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Antegrade jejunogastric intussusception and common bile duct stones at 14 months after gastrectomy and cholecystectomy: A case report

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ABSTRACT

INTRODUCTION: Intussusception after gastrectomy is a minor complication after gastrectomy, while common bile duct stone (CBD) is also a rare complication post cholecystectomy. We report a case that simultaneously caused both intussusception and CBD stone following gastrectomy with prophylactic cholecystectomy.

CASE PRESENTATION: A 74-year-old woman underwent distal gastrectomy with Roux-en-Y reconstruction and prophylactic cholecystectomy for gastric cancer. After 14 months, the patient reported nausea and vomiting. Abdominal computed tomography scanning showed antegrade intussusception of the Roux limb of the gastrojejunostomy and calculi in the common bile duct, with a diagnosis of jejunogastric intussusception and common bile duct stones. The patient was hospitalized and endoscopic examination was performed on day 3. Endoscopic treatment did not resolve the intussusception, which also obstructed the bile duct stones. Elective surgery was performed on day 10, in which the invaginated Roux limb of the gastrojejunostomy was resected after manual reinstatement to its original position. This was followed by open exploration of the common bile duct and T-tube drainage. The patient was discharged 25 days post- surgery.

DISCUSSION: Jejunogastric intussusception and CBD stone may require operative management, although the operation could be elective after sufficient examination and preparation.

CONCLUSION: Jejunogastric intussusception and bile duct stones are rare after distal gastrectomy, physicians should be alerted to the possibility of these complications.

1. Introduction

Intussusception is a rare cause of postoperative small bowel obstruction in adults [1], with estimates suggesting that it occurs after gastrectomy with a frequency between 0.07% and 2.1% [2]. Common bile duct (CBD) stones are a minor postoperative complication that have been reported to occur in 10.4% of patients after cholecystectomy [3].

This report describes a patient who underwent distal gastrectomy and cholecystectomy, with late postoperative complications of antegrade gastrojejunal intussusception and CBD stones. The work has been reported in line with the SCARE criteria [4].

2. Case report

A 74-year-old woman visited Iwate Prefectural Iwai Hospital for periodic examination after distal gastrectomy and prophylactic cholecystectomy, followed by adjuvant chemotherapy, for gastric cancer. In the Roux-en-Y gastrojejunostomy, the jejunum was resected at 20 cm below the Treitz ligament using a PROXIMATE Linear Cutter (TCR10; Ethicon, Cincinnati, OH, USA) and the distal part of the resected jejunum was pulled up through the transverse mesocolon. The gastrojejunostomy was constructed by an end-to-side, hand-sewn anastomosis, and the Roux limb was fixed to remnant stomach tissue. The jejunojejunostomy was formed by an end-to-side, hand- sewn anastomosis located 40 cm below the gastrojejunostomy site. Cholecystectomy

was prophylactically performed to prevent postoperative cholecystitis. Adjuvant chemotherapy with S-1 was administrated orally from 1 month after surgery for 12 months, and was completed as planned without complications.

Abbreviations: CBD, common bile duct; ERCP, endoscopic retrograde cholangiopancreatography.

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Fig. 1. Abdominal computed tomography findings of antegrade gastrojejunal intussusception and choledocholithiasis.
A: A non-homogeneous mass (arrow) in the left-upper quadrant is shown. The staple line of the Roux limb stump was recognizable as a high-intensity line in the center of the mass; B: Calculi in the common bile duct are shown (arrow).

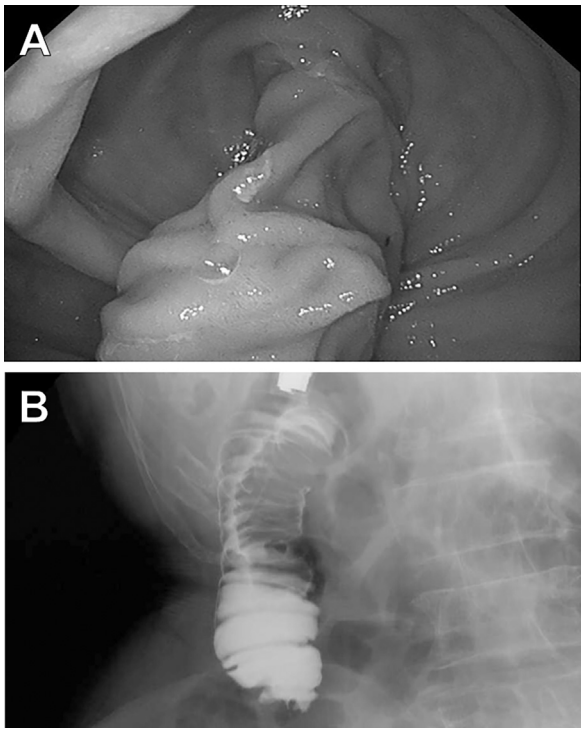

Fig. 2. Endoscopic and contrast radiographic findings of jejunogastric intussusception.
A: Direct view of gastrofibroscopic examination demonstrating an invaginated bowel; B: Contrast radiograph shows a Roux limb invaginated in the direction of the Roux-en-Y anastomosis.

During the follow-up examination at 14 months after surgery, the patient reported slight nausea and vomiting, and was hospitalized. Abdominal computed tomography scanning revealed an invaginated Roux limb of the gastrojejunostomy and calculi in the CBD, which prompted a diagnosis of antegrade jejunogastric intussusception and CBD stones (Fig. 1). Endoscopic examination and contrast radiography were performed for verification of the diagnosis and treatment. The invaginated Roux limb of the gastrojejunostomy constricted the jejunum lumen, confirming the diagnosis of intussusception (Fig. 2). However, the intussusception could not be resolved, and the CBD stones could not be treated because the invaginated jejunum obstructed the endoscopic approach via the jejunojejunostomy (Fig. 3). Elective surgery was performed on day 10 after hospitalization. In the preoperative examination, the patient's general condition was stable with no signs of inflammation or jaundice. There was only a slight elevation in transaminase levels, despite the underlying condition of intussusception and CBD stones.

During open laparotomy, antegrade jejunogastric intussusception was found at the Roux limb of the gastrojejunostomy. The intussusception was approximately 5 cm in length, extending from the limb, and was manually reverted (Fig. 4). Reduction of the jejunal end of the gastrojejunostomy was achieved with a PROXIMATE Linear Cutter (TCR55; Ethicon, Cincinnati, OH, USA), and the proximal limb of the jejunum was firmly fixed to the residual stomach tissue and transverse mesocolon to prevent recurrence of intussusception. Subsequently, open exploration of the CBD was performed, in which eight stones (each 5 mm in diameter) were resected using a cholangioscope. This was followed by insertion of a T-tube to the CBD for drainage. At 16 days after surgery, contrast radiography showed no leakage from the T-tube, and it was removed on day 24. The patient was discharged with no complications on day 25 after surgery.

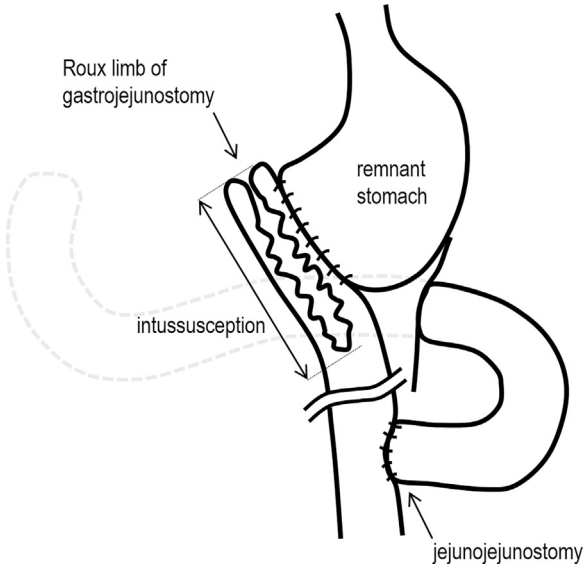

Fig. 3. Schematic diagram of the intussusception.
The efferent limb of the gastrojejunostomy had an invagination toward the jejunojejunostomy.

3. Discussion

As a complication of abdominal surgery, the majority of intussusceptions occur after gastrectomy [5]. These can occur at any postoperative stage from 6 days to 18 years, and the most common type of intussusception is associated with jejunogastric anastomosis [6,7]. In the present case, intussusception was associated with the efferent limb of a jejunogastric anastomosis, which is implicated in approximately 80% of cases of jejunogastric intus-