Case Report

Internal Hernia with Volvulus – A Rare Cause of Recurrent Abdominal Pain after Frey's Procedure

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Abstract

Acquired internal hernia can be a rare cause of abdominal pain after Frey's procedure for chronic pancreatitis. The presentation and imaging findings can be non-specific and there should be a high index of suspicion in dealing with these patients. The delay in diagnosis can be catastrophic in some cases, as the bowel can undergo volvulus and gangrene. Prompt surgical treatment is the key to avoid major morbidity and mortality.

Keywords: Chronic pancreatitis, Frey procedure, internal hernia, volvulus

Introduction

Chronic pancreatitis being progressive inflammatory condition of the pancreas, and its treatments are mainly focused on the management of symptoms and complications.[1] Surgical therapy is associated with more effective and sustained pain relief than other treatment modalities.[2] Frey's procedure offers adequate pain relief with organ preservation. Acquired internal hernia can occur when the bowel protrudes through an abnormal opening caused by previous abdominal surgery.[3] Here, we present a case of internal hernia with volvulus after Frey's procedure, where the diagnosis was delayed due to non-specific symptoms and investigation findings.

Case Report

Our patient is a 31-year-old man, without any comorbidities or addictions, with a history of recurrent upper abdominal pain, and was diagnosed with chronic calcific pancreatitis. He underwent Frey's procedure in August 2017 for the same. Intraoperatively, the pancreas was atrophic with a dilated pancreatic duct and multiple intraductal calculi. The pancreatic duct was opened and stones were removed along with head coring, followed by Roux-en-Y pancreaticojejunostomy. Side-to-side jejunojejunostomy was performed and the mesenteric window was closed. Post-operative course was uneventful and the patient was discharged on post-operative day 6. After 2 months of follow-up, he started to have recurrent upper abdominal pain, not associated with abdominal distention or vomiting. He was readmitted frequently for similar complaints. He was evaluated with contrast-enhanced computed tomography (CECT) abdomen in August 2019 which showed twisting of mesenteric vessels with normal wall enhancement likely secondary to mobilization of jejunal loops. He was further evaluated with barium meal follow through in October 2019 which showed no significant abnormality. Hence, he was managed conservatively. In view of recurrent symptoms, a repeat CECT abdomen was performed in August 2021 that showed mesenteric volvulus with significant mesenteric venous congestion and normal bowel wall enhancement. In view of the above findings and persistent symptoms, he underwent re-exploration on 19 September 2021. Intraoperatively, there was a large meso-jejunal mesenteric window through which herniation of the small bowel occurred [Figure 1]. A herniated bowel volvulus was observed. There was mild venous congestion of the bowel without evidence of any gangrene. Derotation of the intestine was performed by following the bowel from the ileocecal junction. Reduction of internal hernia and closure of mesenteric defect were done [Figure 2]. Post-operative

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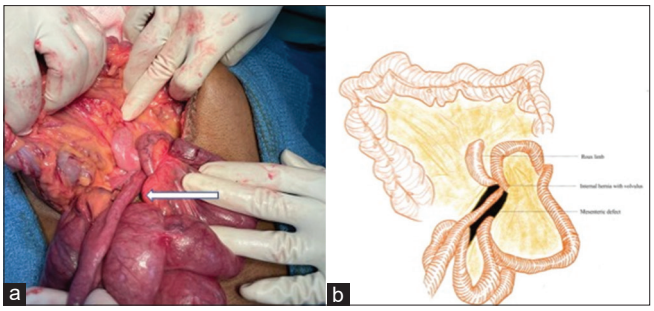

Figure 1: (a) Intraoperative image showing mesenteric defect with herniation of small bowel with volvulus (arrow), (b) schematic illustration showing mesenteric defect with herniation

course was uneventful and the patient was discharged on post-operative day 4. The patient remained asymptomatic at 1 year of follow-up.

Discussion

More than 50% of patients with chronic pancreatitis will require surgery during the course of the disease.[4] Early surgical therapy is associated with better pain relief and quality of life.[5] Frey's procedure is the preferred surgical treatment option for chronic pancreatitis when there is low suspicion of malignancy.[6] Frey's procedure includes partial resection of the head of the pancreas and lateral pancreaticojejunostomy with Roux-en-Y limb of the jejunum. The continuity of the gastrointestinal tract is maintained by a jejunojejunostomy. This allows drainage of the pancreatic duct with stone removal and removal of the epicenter of pain along with adequate parenchymal preservation.[7] Partial or complete pain relief is achieved in 75% to 90% of patients after the procedure.[1,8]

Internal hernias account for about 5.8% of small bowel obstructions.[9] In a patient with a history of previous abdominal internal hernia can occur through the mesenteric hole created during reconstructive anastomosis or through apertures caused by intra-abdominal adhesions.[3] Meso-jejunal mesenteric window is a potential space for internal herniation after any Roux-en-Y reconstruction. These retro-anastomotic types of internal hernias occur primarily in the early post-operative period, with 50% of cases occurring within the first post-operative month. In nearly 75% of cases, the herniated limb is an efferent jejunal segment.[10]

The usual presenting symptoms include recurrent abdominal pain and nausea aggravated by food intake.[11] Imaging studies may be negative in cases of intermittent obstruction. Sac-like clustering of bowel with deformed and displaced Y-limb in computed tomography image may suggest internal herniation through meso-jejunal mesenteric window.[3] Although routine closure of mesenteric defects is a controversial topic, few studies have found a decreased incidence of internal hernia after the closure of mesenteric defects.[11,12] Management usually consists of re-exploration with reduction of hernia contents and closure of the mesenteric defect with or without bowel resection, depending on the vascularity of the herniated bowel.[10,11]

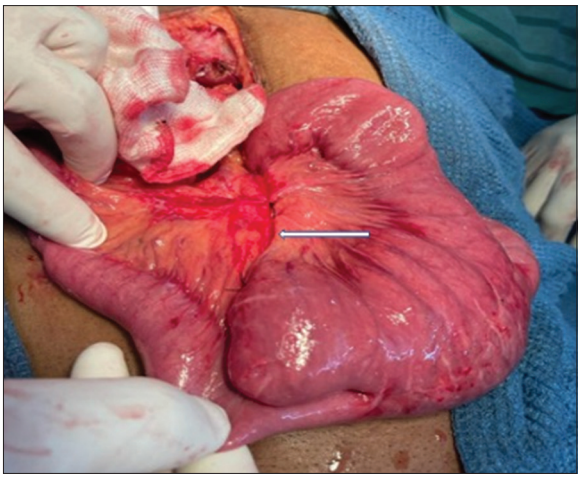

Figure 2: Intraoperative picture showing closed mesenteric defect after reduction of hernia (arrow)

Conclusions

Internal hernia is a rare cause of abdominal pain after Frey's procedure. There should be a high index of suspicion as the diagnosis is not always straightforward. Surgical intervention is the key to preventing major morbidity and mortality.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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