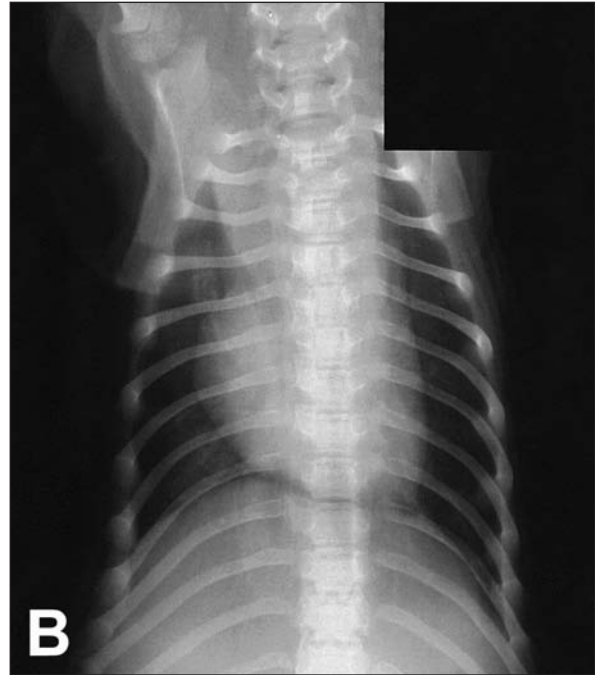


## What Is Your Diagnosis?



Figure 1—Right lateral (A) and ventrodorsal (B) radiographic views of the thorax of a 7-week-old puppy evaluated for coughing, gagging, and signs of pain when swallowing of 2 days' duration.



### History

A 7-week-old sexually intact female Sussex Spaniel was evaluated for coughing, gagging, and signs of pain when swallowing of 2 days' duration. The puppy had also been regurgitating food on the day of hospital admission. According to the owner, the puppy was able to drink water and eat individual pieces of moistened dog food without regurgitation. At the time of admission, the puppy was being weaned and had been fed dry food on the day clinical signs began. The puppy was unvaccinated and had been healthy otherwise. All littermates were healthy.

On physical examination, the puppy had signs of depression, was tachypneic, and had increased respiratory sounds bilaterally. Hydration was normal. Rectal temperature and heart rate were within reference ranges. Mucous membranes were moist and pink with capillary refill time < 2 seconds. Right lateral and ventrodorsal thoracic radiographs were taken (Fig 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—Right lateral oblique (A) and dorsoventral (B) esophagrams of a 7-week-old puppy. Notice a linear-branching filling defect within the lumen of the esophagus, extending from the thoracic inlet to the gastroesophageal junction.



## Diagnosis

**Esophagram diagnosis**—Esophageal foreign body. A linear-branching filling defect was identified within the lumen of the esophagus, extending from the thoracic inlet into the gastroesophageal junction (Fig 2).

## Comments

Radiography revealed ventral deviation of the trachea at the thoracic inlet, suggestive of enlargement of at least the cranial portion of the esophagus, widening of the cranial portion of the mediastinum, and gas within the lumen of the caudal thoracic portion of the esophagus at the level of the ventral tracheal deviation. Differential diagnoses included esophageal foreign body, vascular ring anomaly, and megaesophagus. Because the esophageal diameter appeared normal, megaesophagus and vascular ring anomaly were considered less likely to be the cause of the puppy's clinical signs.

An esophagram was performed by use of a nonionic iodinated contrast agent in an attempt to outline a suspected esophageal foreign body. Because of the hypertonic nature of ionic contrast agents, a nonionic iodinated contrast agent was used to decrease complications such as volume depletion when given orally and pulmonary edema if aspirated.<sup>1</sup> The esophagram was performed with the puppy awake, resulting in difficulties in obtaining a true lateral radiograph.

After general anesthesia was induced, an examination of the oral cavity revealed no abnormalities. Esophagoscopy was performed in an attempt to retrieve the foreign body. A stick with several small branches was observed just caudal to the pharynx, extending to the gastroesophageal junction. A snare was used to retrieve the stick by applying gentle and constant traction; however, it could not be moved into the oral cavity. Because 1 of the small branches had penetrated the soft palate, a mosquito hemostat was used to break off the branch and remove the stick from the soft palate. The stick was then removed by

esophagoscopy with no complications. The stick measured approximately 15.75 cm in length. After removal of the stick, esophagoscopy revealed healthy esophageal mucosa. The puppy recovered from anesthesia without complications, and antimicrobials were administered for 7 days because of the small laceration in the soft palate. The puppy was discharged to the owner the next day and has had no complications.

The authors believe that the length and character of the stick caused it to be fixed in position within the lumen of the esophagus at the level of the thoracic inlet, and because the stick extended to just cranial of the gastroesophageal junction, it would have been difficult to move the stick farther caudally within the gastrointestinal tract. A potential complication of this esophageal foreign body was perforation of the esophagus, which could lead to pneumomediastinum, pneumothorax, pleuritis, mediastinitis, pneumonia, or esophagobronchial fistulas.<sup>2,3</sup> In the puppy in this report, the esophageal foreign body was removed by esophagoscopy; however, foreign bodies that are difficult to retrieve may have to be removed via esophagostomy<sup>3</sup> or be advanced into the stomach and removed via gastrotomy.

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