

# Compressed Vegetable Chew Treats: A Common Gastrointestinal Foreign Body

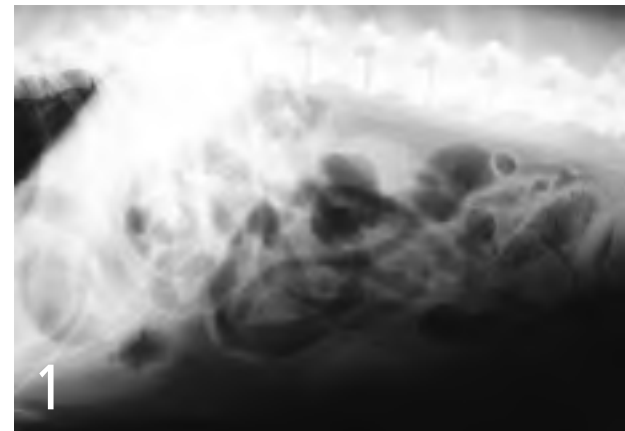
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A 2-year-old, spayed female basset hound was presented on an emergent basis with a 7-day history of intermittent vomiting, lethargy, and a 1-day history of painful abdomen.

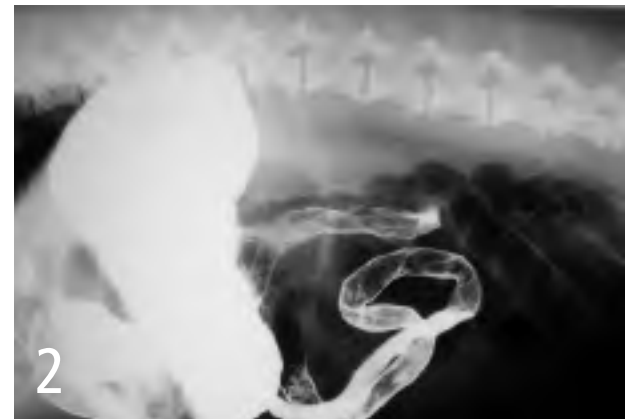
The owners denied any known foreign body ingestion, but did describe routinely giving two brands of compressed vegetable chew treats for dental health. The physical examination revealed normal rectal temperature (102.3° F) and respiration (20 breaths/minute). Mild sinus tachycardia (132 bpm), a tense and painful abdomen, and a mild elevation in serum amylase levels (1830 IU/L [reference range, 500 to 1500 IU/L]) were found. The rest of the physical examination showed no abnormalities, and the dog's serum electrolytes, renal function, hepatocel-

lular and cholestatic enzyme activities, and complete blood count were all within reference ranges.

Survey abdominal radiographs were done and showed generalized dilatation of small intestinal loops (**Figure 1**). A barium series was performed after administration of 10 ml/kg barium sulfate by mouth. After 3.5 hours, most of the barium remained within the gastric fundus, and none had passed beyond the proximal jejunum (**Figure 2**).



1 Lateral abdominal radiograph showing generalized dilatation of the small intestine.



2 Ventrodorsal radiograph taken 3.5 hours after administration of 10 ml/kg PO barium sulfate. Note the lack of gastric emptying and lack of progression of barium past the proximal jejunum.

**ASK YOURSELF . . .**

What is the next most appropriate therapeutic intervention in this patient?

- A. Administer metoclopramide and famotidine for vomiting and gastric reflux.
- B. Perform gastrointestinal endoscopy to remove the gastric foreign body.
- C. Perform abdominal ultrasonography to rule out pancreatitis.
- D. Perform exploratory laparotomy to determine the cause of gastrointestinal obstruction.
- E. Repeat abdominal films in another 2 hours, to see whether the barium has moved.

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## INSIGHTS FROM CLINICAL CASES . DISCUSSION

### Correct Answer: D Perform exploratory laparotomy to determine the cause of gastrointestinal obstruction.

Because the patient had clinical signs and radiographic evidence<sup>1-7</sup> of both gastric and small intestinal obstruction, gastrointestinal endoscopy would probably not be successful in retrieving a foreign body from the proximal jejunum.

Although serum amylase levels were slightly elevated in this patient, the chronicity of the condition and normal white blood cell count did not support a clear-cut diagnosis of pancreatitis.

Serum amylase can be increased due to lack of renal clearance in a dehydrated animal. An increased level of serum amylase is not a sensitive or specific indicator of pancreatitis—elevations can also occur with gastrointestinal inflammation.<sup>2</sup> Although dilatation of the duodenum is sometimes observed with pancreatitis, the generalized small intestinal dilatation was more characteristic of a small bowel obstruction.<sup>1</sup>

### Case Management

Exploratory laparotomy was done, and a whole compressed vegetable chew treat was removed from the stomach by gastrotomy (Figure 3)



At the time of surgery, a whole compressed vegetable chew treat was removed from the patient's stomach.

and pieces of chew treats were removed from the jejunum by two enterotomy incisions (Figure 4). Additional pieces of the compressed vegetable chew treat were successfully

### TAKE-HOME MESSAGES

- Gastrointestinal foreign bodies should be considered in any patient with intermittent signs of vomiting, anorexia, and abdominal pain.
- Even with appropriate use, compressed vegetable chew treats can be ingested whole or bitten into pieces large enough to cause gastrointestinal obstruction.
- Clients should be cautioned about proper use of, and the potential for gastrointestinal obstruction with, use of any toy or dental chew product, even highly digestible compressed vegetable chew treats.



Further exploration revealed two obstructions in the jejunum, comprising large pieces of a compressed vegetable chew treat.

milking into the patient's colon and were removed by defecation. The patient recovered uneventfully from surgery and continued to receive IV fluids, H<sub>2</sub> receptor blockers (famotidine 0.5 mg/kg IV Q 12 H), analgesia (fentanyl 3 µg/kg/hour IV continuous-rate infusion), and cephalexin (22 mg/kg PO Q 8 H). She began eating 24 hours later, and was discharged at 36 hours after surgery without further incident.

### Discussion

Compressed vegetable chew treats are easily gulped. Although the manufacturer states that owners should be present during chewing of the product to prevent gulping or rapid ingestion, realistically this is often not possible. Some manufacturers claim that the products are 100% digestible. However, digestion can take days, and before it can occur, large pieces can, and do, move past the pylorus and can cause life-threatening intestinal obstruction.

In this case, it was difficult to assess whether the gastric or jejunal foreign body was causing the vomiting. Most likely, movement of the foreign

matter within the intestinal tract caused partial obstruction and intermittent signs of vomiting and abdominal pain before complete obstruction occurred.<sup>3-7</sup> The size and color of the gastric foreign body suggested recent ingestion, although lack of passage of barium into the proximal duodenum was consistent with either pyloric obstruction or ileus secondary to the proximal jejunal obstruction.<sup>4</sup> Potential complications associated with gastrointestinal foreign bodies include intestinal devitalization or perforation with peritonitis, aspiration pneumonia, reflux esophagitis, and obstruction of the pancreatic duct causing pancreatitis or ascending cholangitis. Other more serious complications include bacterial translocation, bacteremia and sepsis, hypovolemic and/or septic shock, and disseminated intravascular coagulation. Diagnosis and management, which may include surgical intervention, should be done promptly before additional complications occur.<sup>3-7</sup> ■

See Aids & Resources, back page, for references, contacts, and appendices.