

A rare case of obscure gastrointestinal bleeding: Small bowel varices flowing into the inferior epigastric vein

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ABSTRACT

Ectopic varices include all varices except esophageal or gastric varices and comprise large portosystemic venous collaterals that occur anywhere in the abdomen. Ectopic varices are relatively rare; however, approximately 5% are related to gastrointestinal bleeding. Ectopic varices usually occur in the rectum, duodenum, or colon, and portal hypertension is the most common cause. Hemodynamic profiles of ectopic varices remain unknown, and extensive bleeding from these structures occurs because diagnosis and treatment are difficult. Here we report a case of obscure gastrointestinal bleeding (GIB) due to ectopic varices in the small intestine that flowed into the inferior epigastric vein. Our observations suggest that when obscure GIB is detected in patients with either cirrhosis or post-surgical history including incisional hernia, it is essential to acquire multilayer reconstruction images and volume-rendered 3-dimensional reconstruction of computed tomography scans to investigate the complex venous supply and optimize decisions for therapy.

Keywords: Cirrhosis; ectopic varices; incisional hernia; portal hypertension; submucosal varices.

INTRODUCTION

Ectopic varices are defined as all varices excluding those of esophageal or gastric origin and refer to large portosystemic venous collaterals occurring anywhere in the abdomen.^[1] Although ectopic varices are relatively rare, approximately 5% of these anomalies are associated with gastrointestinal bleeding (GIB).^[2] The hemodynamic profiles of ectopic varices remain unknown, especially in the small intestine, and GIB from these varices tends to be extensive because of the difficulty of diagnosis and treatment.^[2] Most bleeding ectopic varices associated with poor outcomes warrant emergency intervention. Here we report a rare case of obscure GIB caused by ectopic varices in the small intestine flowing into the inferior epigastric vein.

CASE REPORT

A 69-year-old woman was transferred to our surgery department with severe anemia requiring blood transfusion caused by obscure GIB, because the bleeding site had not been detected by upper nor lower endoscopy at another hospital. She had suffered from obscure GIB 6 months earlier. Her past medical history included cirrhosis caused by non-alcoholic steatohepatitis, and she had an abdominal incisional hernia following the surgical removal of a cervical cancer ≥ 15 years earlier. Physical examination revealed normal vital signs. Hemoglobin, hematocrit, and serum blood urea nitrogen levels were 6.8 g/dL (reference range, 12.0–16.0 g/dL), 21% (reference range, 35%–48%), and 8 mg/dL (reference range, 8–20 mg/dL), respectively. Platelet count was $12.7 \times 10^4/\mu\text{L}$ (reference range, $15\text{--}35 \times 10^4/\mu\text{L}$), and prothrombin time and hepaplastin test were 58.5% (reference range, 80%–100%) and 60% (reference range, 70%–130%), respectively. Initially, the patient complained of abdominal pain.

Because repeated upper and lower endoscopies were negative in obscure upper gastrointestinal bleeding (UGIB), we performed contrast-enhanced computed tomography (CT) of the trunk, which revealed varices in the small intestine at the site of the abdominal incisional hernia, which drained into the inferior epigastric vein (Fig. 1a). Volume-rendered

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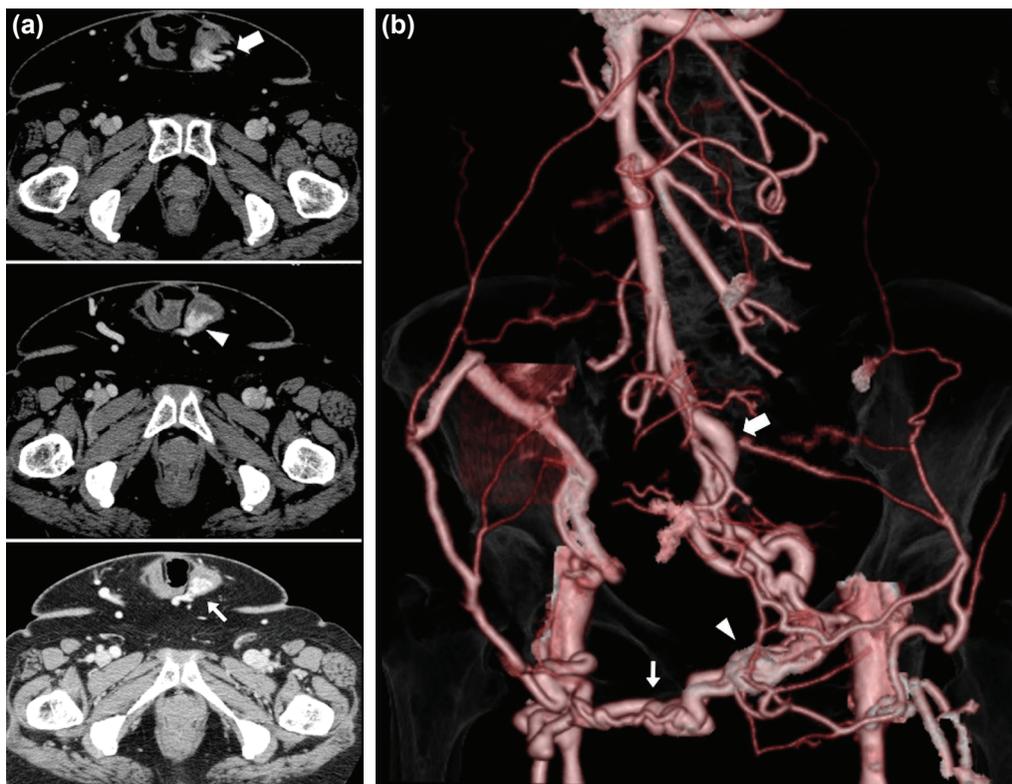


Figure 1. (a) Contrast-enhanced computed tomography. (b) A volume-rendered three-dimensional reconstruction of contrast-enhanced computed tomography. A superior mesenteric vein (the afferent vessel; arrow), varices (arrow head), and inferior epigastric vein (the efferent vessel; small arrow).

three-dimensional (3D) reconstruction also detected that the afferent vessel was a superior mesenteric vein (Fig. 1b). Thereafter, the patient underwent open surgery because endovascular treatment required advanced technical procedures for successful obliteration due to the complex anatomic features of the ectopic varices. Partial removal of the small intestine, including the varices following the ligation of the afferent and efferent vessels was achieved. The subsequent

pathology report revealed submucosal varices in the small intestine (Fig. 2). After surgery, no further bleeding was encountered, and the patient was discharged from our hospital in good condition.

DISCUSSION

Varices form in any abdominal viscera in patients with portal hypertension, which results in an increase in the resistance of blood flow from the venous system of the gastrointestinal organs or other abdominal viscera. Liver cirrhosis is the most common cause of ectopic varices.^[3,4] Previous studies have reported that ectopic varices commonly occur in the rectum, duodenum, and colon. Approximately 6%–17% of ectopic varices are discovered in the small intestine.^[3] However, the diagnosis of varices in this region may be challenging because varices often develop in the submucosa of the small intestine, making them more difficult to detect by endoscopy than esophageal or gastric varices. Recently, double balloon endoscopy and capsule endoscopies have made it possible to observe such varices in the small intestine.^[5,6]

Although it is not clear whether the inferior mesenteric vein has any communication with the portal system, ectopic varices in the small intestine are usually associated with adhesions between the small intestine and the abdominal wall. Furthermore, small bowel varices can develop as a consequence of previous operations or abdominal injury. Sato et al.

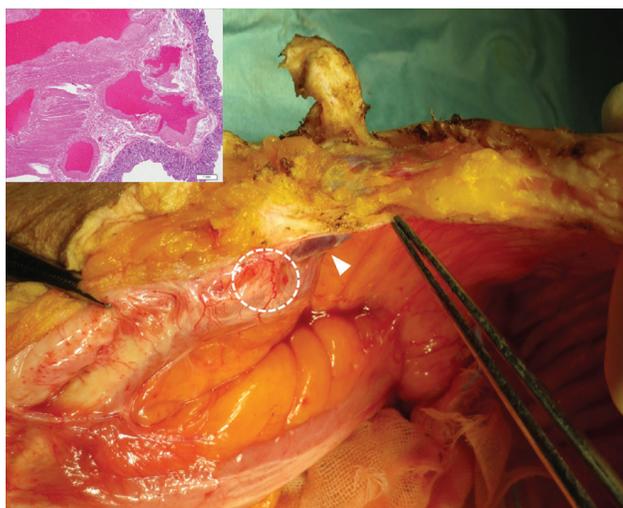


Figure 2. Photograph showing an operative view. The efferent vessel (arrow), and varices (circle). Pathology revealed submucosal varices in the small intestine.

reported that a triad of portal hypertension, hematochezia without hematemesis, and previous abdominal surgery characterizes bleeding from small intestinal varices.^[7] Moreover, they mentioned that the development of collateral circulation via postoperative adhesions is a risk factor for small bowel varices. In the present case, we determined the development of collateral circulation in the incisional hernia cavity. Therefore, when obscure GIB is detected in patients with either cirrhosis or post-surgical history, including incisional hernia, ectopic varices in the small intestine and varices with unusual collaterals should be suspected. Furthermore, it is essential to acquire multiplanar reconstruction images and volume-rendered 3D reconstructions of CT scans to investigate the complex venous supply and optimize therapeutic decisions.

Recently, endovascular treatment, including transjugular intrahepatic portosystemic shunts or balloon-occlusion retrograde transvenous obliteration (BRTO) may have a role in the treatment of gastric or duodenal varices. Although BRTO can obliterate not only varices but also the afferent and efferent veins in gastric or duodenal varices, this approach may be a technical challenge in other ectopic varices because of the complex anatomic features of the varices.^[4,8] Therefore, surgical removal of submucosal varices is the preferred treatment to stop the enlargement of small bowel varices with high success. In the future, endovascular treatment may have a role in the treatment of patients in whom open surgery is prohibitively risky.

Conclusion

Small intestinal varices are rare causes of GIB. When obscure

GIB is detected in patients with either cirrhosis or post-surgical history including incisional hernia, multiplanar reconstruction of CT images is an effective means of investigating the complex venous supply and optimizing therapeutic decisions.

Conflict of interest: None declared.

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OLGU SUNUMU - ÖZET

Seyrek görülen okült gastrointestinal kanama: İnferiyor epigastrik vene boşalan ince bağırsak variköz venleri

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Ektopik varisler özofagus veya gastrik varisler dışında tüm varisleri içerir ve karın bölgesinin herhangi bir yerinde oluşan geniş portosistemik venöz kollateralleri belirtir. Ektopik varisler göreceli olarak seyrek görülür ve bu varislerin ortalama %5'i gastrointestinal kanamaya neden olur. Ektopik varisler genellikle rektum, duodenum ve kolonda olduğu gibi en sık görülen nedeni portal hipertansiyondur. Ektopik varislerin hemodinamik profilleri halen bilinmemekte olup tanı ve tedavisi güç olduğundan bu oluşumlardan yaygın kanamalar meydana gelir. Burada, inferior epigastrik vene boşalan ince bağırsaktaki ektopik varislere bağlı bir okült gastrointestinal kanama (GİK) olgusunu bildirmektediriz. Gözlemlerimiz siroz hastalarında veya insizyonel herni cerrahisi geçirmişlerde nedeni belli olmayan GİK saptandığında çok düzlemli bilgisayarlı tomografi (BT) rekonstrüksiyon görüntüleri ve 3-boyutlu BT rekonstrüksiyon taramaları elde edilerek kompleks venöz dolaşımı araştırmak ve tedavi kararlarını optimize etmek gerekir.

Anahtar sözcükler: Ektopik varisler, insizyonel herni; portal hipertansiyon; siroz; submukozal varisler.

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