

# Intussusception After Pancreaticoduodenectomy

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## ABSTRACT

Intussusception after pancreaticoduodenectomy (Whipple procedure) is exceedingly rare. We present a case of retrograde jejunal intussusception into the gastric lumen in a patient who previously underwent Whipple procedure. Diagnostic endoscopy may serve to confirm intussusception, identify a potential lead point, and, in some cases, endoscopically reduce the intussusception. Ultimately, however, surgical management is recommended due to a high rate of recurrence along with the potential to detect a lead point and associated malignancy.

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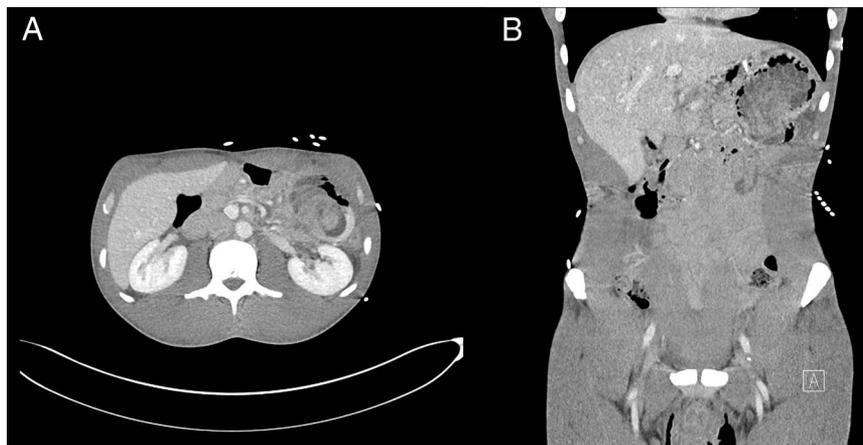
## INTRODUCTION

Intussusception in adults is uncommon, accounting for 1%–5% of all intussusception cases. Among these, a lead point is identified in up to 80% of occurrences. We present an exceedingly rare case of retrograde jejunal intussusception into the gastric lumen without an identified lead point in a patient who previously underwent pancreaticoduodenectomy (Whipple procedure). To our knowledge, there are only 2 other reported cases of intussusception after Whipple procedure, one antegrade and one retrograde; both of these, similar to the present case, required surgical management. Thus, despite intussusception being a rare etiology of abdominal pain in adults, it is an important consideration in the differential diagnoses of abdominal pain unexplained by more common pathology.

## CASE REPORT

A 37-year-old man presented to the emergency department with 4 days of epigastric abdominal pain and an isolated episode of large-volume hematemesis. At presentation, he was hemodynamically stable, with physical examination revealing exquisite diffuse abdominal tenderness without rebound tenderness or distension. Laboratory values were notable for a white blood cell count of 10.4 K/ $\mu$ L and hemoglobin of 13.9 gm/dL. Notably, 9 months before, he underwent Whipple procedure for treatment of a localized neuroendocrine tumor.

Abdominal/pelvic computed tomography with oral and intravenous contrast demonstrated a long segment of enteroenteric intussusception in the left abdomen, with the intussuscepted small bowel extending through the enterogastric anastomosis site into the residual stomach (Figure 1). Imaging did not reveal a definite lead point. Esophagogastroduodenoscopy was performed for further evaluation and to attempt endoscopic reduction. This revealed afferent jejunal loop intussusception of a large segment of the bowel that appeared dusky and erythematous with contact bleeding concerning for ischemia (Figure 2). The lumen was not found endoscopically, and the long intussuscepted loop was not amenable to endoscopic reduction. The patient ultimately underwent an exploratory laparotomy with resection of the gastrojejunostomy and conversion to Roux-en-Y gastrojejunostomy. He recovered without complication, and magnetic resonance imaging of the abdomen/pelvis performed 2 weeks later showed postsurgical changes without evidence of malignancy.



**Figure 1.** (A) Transverse and (B) coronal abdominal computed tomography, showing the intussuscepted small bowel extending through the enterogastric anastomosis site into the residual stomach.

## DISCUSSION

Although rare in adults, cases of intussusception in adults occur commonly because of a lead point, frequently malignancy or adhesions from previous surgery. Retrograde intussusception, distinguished by telescoping of the intestine inside of itself to a more proximal portion, in adults is rare. It is most often seen after Roux-en-Y gastric bypass, Roux-en-Y choledochojejunostomy, or gastrectomy. Diagnosis of intussusception in adults, regardless of previous surgeries, is primarily through imaging because presenting symptoms are often vague and nonspecific.

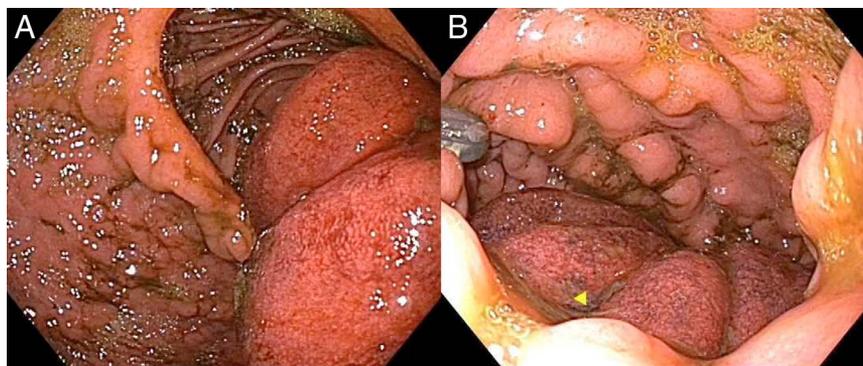
We report an exceedingly rare case of retrograde jejunal intussusception after pancreaticoduodenectomy (Whipple procedure). Previous literature demonstrates a case of a patient with a previously revised Roux-en-Y bypass of the pancreas, where retrograde intussusception of the efferent limb occurred into the anastomosis.<sup>1</sup> Unlike our case, the efferent limb of this patient intussuscepted into the stomach. Additionally, the patient did not receive esophagogastroduodenoscopy before the surgery. The second case occurred in a patient with a history of Puestow procedure, followed by Whipple procedure. Unlike our case, however, this intussusception was antegrade. Intussusception of both Roux-en-Y limbs in this patient was treated with bowel

resection and side-to-side anastomosis.<sup>2</sup> Similar to our case, both these cases did not identify a lead point as a potential cause for the intussusception. Both cases required surgical decompression.

Unlike children, in whom intussusception is much more common, complex anatomy from previous surgery may prevent successful endoscopic or surgical decompression. Management of intussusception then requires surgical formal resection of the affected bowel. Although a diagnostic endoscopy may serve to confirm intussusception, identify a potential lead point, and, in some cases, endoscopically reduce the intussusception, surgical management is recommended due to a high rate of recurrence and associated malignancy. Prompt management is required due to the risk of hemorrhage or intestinal necrosis, as demonstrated in our patient. Because of its rare and grave nature, intussusception as a cause for abdominal pain in a patient who previously underwent Whipple procedure should be considered.

## DISCLOSURES

Author contributions: K. Patel wrote and edited the manuscript. A. Luthra, F. Aberra, and LF Lara edited the manuscript. D. Gray edited the manuscript and is the article guarantor.



**Figure 2.** Esophagogastroduodenoscopy revealed (A) afferent jejunal loop intussusception extending into the residual stomach and (B) a dusky and erythematous bowel from the jejunal loop intussusception (arrow).

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Informed consent was obtained for this case report.

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