An Atypical Presentation of a Small Bowel Obstruction in a Young Woman with a Congenital Omental Defect

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INTRODUCTION

Acute small bowel obstruction (SBO) is a common surgical emergency in which the normal flow of intraluminal intestinal contents is interrupted.[1] The two most common etiologies for SBO are postoperative adhesions and hernias; additional risk factors include tumors, foreign body ingestion, and inflammatory bowel diseases. Prolonged obstruction can lead to bowel dilatation proximal to the obstruction, coupled with edematous bowel wall and loss of normal absorptive functions.[2] If untreated, SBO can progress to compromised intestinal perfusion, causing perforation, infection, and death; up to 42% of SBO are complicated by ischemia with significantly increased mortality.[3-4] Initial symptoms include periumbilical cramping, nausea, vomiting, obstipation and abdominal distention, while sudden onset of sharp, focalized abdominal pain is suggestive of peritoneal irritation secondary to acute perforation.[5-6]

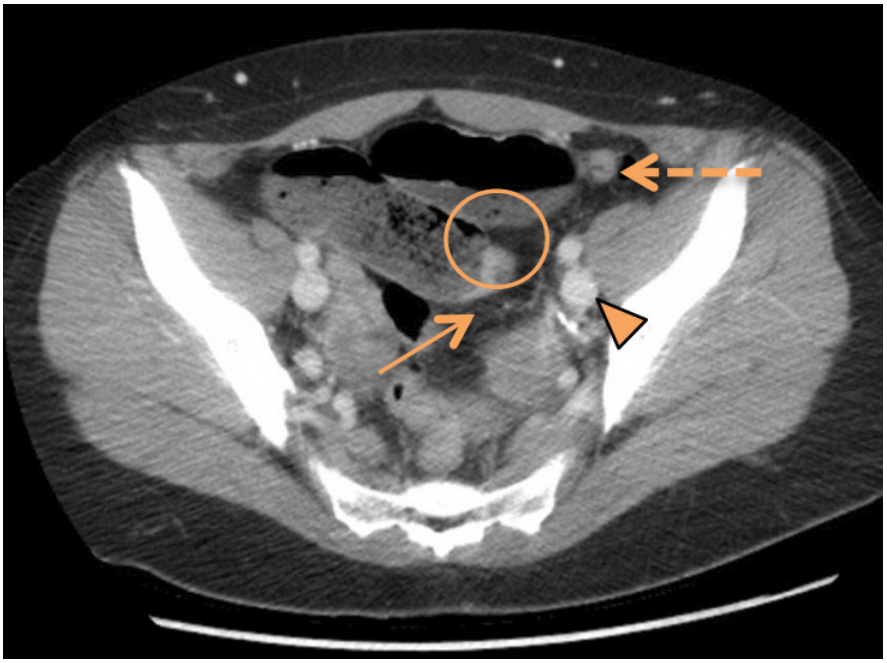

Figure 1. CT abdomen pelvis w/contrast of a small bowel obstruction of in a young woman with a left congenital omental defect. Specific findings include the transition point in the left pelvis (arrowhead), prominent loops of dilated distal ileum with air-fluid levels (dashed arrow), a small bowel feces sign (circled) and adjacent free fluid within the right pelvis (solid arrow).

CASE REPORT

A 35-year-old woman with no past medical or surgical histories presented to the ED with sudden onset of epigastric pain that radiated to her left flank and left lower quadrant. She had never experienced this discomfort in the past and had a normal bowel movement shortly prior to presentation. Review of systems was negative for urinary or vaginal symptoms, constipation, diarrhea, hematochezia, and melena. She denied any history of pelvic inflammatory diseases or inflammatory bowel diseases or abdominal trauma; she had an unremarkable colonoscopy with excision of a non-malignant polyp 5 years ago for rectal bleeding after vaginal birth.

On arrival to the ED, she was afebrile with blood pressure 141/97 mm Hg and pulse rate 77 beats/min. Her initial exam was remarkable for mild left epigastric tenderness with minimal left flank tenderness without any rebound tenderness or guarding. Complete blood count (CBC), comprehensive metabolic panel (CMP), lipase, urinalysis, and serum pregnancy tests were normal. Throughout the ED stay, her symptoms gradually worsened with more frequent, intermittent episodes of abdominal pain, requiring repeated dosages of morphine, ondansetron and GI-cocktail (aluminum-magnesium, hydroxide-simethicone suspension with viscous lidocaine 2%) with interval improvement. An abdomen CT with IV-contrast showed a small bowel obstruction located in the left pelvis (**Figure 1**).

The patient was kept NPO and taken to the operating room for diagnostic laparoscopy that revealed a loop of small bowel herniating through an omental defect. The small bowel was reduced without signs of ischemic injuries; the omental defect was lysed and the appendix was also removed. The patient was transferred to the surgical floor where she was able to be discharged home on hospital day 3 taking pantoprazole and oral analgesia.

DISCUSSION

This is an unusual presentation of an acute SBO secondary to an internal hernia through a congenital omental defect. This case is presented due to the rarity of the disease process and to review unique CT findings for SBO, as well as emphasizing the importance of frequent patient reassessment.

Internal hernia is a protrusion of an intraperitoneal viscus within the peritoneal cavity and it is a very rare etiology for bowel obstruction, especially in the absence of abdominal surgeries, trauma or inflammation. While only 0.2 to 5.8% of intestinal hernias are due to internal hernia, the mortality may exceed 50% if there is strangulation.[7-9] Traditionally, internal hernias through the omentum occur in a bimodal distribution in both pediatric and adult patients. Pediatric omental hernias are associated with congenital defects and occur in 35% of pediatric internal hernia; adult mesenteric hernias, in contrast, often occur after abdominal surgeries, especially gastric bypass with Roux-En-Y anastomosis.[10] Adult patients with mensenteric hernia after a recent gastric bypass present more acutely with periumbilical crampy pain, nausea, and distention; vomiting is less prominent due to decreased gastric secretions from a surgically reduced stomach.[11] Due to the vague symptoms, compounded by disease rarity, a high level of suspicion should be kept for SBO on the differential diagnosis for acute abdominal pain, especially since early intervention can prevent unnecessary resection anastomosis.

Abdominal computed tomography (CT) is the imaging modality of choice in the ED for SBO due to its ability to identify the etiology, the location, as well as the severity and complications of the obstruction.[12] The ability to detect SBO via CT depends on the various imaging slice widths; the sensitivity and specificity can be as high as 96% and 100% for a 0.75mm slice thickness study, or as low as 79% and 87% for a 50mm slice thickness study.[13-14] The presence of intraluminal fluid within the dilated bowel loops can also provide imaging enhancement to help delineate bowel wall pathologies.[15] Common SBO findings on CT include dilated proximal bowel with multiple air fluid levels, a distal collapsed bowel and a localizable transition point. Additional CT findings include submucosal edema, mesenteric edema, "target sign" (intussusception), "whirl sign" (volvulus), and "venous cut-off sign" (thrombosis).[16-18] Another rare CT finding for SBO is the small bowel feces sign (SBFS), defined by the presence of feculent material mingled with gas bubbles in the small intestinal lumen, as seen in our patient's CT (**Figure 1**). The etiology of SBFS is thought to be secondary to bacterial overgrowth and increased water absorption in the distal small bowel from delayed intestinal transit and obstruction. While rare (prevalence as low as 7–8%), SBFS has a high specificity for subacute or low-grade SBO because the presence of increased water absorption indicates slowed, but not halted intestinal transit.[19-20]

Once diagnosed, management of SBO depends on the severity of the obstruction. Patients with partial or uncomplicated obstruction (without ischemia or perforation) may be observed with appropriate volume resuscitation, electrolyte repletion and gastric decompression, while patients with complicated SBO require prompt surgical exploration.[21-22]

CONCLUSION

Small bowel obstruction is a surgical emergency commonly associated with post-operative adhesions or hernias and can result in intestinal perforation from intraluminal dilatation. Omental or mesenteric hernias in adults are often seen after abdominal surgeries such as gastric bypass, and may present with vague abdominal symptoms. CT abdomen is the imaging modality of choice due to its high sensitivity and specificity; common SBO CT findings include air-fluid levels, dilated loops of bowel and collapsed distal bowel both proximal and distal to the transition point, respectively. The small bowel feces sign (SBFS) is a rare but specific CT finding for low grade SBO and should prompt immediate surgical consult in the absence of other radiographic findings for SBO. Patients diagnosed with partial or uncomplicated SBO can be managed conservatively, while signs of bowel ischemia and perforation warrant immediate surgical intervention.

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