Repetitive Small Bowel Obstruction Caused by Chestnut Ingestion without the Formation of Phytobezoars

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Abstract

A small number of cases of small bowel obstruction caused by foods without the formation of phytobezoars have been reported. Repeated small bowel obstruction due to the ingestion of the same food is extremely rare. We present the case of 63-year-old woman who developed small bowel obstruction twice due to the ingestion of chestnuts without the formation of phytobezoars. This is the first reported case of repeated small bowel obstruction caused by chestnut ingestion. Careful interviews are necessary to determine the meal history of elderly patients and psychiatric patients.

Key words: repeated small bowel obstruction, chestnut

(Intern Med 55: 1565-1568, 2016) (DOI: 10.2169/internalmedicine.55.6811)

Introduction

Small bowel obstruction can be caused by the consumption of round food materials such as chestnuts or seeds of fruits. Most cases are caused after the formation of phytobezoars; there are a few reported cases of small bowel obstruction caused by foods without the formation of phytobezoars. Among these cases, only one case was caused by the consumption of chestnuts (1). Furthermore, repeated small bowel obstruction due to the same food is rare (2). We herein present the case of a patient who developed small bowel obstruction due to the consumption of chestnuts without the formation of phytobezoars on two separate occasions.

Case Report

In November 2011, a 63-year-old woman with mental retardation visited our hospital because of frequent vomiting. She had no history of gastrointestinal tract surgery. Abdominal radiography suggested the dilation of the loops of the small intestine (Fig. 1). A computed tomography (CT) scan demonstrated that a rounded structure with high-
Figure 2. Plain (a) and enhanced (b) abdominal CT images at the first visit showed rounded structure with high absorbance and a diameter of approximately 30 mm obstructing the jejunum with proximal luminal dilatation.

Figure 3. Small intestinal endoscopy on the next day of hospitalization revealed that the foreign body was a chestnut and that the intestinal mucosa was edematous with ulceration.

absorbance of approximately 30 mm in diameter, was obstructing the jejunum and proximal luminal dilatation (Fig. 2). She was hospitalized on the same day. On admission, an ileus tube was inserted nasally. On the next day, abdominal radiography showed the improvement of the dilated loops of the small intestine; however, a foreign body was observed to be obstructing the jejunum. Oral small intestinal endoscopy was performed using a single balloon enteroscope (SIF-Q260, Olympus Medical Systems, Tokyo, Japan), and a foreign body was found in the jejunum. The foreign body was found to be a chestnut; the intestinal mucosa was edematous with ulceration (Fig. 3). Although the endoscopic collection of the chestnut was attempted, the surface was too slippery; open surgery was therefore performed on the following day. No intestinal stenosis necessitating the excision of the intestine was found. Approximately 2 cm of the jejunal wall was incised and the chestnut was removed. The chestnut was 30 mm in its longest diameter (Fig. 4a). The postoperative period was uneventful, and the patient fluid and soft food intake were initiated. She was discharged from hospital 8 days after surgery. We warned her family not to allow her to ingest intact chestnuts.

In September 2012, the patient visited our hospital again because of vomiting. She had a fever (38°C) and laboratory tests revealed elevated inflammatory marker levels (WBC, 8,000/μL, CRP, 11.47 mg/dL) and renal dysfunction (BUN 63.4 mg/dL, Cre 1.36 mg/dL). As in the previous episode, the abdominal radiographic findings were suggestive of the dilatation of the loops of the small intestine. CT revealed a round structure with high absorbance and a diameter of 25 mm in the small intestine and dilation of the proximal small intestine (Fig. 5). Her family reported that she had swallowed an intact chestnut again. She was diagnosed with intestinal obstruction due to a chestnut, and was hospitalized. As the endoscopic removal of the chestnut was difficult during the previous admission, open surgery was subsequently performed on the day of admission. The chestnut was stuck in the jejunum, 17 cm from the incision site of the previous operation. We incised the wall of the intestinal tract and removed the chestnut. The foreign body was a chestnut of 27
The chestnuts were removed by open surgery. The initial chestnut was 30 mm in its longest diameter (a); the second chestnut was 27 mm (b).

A plain abdominal CT image at the second hospitalization identified rounded structure with high absorbance and a diameter of approximately 25 mm, in the small intestine with dilation of the proximal small intestine.

There are no reports of patients who developed small bowel obstruction due to an intact chestnut on two separate occasions.

The sensitivity of plain abdominal radiography in the diagnosis of severe small intestine obstruction is reported to be 86% (5). A small intestine with an intramural width larger than 3 cm is considered abnormal. In this case, at the patient’s first admission, the intramural width of the small intestine was 6 cm; that at the second admission was 4.5 cm. Abdominal CT is useful for diagnosing and identifying the cause of small bowel obstruction in 73-95% of cases (6, 7). It is difficult to preoperatively diagnose small intestine obstruction with food bolus impaction; surgery often reveals how the obstruction developed (4). In the present case, we could confirm that the foreign body was a chestnut and made a preoperative diagnosis using small intestinal endoscopy.

Discussion

The common causes of small bowel obstruction are adhesion, strangulated hernia and malignancy; a smaller number of cases are caused by the ingestion of foreign bodies (2). The known causes of small bowel obstruction due to the ingestion of foreign bodies are previous gastric surgery, incomplete mastication, rapid deglutition, the narrowing of intestinal segments, and the presence of Meckel’s diverticulum (3). Most cases of food bolus impaction are caused by meat or fish bones; a few cases are reported to have occurred due to fruit (4). To date, only one case of intestinal obstruction due to an intact chestnut has been reported (1).

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