

# ▶▶ BAY LEAF PHYTOBEZOAR: A NOT SO UNCOMMON CAUSE OF GASTROINTESTINAL OBSTRUCTION

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## ▶▶ INTRODUCTION

Phytobezoar is an uncommon cause of bowel obstruction for people eating western diet. The differential diagnosis for bowel obstruction generally includes adhesions, a myriad of hernias, and masses, with bezoars of any type being much lower on the differential diagnosis list. We describe two cases of bay leaf ingestion in which patients experienced classical symptoms of bowel obstruction, requiring several diagnostic as well as therapeutic procedures.

## ▶▶ CASE REPORT

### Case #1

Patient 1 was one year status post Roux-en-Y gastric bypass for morbid obesity. The patient presented to emergency after having a choking episode the prior evening while eating vegetable soup at a restaurant. The Heimlich maneuver was performed on her by a restaurant patron. The patient stated that although she felt better subsequent to the Heimlich, she felt that whatever had lodged "moved down further and got stuck". The patient subsequently was unable to take any thing other than clear liquids in small amounts, causing her to seek treatment. The patient was evaluated for possible obstruction secondary to foreign body ingestion.

Following IV conscious sedation, endoscopy was performed. The gastroscope was inserted through the mouth and advanced through the esophagus and into the gastric pouch. Upon entering the gastric pouch, a large leaf with stem was found to be impacted in the gastrojejunal anastomotic site. The leaf was grasped using a grasper through the endoscope and removed. The gastrojejunal anastomosis was widely patent and without stricture. The pouch had mild diffuse gastritis with no ulcerations or bleeding. Jejunum distal to the anastomosis was mildly irritated, but without ulcers or lacerations. As the endoscope was withdrawn, the distal esophagus showed signs of mild to moderate esophagitis and linear ulcerations, reported among other similar cases. The patient was placed on bariatric clear liquid diet for 24 hours and advanced to bariatric soft diet which was well tolerated without subsequent complaint.

### Case #2

Patient 2 was an 86-year-old male with a history of colon cancer and left hemi-colectomy and end colostomy who presented to the emergency room with abdominal pain, cramps, nausea, and constipation which had waxed and waned for 5 weeks. At presentation he complained of constipation and right lower quadrant abdominal pain and emesis. The patient stated that during the past 5 weeks, bowel habits had been irregular with periods of obstipation, and at its worse, periods of not being able to eat due to nausea and vomiting. The patient stated that when he did have bowel movements they were normal.

The patient's physical exam revealed a slightly distended abdomen. Bowel sounds were hypoactive. The abdomen was soft and diffusely tender without guarding or rebound tenderness. Colostomy bag was empty at the time of examination. Abdominal series showed multiple loops of dilated small bowel throughout the abdomen, as well as air fluid levels that were consistent with SBO. (Figures 4 & 5) The patient was admitted to the general floor and kept NPO. NG tube was placed for suction and IV hydration with crystalloids was started. Subsequent to admission the patient followed an undulating course, with periods of apparent bowel obstruction, followed by periods of returned normalcy.

On hospital day 2, the patient had no new complaints. The abdomen was flatter than on admission, but still tympanic. No pain was elicited on palpation. CT of abdomen and pelvis with oral and IV contrast (Figure 6) demonstrated contrast within the dilated proximal small bowel. Multiple air-fluid levels were again identified; there was no evidence of free air in the abdomen and no contrast was noted in the colon.

The radiographic impression of the abdomen was of distal small bowel obstruction, with the transition point noted within the last few centimeters of the distal ileum. The most distal 10 cm of the terminal ileum was normal caliber; the cecum was unremarkable. Suspected etiology of the transition point included adhesions from prior surgeries. The patient complained of upset stomach secondary to contrast intake with no other complaints.

By hospital day 3 of admission, the patient was feeling well and denied nausea and vomiting. Further CT scan evaluation by the radiologist revealed large amounts of stool filling the right ascending colon. At this time, it was believed that the patient's obstruction was functional secondary to inspissated stool. A gastrografin enema was ordered to evaluate the colon and to decompress the small bowel. Gastrografin enema was performed through the colostomy, filling the colon to the cecum without obstruction. A moderate amount of retained stool was noted in

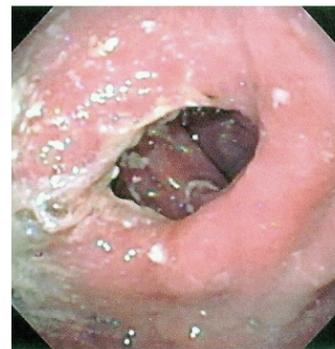


Figure 1: Endoscopic photograph of bay leaf obstructing gastric pouch outlet.

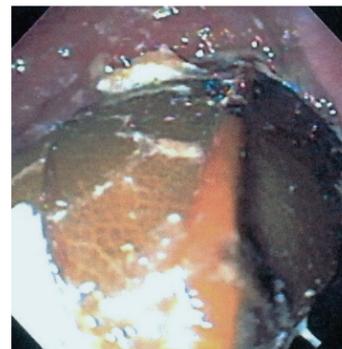


Figure 2: Endoscopic photograph of bay leaf obstructing gastric pouch outlet.



Figure 3: Extracted bay leaf.



Figure 4: Supine Radiograph, notice the valvulae conniventes and distended bowel.



Figure 5: Upright radiograph of abdomen. Note air fluid levels in inverted U pattern.



Figure 6: CT of the abdomen showing transition point.

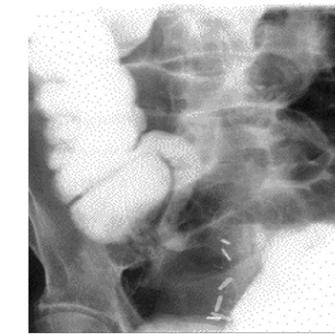


Figure 7: Gastrografin refluxing into the terminal ileum to the previously noted transition point.



Figure 8: Picture of bay leaf taken post operatively.



Figure 9: The Bay Laurel in its native form.

the colon. Contrast was seen refluxing in to the terminal ileum. Post evacuation film demonstrated distention of the small bowel. The patient was in no apparent distress and stool was noted in the colostomy bag.

On hospital day 4, the abdomen was yet again softer and less distended than the previous day. Magnesium citrate and metoclopramide were given for the remaining inspissated stool. (Figure 7)

From day 5 of hospitalization to day 9, the patient demonstrated relative improvement. The abdomen became progressively softer and flatter and elicited no pain on palpation. Vital signs remained stable, and the patient was euthermic. The patient's white blood count (WBC) ranged from 6.0 to 7.1 on those days. NG tube was clamped on day 5 and subsequently removed on hospital day 6. The patient's diet was advanced on hospital day 7. Radiography confirmed clinical observations of SBO resolving. From hospital day 6 to hospital day 9, no stool was noted in the colostomy bag. However, flatus was noted.

On hospital day 10, the patient reported emesis, and complained of abdominal pain and distention. Small bowel follow through (SBFT) was ordered and demonstrated a small amount of contrast in the stomach and proximal small bowel with markedly distended loops of small bowel. The 60 minute film was obtained and only a small amount of diluted Gastrografin was noted in the proximal small bowel. Marked small bowel distention was noted, measuring 7.7 cm. This was in contrast with the film taken on hospital day 9. After noting the results of the most recent exam, the NG was again reinserted and placed to low intermittent suction.

The patient continued to do well with NG tube placement, with no complaints of nausea, vomiting, or abdominal pain. Vital signs were stable, and he was euthermic, with a WBC count of 6.5. Abdominal distention decreased on hospital day 11, compared to day 10. Repeat abdominal series showed marked dilated loops of small bowel with contrast noted in the colon. These findings suggested a high-grade partial obstruction, though not complete. Contrast observed in the colon indicated the bowel lumen was partially open.

Because multiple radiographic studies demonstrated a partial obstruction of the small bowel, the patient and surgeon agreed upon exploratory laparotomy. The patient was taken to surgery on day 13. Prior to starting surgery, the patient's abdomen was palpated. No gross distention or signs and symptoms typical for small bowel obstruction was noted. Abdomen was soft and there were no tympany or tinkling of bowel sounds.

A laparotomy was performed. Once the peritoneum was entered, the small bowel was run from the ilea-cecal junction to the Ligament of Trietz. At the terminal ileum a dense loop of bowel was noticed to be adherent to the pelvis. Once the small bowel was released from the lower right pelvis the small bowel was mobilized and examined. There was no transition point, and proximally dilated bowel was found decompressed. There was, however, an area of stricture approximately 6 cm from the ileo-cecal junction.

The small bowel was entered at this point and a Bay Leaf (*Laurus nobilis*) was noted to be sitting transversely in the small bowel at the site of the stricture. The affected area and a small portion of the cecum were resected. The patient tolerated the procedure well, and was transported to the PACU in good condition. This patient had an eventful postoperative course secondary to preexisting medical problems and expired on hospital day 22 of cerebral vascular accident.

## ▶▶ DISCUSSION

Mechanical small-bowel obstruction (SBO) can be classified by cause into 3 main groups: (1) intraluminal (e.g. foreign bodies, bezoars, and food bolus), (2) obstruction resulting from lesions in the bowel wall (e.g., tumors and Crohn's disease), and (3) extrinsic (e.g., adhesions, hernias, and volvulus). There are many causes of bowel obstruction within these categories. Surgeons are intimately acquainted with most etiologies.

Surgeons should be vigilant for less common causes of SBO, such as phytobezoar. Foreign body causing bowel obstruction is uncommon. We assert that bay leaves should also be considered as a source of bowel obstruction. Greater public awareness regarding bay leaves will prompt gastronomes to remove bay leaves prior to serving cuisine.