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## What's Your Radiographic Diagnosis?

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A 3 year-old, neutered male, Bassett Hound presented for evaluation of acute onset of vomiting which had progressed to include anorexia and weight loss over a one week period. The dog had initially responded to symptomatic therapy. However, at home he continued to refuse food and had resumed vomiting. The description of the dog's "bringing up of food" was that of a passive action with no retching or abdominal contraction. Physical examination revealed normal body temperature, pulse rate, and respiratory rate. The dog was bright and alert but was not very active. No abdominal abnormalities were noted upon palpation. Thoracic auscultation was normal.

The history suggested regurgitation prompting differential diagnoses of esophageal disease. A barium swallow was performed and no esophageal motility or obstructive abnormalities were identified. However, an area of irregularity of the esophageal mucosa was identified. Endoscopic assessment was planned. Blood work revealed a moderate stress leukogram and normal liver and renal function.

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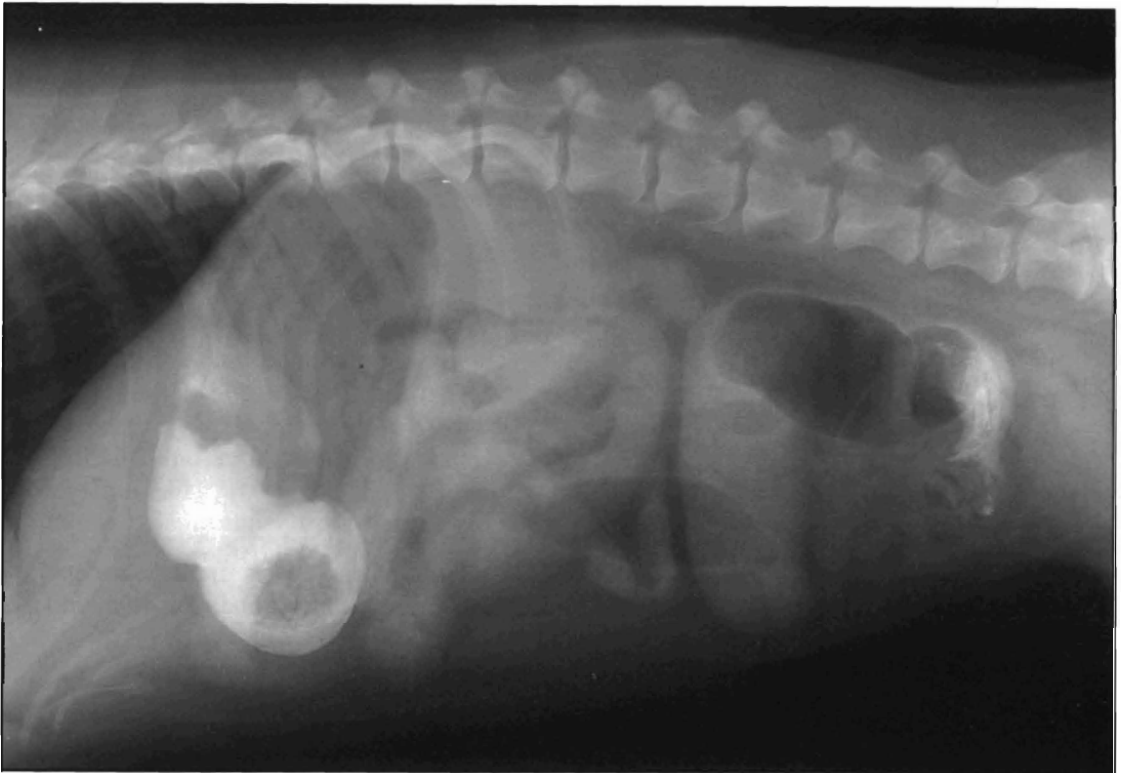
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On the following day, repeat abdominal palpation was performed and a firm mass was palpated in the cranial ventral abdomen. The dog had been observed to retch and vomit the prior evening. Prior to endoscopy, abdominal radiographs were taken. See Figure 1.

### Radiographic Findings

Barium is present in the stomach and cranial small intestinal tract persistent from the previous esophageal evaluation. The barium in the intestine is diluted in opacity. A rough edged, 3 cm diameter circular radiolucent filling defect is seen in the pyloric antrum on the right lateral view. This filling defect is not seen on the VD view. The duodenum and small intestinal loops that are filled with barium and gas are mildly to moderately dilated. The area of greatest dilation ends with a rounded area of irregular opacity in the right caudal abdomen at the plane of L5-7. The rounded area contains a mixture of short linear to elliptical gas mixed with barium and a very thin linear 1.5 cm radiopaque line. Several focal narrowings of the gastric lumen and affected small intestine indicate the presence of peristalsis.

**Please turn to page 96 for the diagnosis.**



**Figure 1:** Right lateral and VD abdominal radiographs of 3 year-old Basset Hound being evaluated for vomiting. These films were taken the day after evaluation of the esophagus with a barium swallow.

### Radiographic Diagnosis

Gastric and small intestinal foreign bodies causing partial obstruction.

### Outcome and Discussion

Surgery was performed. A walnut was removed from the stomach. A second walnut along with matted hair, plant material, and other debris was found obstructing the proximal jejunum. The gastric and jejunal tissue appeared viable and simple gastrotomy and enterotomy were used to remove the foreign material. The dog had an uncomplicated recovery.

The differentiation of regurgitation from vomiting is stressed in the evaluation of the patient presented for vomiting.<sup>1</sup> Clear differentiation of these clinical signs allows for the development of a specific diagnostic plan. Regurgitation requires evaluation of the esophagus, while vomiting requires evaluation of the gastrointestinal tract and abdominal organ function by biochemical profiles. Although clear differentiation may be obtained by taking a careful history, direct observation of the patient following a test meal may allow clarification of a questionable history.

Survey films of the thorax and abdomen are warranted in the patient presented with a confusing history of vomiting or regurgitation. Radiolucent and predominately radiolucent foreign

bodies are easily overlooked in survey films unless they cause near complete to complete bowel obstruction, entrap radiopaque material or air, or are recognized by a characteristic geometrical shape.<sup>2</sup> Partial bowel obstructions are more difficult to identify in survey films due minimal dilation of the bowel proximal to the partial obstruction.<sup>3</sup> The radiolucent foreign bodies are well depicted following barium administration. However, depending on their size, a gastric foreign body may not be initially seen when the stomach is filled with the full barium volume. The smaller gastric foreign body may be best seen after passage of most of the barium. In this patient, the small amount of barium that had been used for esophageal evaluation did not obscure the gastric foreign body in the lateral view. In the VD view, it was presumed that the walnut had "rolled" out of view.◆

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