalized gas distension of the esophagus (arrowheads).



Radiographic Findings and Interpretation

A large, homogenous, soft tissue opacity is visible in the caudal portion of the mediastinum. Cranial to this opacity, there is severe generalized gas distension of the esophagus, with displacement of the trachea and cardiac silhouette. An alveolar pattern with air bronchograms is evident in the left cranial lung lobe. In the cranial portion of the abdomen, lack of serosal margin detail is noticeable, and the stomach is not visible (Figure 2). The radiographic findings are consistent with megaesophagus, gastroesophageal intussusception (GEI), and bacterial pneumonia, likely caused by aspiration. Decreased serosal margin detail is consistent with lack of intra-abdominal fat in this young animal. Abdominal effusion could not be ruled out.

Comments

Gastroesophageal intussusception is a rare condition that usually affects young dogs (generally < 1 year old, with most < 3 months old), with a higher incidence reported in males and German Shepherd Dogs.¹⁻³ Gastroesophageal intussusception is characterized by invagination of the stomach and possibly other abdominal organs (eg, spleen, pancreas, omentum, and the proximal portion of the duodenum) into the distal portion of the esophagus.^{1,2}

Diagnosis of GEI can be made by survey or contrast radiography and endoscopy.¹ Survey radiography

may reveal a soft tissue or heterogeneous mass in the caudodorsal portion of the mediastinum. The stomach silhouette, in whole or in part, may not be visible in the cranial portion of the abdomen. Positive-contrast radiography may reveal displacement of the gastroesophageal junction or a portion of the stomach into the thorax. Endoscopy may reveal gastric rugal folds in the lumen of the distal portion of the esophagus.⁴

The exact pathogenesis of GEI is unclear; however, it appears to be multifactorial and has been associated with vomiting and preexisting esophageal disease, especially congenital or idiopathic megaesophagus.^{1,3} Risk factors for GEI in humans include increased abdominal pressure (with obesity or pregnancy), excess food with intense physical activity, and dyspeptic disease.^{2,5} Development of GEI is dependent on reverse gastric peristalsis as well as a sudden sustained increase in abdominal pressure caused by contraction of the abdominal wall muscles.

In small animals, clinical signs associated with GEI include vomiting, regurgitation, drooling, dysphagia, and signs of abdominal discomfort caused by complete or partial esophageal obstruction. Abnormal respiratory tract signs may also be detected if the affected intestine takes up substantial space in the thoracic cavity or if aspiration pneumonia has developed.³ Cases of chronic intermittent GEI have been reported in the literature, but animals with untreated acute GEI can go into shock and develop respiratory or vascular compromise. A 95% mortality rate has been reported for animals with complicated acute GEI.^{1,2} Therefore, GEI is a true gastrointestinal emergency.

Treatment of GEI involves endoscopic or surgical reduction of the affected intestine. Gastropexy is indicated after reduction to prevent recurrence.¹ Medical management of aspiration pneumonia or megaesophagus is also indicated.⁴ Prognosis with appropriate treatment has improved over the past 20 years. Long-term prognosis is most likely related to esophageal function.³

The owner of the dog of this report declined further diagnostic testing and treatment because of the concurrent presence of aspiration pneumonia and the probability of its recurrence with congenital megaesophagus. The dog was euthanized. Postmortem examination revealed marked dilatation of the thoracic portion of the esophagus with intussusceptions of the entire stomach, the spleen, and part of the omentum into the caudal third of the esophagus.

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