Retrograde Jejunogastric Intussusception and Novel Reduction

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CASE SUMMARY

A middle-aged adult presented to the emergency department with acute onset of colicky epigastric pain, nausea and vomiting. The symptoms had started shortly after eating lunch. The patient had undergone a Whipple procedure three years earlier for resection of a pancreatic neuroendocrine tumor. Physical examination revealed a palpable, tender fullness in the left upper abdomen.

IMAGING FINDINGS

A supine radiograph of the abdomen showed pneumobilia and surgical staples related to the prior surgery. A contrast-enhanced CT of the abdomen demonstrated an 8 x 10 cm lobulated, soft-tissue mass within the stomach (Figure).

The appearance of the mass and superior mesenteric vessel blood supply indicated that a loop of proximal jejunum had protruded through the wide gastrojejunal anastomosis and become entrapped inside the gastric pouch.

Based on the well-established success of air enema to reduce colonic intussusception, the patient was asked to ingest 12 ounces of an effervescent soft drink to produce gas and elevate the stomach's intraluminal pressure.

Within 10 minutes the patient experienced a sudden gastric cramp followed by complete symptom relief. Subsequent endoscopy showed a widely patent gastrojejunostomy and slightly hyperemic mucosa of the efferent loop.

DIAGNOSIS

Retrograde jejunogastric intussusception

DISCUSSION

Jejunal intussusception is an uncommon but well-documented complication of gastrojejunostomy performed during Billroth II operation or Roux-en-Y gastric bypass for morbid obesity.[1-3] It occurs as jejunojejunal intussusception in the majority of cases.[4]

Simper, et al, reviewed their experience with over 15,000 patients who had undergone Roux-en-Y gastric bypass surgery.[2] They found that 22 had developed jejunojejunal intussusception, but only one had retrograde jejunogastric intussusception. However, other authors have mentioned that almost 200 examples of retrograde jejunogastric intussusception are recorded in the medical literature, either as isolated cases or as small series.[3-6] The latter complication appears to be very rare after a Whipple procedure, although one such case has been reported recently.[7]

Postsurgical retrograde jejunogastric intussusceptions may involve the afferent loop (Type I), efferent loop (Type II), or a combination of both (Type III).[1,8] Type II accounts for 80% of cases, as in our case, whereas the other types account for 10% each. It has been postulated that reversed antiperistaltic contractions of the anastomosed jejunal segment caused by vomiting, or some other mechanical factors such as adhesions and surgical sutures or staples, may induce retrograde intussusception into the gastric pouch.[1,3,8]

Acute jejunogastric intussusception can develop within a few weeks after surgery or several years later as in this case.[1,5] There is also a chronic recurrent type that tends to resolve spontaneously. It should also be noted that the abdominal symptoms caused by such intussusceptions are

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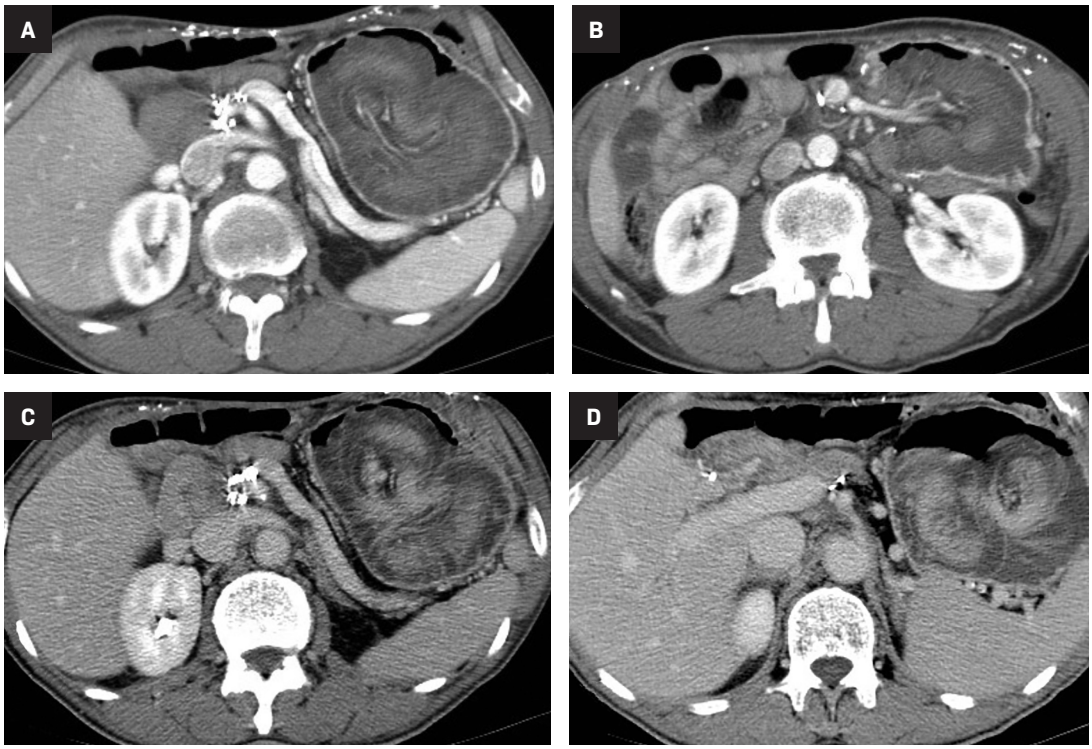

Figure. Contrast-enhanced CT images of the upper abdomen in the arterial phase (A, B) demonstrate an 8 x 10 cm, lobulated mass within the stomach, supplied by the superior mesenteric vessels and protruding through a 3-cm-wide anastomosis demarcated by surgical clips. CT images in the venous phase (C, D) show a twisted loop of proximal jejunum with edematous walls entrapped inside the gastric pouch.

often similar to that of iatrogenic internal hernias, which may occur after various types of gastrojejunal anastomosis.[3,9]

As reported in several publications, radiological diagnosis of this complication can be made by upper GI examination, sonography, or abdominal CT.[1-3,6-8] Although some may reduce spontaneously, most patients require prompt endoscopic or surgical intervention, since delayed treatment can lead to ischemic infarct of the invaginated loop.[1,3,7] In this case, however, gastric distention with gas via an effervescent soft drink proved a simple and effective therapy.

This technical approach is somewhat similar to the successful application of air enema for pneumatic reduction of colonic intussusception.[10] It may also be useful for conservative management of an uncomplicated gastrojejunal intussusception if recognized early.

CONCLUSION

Retrograde jejunogastric intussusception is a rare complication of Whipple procedures, but it occurs more frequently after Billroth II gastrojejunostomy or Roux-en-Y gastric bypass for morbid obesity. The presenting symptoms are acute epigastric pain, nausea, vomiting, hematemesis, and a palpable, tender mass in the hypochondrium.

Radiology plays a crucial role in differentiating this entity from a postoperative internal hernia and enabling prompt treatment to prevent catastrophic infarction of the intussuscepted intestinal loop.

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