Migration of Gastric Bezoars Leading to Secondary Ileus

Hsuan-Wei Chen¹ and Heng-Cheng Chu²

Abstract

Bezoars are concretions of foreign matter in the gastrointestinal tract which may cause nonspecific symptoms, including epigastric discomfort, early satiety, and constipation, and rarely gastrointestinal obstruction. We report a case in which the migration of bezoars led to secondary gastrointestinal obstruction. With endoscopy manipulation and chemical dissolution, such as with Coca-Cola, to disintegrate the gastric bezoars, the possibility that fragmented residuals may coalesce in the small intestine causing ileus should be considered when a patient presents with abdominal obstruction symptoms after these procedures. In this condition, abdominal plain film X-ray and computer tomography play important roles in timely diagnosis.

Key words: gastric bezoar, gastrointestinal obstruction, migration

(DOI: 10.2169/internalmedicine.50.5637)

Introduction

The bezoars grow with the ingestion and accumulation of indigestible materials; the causes of pathogenesis are complicated and include alterations in the production of peptic acid, pepsin, and mucus and also delayed stomach emptying ability (1). The types of bezoars can be classified by their compositions into trichobezoars mostly made of hair, phytobezoars (vegetables, fruits or fibers), lactobezoars (milk curd) or any indigestible material. In the diagnosis of bezoar complicated ileus, in addition to detailed history-taking, abdominal computer tomography (CT) can offer much information due to its characteristic image finding (well-defined mass with mottled gas pattern) (2). There are several methods for treatment of gastric bezoars including chemical dissolution with cellulose, acetylcysteine, papain, or Coca-Cola, endoscopy approach, and surgical intervention when conservative management fails (3). In the present case, the patient suffered from gastrointestinal obstruction due to fragmented bezoars coalescing in the ileum leading to this late complication, with the basic abdominal plain film offering useful clues in the diagnosis.

Case Report

A 49-year-old woman was admitted for progressive abdominal fullness accompanied by anorexia, vomiting, epigastric pain, and easy satiety lasting for three weeks. Seven years prior to presentation, she underwent Roux-en-Y gastric bypass surgery due to morbid obesity. Since that operative procedure, the woman has changed her diet to become a vegetarian; she eats only vegetables, cereals and fruits eaten. Physical examinations disclosed a distended abdomen without palpable masses and abdominal incision wound. Laboratory data revealed anemia (hemoglobin: 8.3 g/dL). Abdominal radiography showed a hyperdense mass in the left upper quadrant (Fig. 1A, arrow) with residual barium due to a previous examination at another hospital. An endoscopy examination showed one green-to-brown bezoar (8-10 cm in size) impacted at the residual antrum site of stomach (Fig. 1B), which was successfully disintegrated by snare & forceps following Coca-Cola injection (Fig. 1C: no residual bezoars in the residual stomach on the following day; endoscopically collected fragmented bezoars). The abdominal symptoms subsided and oral feeding was then initiated.

However, abdominal pain resumed five days later. The subsequent radiography showed luminal obstruction caused by a calcified lesion (Fig. 1D, arrow) at distal jejunum with

¹Department of Internal Medicine, Tri-Service General Hospital, National Defense Medical Center, Taiwan and ²Division of Gastroenterology & Hepatology, Department of Internal Medicine, Tri-Service General Hospital, National Defense Medical Center, Taiwan

Received for publication April 11, 2011; Accepted for publication May 24, 2011

Correspondence to Dr. Heng-Cheng Chu, chu5583@ms55.hinet.net
Figure 1. Panel A: Abdominal radiography shows a hyperdense mass in the left upper quadrant (Panel A, arrow). Panel B: An endoscopy examination showed a gastric bezoar (Panel B). Panel C: No residual bezoars on the next day; one piece of fragmented bezoar has been picked up. Panel D: The followed radiography showed luminal obstruction by a calcified lesion (Panel D, arrow) with distended intestinal loops (Panel D, arrowheads). Panel E: Abdominal CT documents a well-defined lesion (4.6×3 cm) with mottled gas pattern impacted at the distal jejunum (Panel E: arrow).

distended intestinal loops (Fig. 1D, arrowheads). Scheduled abdominal CT scan documented a well-defined lesion (4.6×3 cm) impacted at the distal jejunum (Fig. 1E: arrow). After failed medical treatment with nasogastric tube drainage and intravenous fluid supplementation, the patient finally underwent a laparotomy with enterolithotomy. During the operation, one bezoar (5×4 cm in size) was found impacted at the ileum region, 150 cm from the Treitz ligament, with a minimal surrounding adhesion band. This patient then had un-
eventful recovery.

Discussion

The major risk factors for bezoar formation are altered stomach anatomy, poor gastric emptying function, and the ingestion of indigestible material. In a patient with three such risk factors, a huge gastric stone has been reported (4). The present patient has two elements of the major risk fac-
tors (altered gastric anatomy and the ingestion of poorly digestible material) and she presented with gastric bezoar-related abdominal symptoms. Common complications resulting from gastric bezoars include abdominal pain, nausea, vomiting, early satiety, and anorexia (5). Gastric bezoar-related intestinal obstruction is usually due to bezoar migration or associated underlying diseases such as diverticulum or tumor.

The migration of bezoars causing ileus has been reported in patients in whom bezoars were treated by chemical dissolution with Coca-Cola (6, 7). The disrupted fragments of bezoars are retained in the small intestine, accumulate and grow in size, resulting in intestinal obstruction which is later followed by surgical intervention for removal. In the present case, we initially failed to endoscopically remove the huge bezoar due to its giant size. Following Coca-Cola injection and dissolution, the bezoar was sequentially disintegrated by snare and forceps and patient initially improved after these manipulations. However, intestinal obstruction ensued due to the migration and coalescence of the previously disintegrated bezoars, necessitating surgical intervention. Therefore, when physicians treat patients with gastric bezoars by disrupting and breaking them into fragments rather than endoscopic removal, the possibility of migrated bezoars leading to secondary ileus should be considered.

The characteristic “well-defined mass with a mottled gas pattern” is the typical CT image finding of bezoars (2, 8, 9). In the diagnosis of bezoar-related ileus, the CT plays an important role; however, in fragmented bezoar coalescence-related intestinal obstruction, a series of abdominal plain X-ray films also offer much useful information (6). In the present case, when she complained of abdominal pain after endoscopic manipulation, the subsequent plain X-ray films implied the possibility of bezoar migration ileus. This means that a series of abdominal plain X-ray films can be a useful primary screening tool for the detection of bezoar migration coalescence-related intestinal obstruction following a disintegration procedure.

## Conclusion

With the increased incidence of obesity and bypass surgery, the frequency of gastric bezoar will increase. Following the endoscopic manipulation of these gastric bezoars, the physicians should carefully follow-up these patients and keep in mind the possibility of secondary complication due to bezoar migration and the importance of abdominal plain X-ray films in the primary screening.

The authors state that they have no Conflict of Interest (COI).

## References