

Retained Surgical Sponge Presenting as a Gastric Outlet Obstruction and Duodeno-ileo-colic Fistula: Report of a Case

SRINIVAS RAO MANIKYAM, VIKAS GUPTA, RAJESH GUPTA, and NARENDAR MOHAN GUPTA

Department of Surgery, Postgraduate Institute of Medical Education and Research, Chandigarh 160012, India

Abstract

An unusual case of a retained surgical sponge migrating to the duodenum causing gastric outlet obstruction and duodeno-ileo-colic fistula is reported.

Key words Retained sponge · Gastric outlet obstruction · Duodeno-ileo-colic fistula

Introduction

Surgical sponges retained in the abdominal cavity is an under-reported condition because of the medicolegal ramifications. Although it is not uncommon, the migration of a retained sponge into the bowel lumen is rare.^{1–3} A retained surgical sponge leading to gastric outlet obstruction and multiple internal fistulization has not been previously reported (according to a MEDLINE search). One such case encountered by the authors has prompted us to publish our findings.

Case Report

A 44-year-old housewife presented with pain in the upper abdomen of 2 years' duration, an awareness of a lump in the upper abdomen, and retention vomiting of 2 months' duration. In the past, she had undergone an open cholecystectomy through a right subcostal incision for cholelithiasis 2 years previously at a local hospital. On examination she was malnourished. An abdominal examination revealed a well-healed right subcostal scar of previous surgery, a nontender lump in the right hypochondrium and lumbar region, and a dilated stomach. Investigations revealed a normal hemo-

gram. However, she was hypoproteinemic with serum albumin of 2.4 gm/dl. A plain X-ray of the abdomen was not contributory. An ultrasound (US) scan of the abdomen revealed a mass in relation to proximal small bowel. A barium meal examination showed a large intraluminal filling defect in the duodenum with duodenocolic fistula (Fig. 1). A diagnosis of bezoar was suggested. Upper gastrointestinal endoscopy revealed a yellowish-white bezoar in the second part of duodenum. The patient underwent surgery and the right colon, duodenum, and terminal ileum were found to adhere to each other while forming a mass. On separating the adhesions, a laparotomy sponge was found eroding into the second part of the duodenum, hepatic flexure, and terminal ileum (duodeno-ileo-colic fistula) (Fig. 2). After removing the sponge, the opening in the duodenum was closed and a right hemicolectomy was performed while incorporating the terminal segment of ileum containing the fistula. The bowel continuity was restored by end-to-end ileo-transverse colon anastomosis. The postoperative period was uneventful. The patient is presently doing well 6 months postoperatively.

Discussion

The retained sponge and the surrounding foreign body reaction has been variably termed as “textilomas,” “gossipiboma,” or “cottonoid.”² The sponge may remain asymptomatic for years or may present as an intra-abdominal abscess, intestinal obstruction, perforation, hemorrhage, granulomatous peritonitis, etc.^{3,4} The presentation can vary between 2 days and 28 years following surgery.¹

The most interesting aspect of a retained surgical sponge is its intraluminal migration leading to obstruction as occurred in our patient. The proposed mechanism of migration into the bowel is that the retained sponge evokes an inflammatory reaction, and is sur-



Fig. 1. Barium meal showing the duodeno-colic fistula

rounded by the omentum and neighboring viscera which attempt to encapsulate it. This leads to pressure necrosis of the surrounding viscera and consequently fistulization.⁵ In most patients with an intraluminal migration of a retained sponge who have been reported in the literature, the ileum was the most common site. The migration of a surgical sponge into the duodenum causing obstruction and duodeno-ileo-colic fistula has not yet been previously reported (based on a MEDLINE search), although erosion of the duodenum has been described.⁶ To our knowledge, ours is the first case report where a retained sponge entered into the duodenum thus resulting in a gastric outlet obstruction.

The diagnosis of a retained sponge continues to be a problem. Plain abdominal radiography may show a radio-opaque marker if sponges with markers are used. A whirl-like appearance due to internal gas formation may be seen on plain radiography.⁷ A barium study may show distorted or adherent loops and in the presence of an intraluminal sponge, like ours, a filling defect with a retention of contrast material is seen in the delayed films.^{3,8,9} US, computed tomography (CT), and magnetic resonance imaging are usually helpful. Sonography shows a mass with an echogenic center and hypoechoic rim. A retained foreign body produces an intense and sharply delineated acoustic shadow. CT demonstrates a soft tissue mass with air bubbles and a whirl pattern.^{8,10} The folded fabric inner structure visualized on T₂-weighted images can be a most important clue in making a correct diagnosis of this iatrogenic mass.⁷

Once diagnosed, surgical removal is mandatory, and such surgery may involve a bowel resection. The results are best with early surgery and mortality may be as high as 18% if it is delayed.^{4,11}

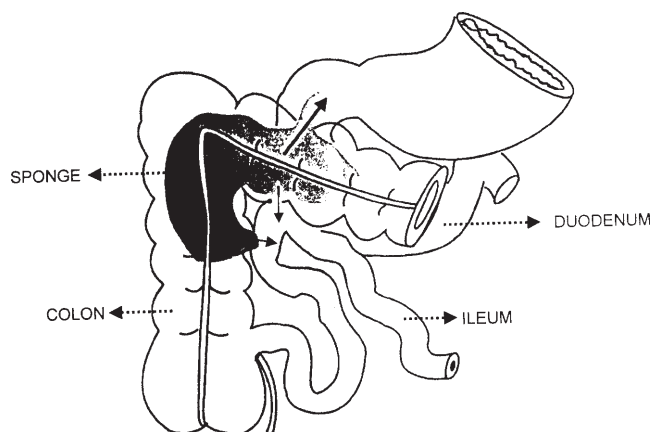
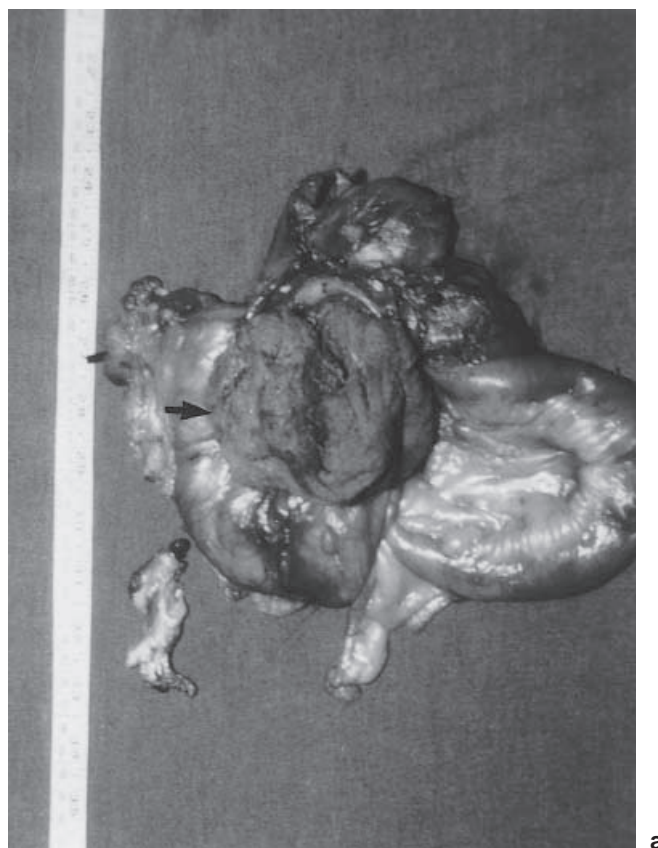


Fig. 2. **a** A resected right hemicolectomy specimen with a sponge (marked by an *arrow*) in situ. **b** Line diagram showing the site of the duodeno-ileo-colic fistula and the position of the sponge. The *large arrow* shows the duodeno-colic fistula while the *small arrows* show the ileo-colic fistulae

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