Surg Today (2001) 31:355–357

SURGERY TODAY

Antegrade Jejunojejunal Intussusception After Roux-en-Y Esophagojejunostomy as an Unusual Cause of Postoperative Intestinal Obstruction: Report of a Case

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Abstract Postoperative intestinal obstruction in adults is rarely caused by intussusception. A case of antegrade jejunojejunal intussusception that occurred after Roux-en-Y esophagojejunostomy is described, followed by a discussion of the literature on this unusual entity.

Key words Intussusception · Postoperative · Intestinal obstruction · Roux-en-Y esophagojejunostomy

Introduction

Intussusception is a rare cause of postoperative intestinal obstruction in adults. We present herein the case of a patient in whom antegrade jejunojejunal intussusception developed after Roux-en-Y esophagojejunostomy without the classical symptoms of intussusception.

Case Report

A 50-year-old woman with a corpus-located gastric cancer was operated on in June 1999, in the Department of General Surgery at Hacettepe University School of Medicine. The patient had no history of abdominal surgery. She had been commenced on antiarrhythmic medication for supraventricular tachycardia preoperatively. A total gastrectomy and Roux-en-Y esophagojejunostomy were performed. Esophagojejunostomy was constructed using a circular stapler (CEEA 25). The duodenal stump and blind end of the Roux limb were closed by TA-55 staplers. A stapled end-to-side jejunojejunal anastomosis was also subsequently performed using a circular stapler (CEEA 28). A nasojejunal tube was inserted into the afferent jejunal loop and an 8-F feeding tube was introduced into the distal jejunum. There was no other gross intra-abdominal pathology and no complications developed in the early postoperative period, apart from some intermittent supraventricular tachycardia attacks that responded to verapamil infusion. On the second postoperative day, the bowel sounds became audible, and 10 ml/h of enteral solution was commenced through the feeding tube and increased gradually. The parenteral hyperalimentation was stopped on the third postoperative day.

On the sixth postoperative day, after a period of normal bowel function, the patient started to experience cramping abdominal pain and vomiting. Physical examination revealed a distended abdomen with minimal but diffuse tenderness on palpation. Normal bowel sounds were noted initially. A plain upright X-ray of the abdomen did not show any dilated loop of small bowel with an air-fluid level. No gas passage was observed distally on the films.

An emergency upper gastrointestinal (GI) series with water-soluble contrast was performed to rule out the possibility of an anastomotic breakdown, but no leak was seen. Nasoenteral feeding was stopped and parenteral alimentation was recommenced. Despite the normal upper GI series, on account of a fever exceeding 38°C, increased tenderness, unresolved distension, and leucocytosis, an intravenous and oral contrast-enhanced computed tomography (CT) scan was carried out. This confirmed that there was no leak; however, a short, dilated proximal segment of upper jejunum was noticed.

An exploratory laparotomy was performed on the fourth day of conservative treatment. An antegrade jejunojejunal intussusception located just distal to the end-to-side jejunojejunal anastomosis was found on

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Received: January 7, 2000 / Accepted: September 26, 2000

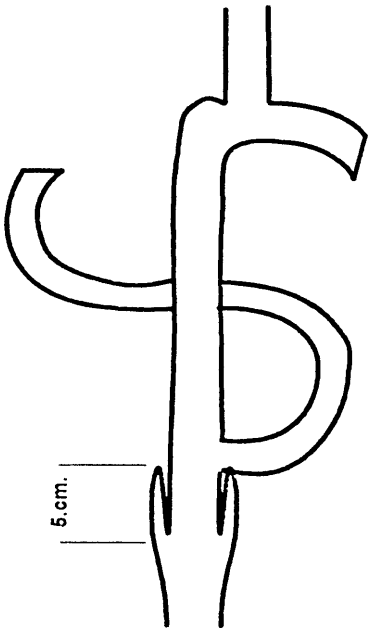

Fig. 1. Schematic diagram of the intussusception, located distal to the end-to-side jejunojejunostomy

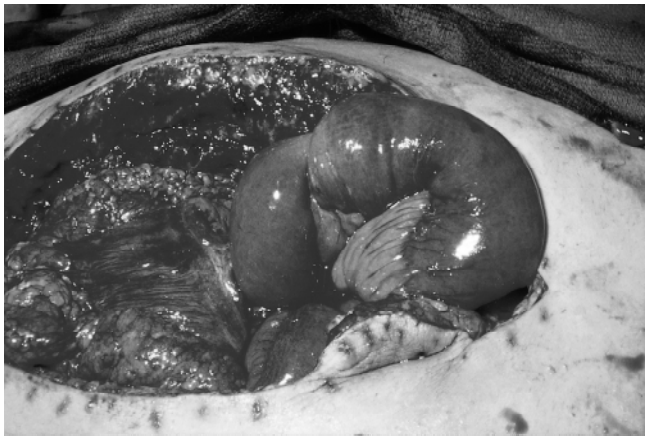

Fig. 2. Photograph of the antegrade intussusception

exploration (Figs. 1 and 2). A 5-cm segment of jejunum had invaginated into the following segment. No adhesion associated with the intussusception or any other intra-abdominal pathology was observed. Manual reduction of the intussusception was subsequently performed. The invaginated segment was judged to be viable and no further surgery was considered necessary.

During her postoperative course, the patient suffered several supraventricular tachycardia attacks, but after her symptoms had resolved, she was discharged on the tenth day following the second operation.

Discussion

Postoperative intussusception leading to bowel obstruction is an unusual entity in adults and is rarely encountered as a complication following gastric surgery. The most commonly seen type of intussusception after gastric resection is retrograde jejunogastric intussususception,[1,2] and we were only able to find three cases of jejunojejunal intussusception after Roux-en-Y gastrojejunostomy reported in the English literature.[3–5]

The symptoms of mechanical obstruction can be delayed in adults with postoperative intussusception for up to 2 weeks,[6,7] or even as long as 20 years in one case,[8] and it may present as an acute surgical emergency or as chronic postprandial pain. The common triad of symptoms of intussusception, namely, pain, a palpable mass, and rectal bleeding, is rarely seen.[3,7] The usual symptoms are easily confused with those caused by postoperative ileus or adhesions.[7,9] A preoperative diagnosis can be made radiologically by an upper gastrointestinal series, ultrasonography, and CT, or endoscopically if a high index of suspicion exists, but it is usually only confirmed by laparotomy, often after a period of conservative treatment.[4,9–13] There was no target-like concentric circle noted on the CT scan of our patient, which would have strongly suggested an intussusception. The radiological demonstration of a dilated proximal segment of jejunum in a postgastrectomy patient with prolonged ileus, as in our patient, should lead the surgeon to consider the possibility of postoperative intussusception.

It is common that no definite cause or leading point for postoperative intussusception is found. Intestinal tubes, suture or stapler lines, and electrolyte imbalance can be accused of being etiological factors, as can bowel edema due to extensive handling during laparotomy.[14] Excessive jejunal motility and anastomotic mouth dimensions resulting in antiperistaltic jejunal motor activity have also been suggested as other predisposing factors[15,16] of jejunogastric intussusception. We were unable to determine the etiology of this entity in our patient. The stapler line of the end-to-side jejunojejunal anastomosis, which might be considered the most possible leading point, was totally out of the intussuscepted segment and the dimensions of the anastomosis were normal. While the tip of the feeding tube could be considered as another possible leading point, it was palpated 30 cm distal to the intussuscepted segment in the normal position.

Nonoperative, endoscopic management of jejunogastric intussusception has been suggested; however, this is associated with a significant risk of recurrence[15] and surgery is the most common form of treatment. The operation should be conservative, provided that the bowel is viable and strangulation has not occurred.

Reduction of the intussuscepted segment is the only effective treatment.

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