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Case Report

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A case of variceal bleeding from the jejunum in liver cirrhosis

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While esophagogastric varices are common manifestations of portal hypertension, variceal bleeding from the jejunum is a rare complication of liver cirrhosis. In addition, ectopic variceal bleeding occurs in the duodenum and at sites of previous bowel surgery in most cases, including of stomas. We report a case of obscure overt gastrointestinal bleeding from jejunal varices in a 55-year-old woman who had not previously undergone abdominal surgery, who had liver cirrhosis induced by the hepatitis C virus. Emergency endoscopy revealed the presence of esophageal varices without stigmata of recent bleeding, and no bleeding focus was found at colonoscopy. She continued to produce recurrent melena with hematochezia and received up to 21 units of packed red blood cells. CT angiography revealed the presence of jejunal varices, but no active bleeding was found. Capsule endoscopy revealed fresh blood in the jejunum. The patient submitted to embolization of the jejunal varices via the portal vein, after which she had a stable hemoglobin level and no recurrence of the melena. This is a case of variceal bleeding from the jejunum in a liver cirrhosis patient without a prior history of abdominal surgery. **(Clin Mol Hepatol 2013;19:78-81)**

Keywords: Jejunal varices; Liver cirrhosis; Portal hypertension

INTRODUCTION

Varices commonly occur in the gastro-esophageal region and bleeding from gastro-esophageal varices is one of the most serious complications of portal hypertension. However, ectopic varices can arise anywhere in the abdomen except in the cardio-esophageal region and can represent an unusual cause of hemorrhage, accounting for up to 5% of all variceal bleeding.[1] Although ectopic varices bleed less commonly than gastro-esophageal varices, they can be far more difficult to diagnose and treat. Ectopic varices can occur at several sites; bleeding ectopic varices are most commonly found in the duodenum and at sites of previous bowel surgery including stomas.[1,2] However, variceal bleeding from the jejunum in a cirrhotic patient without a prior history of abdominal surgery is rare.

We report a case of intrahepatic portal hypertension-related variceal bleeding from the jejunum with obscure overt gastrointestinal (GI) bleeding who has not previously undergone abdominal surgery and review the literature pertaining to this condition.

CASE REPORT

A 55-year-old woman with liver cirrhosis induced by the hepatitis C virus was admitted to Eul-ji University Hospital with a 20 day history of melena. Upon admission, her vital signs were as follows: blood pressure of 110/70 mmHg, heart rate of 70/min, respiratory

Abbreviations:

GI, gastrointestinal; IV, intravenous; TIPS, transjugular intrahepatic porto-systemic shunt

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rate of 18/min and body temperature of 36.8°C. Head and neck examinations were unremarkable except for anemic conjunctiva. Her abdomen was distended with shifting dullness and the spleen was palpable. Initial laboratory data were as follows: WBC 1,400/mm^3, Hb 5.1 g/dL, platelet 63,000/mm^3, BUN 19 mg/dL, creatinine 0.48 mg/dL, albumin 3.0 g/dL, AST 26 IU/L, ALT 20 IU/L, ALP 47 IU/L, total bilirubin 0.73 mg/dL, INR 1.45, CRP 0.08 mg/dL, AFP 2.4 ng/dL. The hepatitis B marker was negative and the anti HCV antibody was positive. A hepatitis C viral load was undetectable. Initial diagnosis was Child's B liver cirrhosis with possible variceal bleeding. The patient was treated with intravenous (IV) pantoprazole, IV terlipressin and IV ciprofloxacin and was transfused with fresh frozen plasma and packed red blood cells. Emergency esophagogastroduodenoscopy revealed the presence of grade 2 esophageal varices without stigmata of recent bleeding. No bleeding focus was found at colonoscopy up to the terminal ileum. Abdominal computed tomography (CT) showed liver cirrhosis with massive ascites, splenomegaly and esophagogastric varices with portosystemic collaterals. In addition, CT angiography revealed the presence of jejunal varices but no active bleeding was found (Fig. 1). Because she continued experiencing recurrent melena, a capsule endoscopy was performed on day five of hospitalization. It demonstrated fresh blood adjacent to varices in the jejunum (Fig. 2). On day six of hospitalization, a decision was made to perform the embolization of varices via the portal vein. The guidewire was manipulated into the superior mesenteric vein and the catheter tip was then positioned into tortuous, wide jejunal varices drained to the inferior vena cava. Five steel coils were placed into this vein. After that, injection of contrast under pressure did not demonstrate any retrograde flow, indicating that it was occluded (Fig. 3).

She received up to 21 units of packed red blood cells before the coiling embolization of the jejunal varices. Since that point in time, she has had a stable hemoglobin level and no recurrence of the melena has been recognized. She has been treated with a non-selective beta-blocker. A CT scan of the abdomen obtained 5 month after the embolization showed contrast-enhancing steel coils deposits within the varices. No further GI bleeding occurred during the 5 month follow-up.

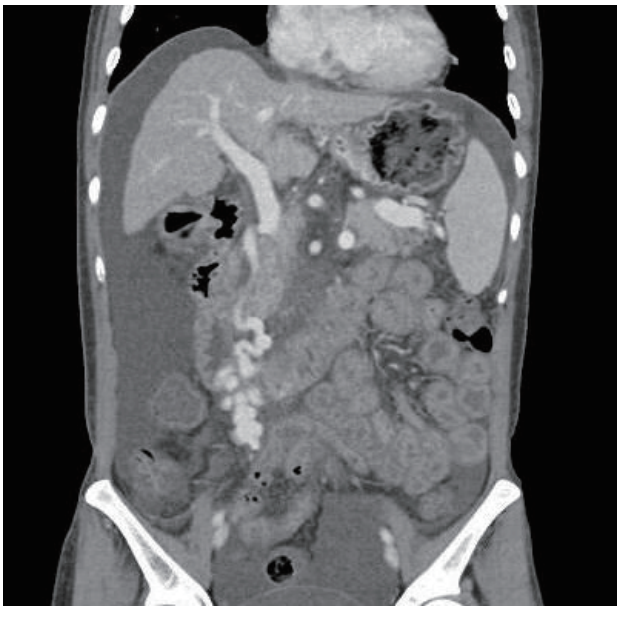

Figure 1. CT angiography showing jejunal varices with no bleeding.

DISCUSSION

Obscure GI bleeding could be categorized as obscure overt and obscure occult bleeding on the presence or absence of clinically evident bleeding.[3] It has been estimated that approximately 5% of GI bleeding occurs in the small intestine.[4] Lesions caused by portal hypertension are also important causes of obscure bleeding. Varices, either in the small bowel or in other unusual locations, should be considered in all obscure bleeders who have liver disease and/or portal hypertension.[4] Ectopic varices are defined as large portosystemic venous collaterals occurring anywhere in the abdomen except in the cardio-esophageal region. In patients

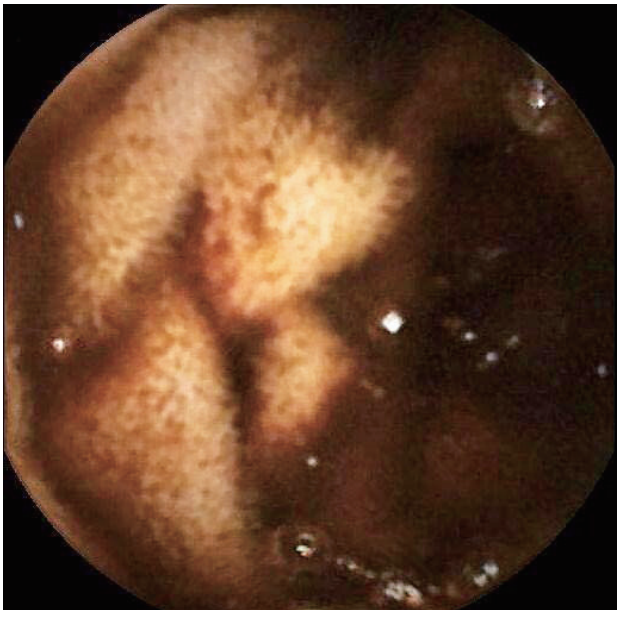

Figure 2. Capsule endoscopy revealed "red markings" on and adjacent to varices with serpiginous folds and a shiny surface in the jejunum.

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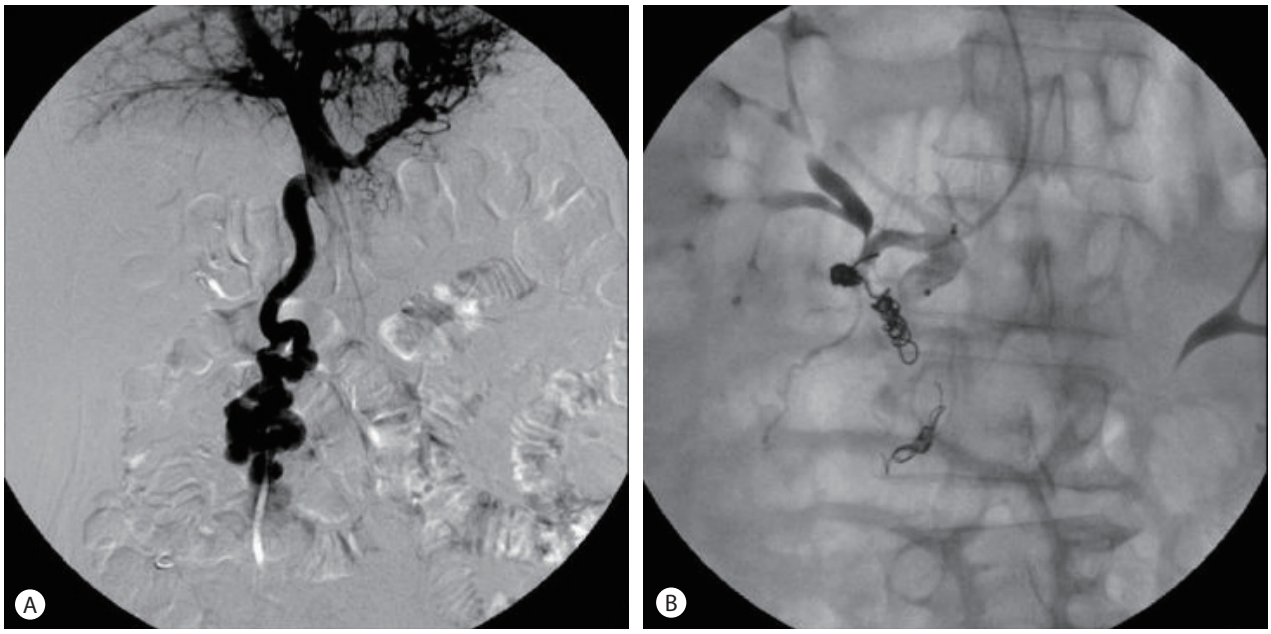

Figure 3. (A) Portal venography showing huge varices in the jejunum. (B) Angiography demonstrating coil embolization of the varices in the jejunum.

with portal hypertension caused by an obstruction of the portal or splenic veins, duodenal varices are more prevalent than in patients with intrahepatic portal hypertension.[1] A history of abdominal surgery appears to predispose the development of ectopic varices in adhesions.[2] A triad of portal hypertension, history of abdominal surgery and hematochezia without hematemesis characterizes small intestinal varices.[2] Duodenal varices occur in about 0.4% of all patients with portal hypertension and account for one-third of bleeding episodes from ectopic varices. Variceal bleeding from the jejunum is more rare than variceal bleeding from the duodenum because of inaccessibility and anatomic difference.[5] Recently, smallbowel varices secondary to portal hypertension, diagnosed by capsule endoscopy, are reported and small bowel varices and mucosal changes are considered the definite or probable source of bleeding.[6]

Investigations of the small intestine, including radiographic contrast studies, nuclear scans, angiography, capsule endoscopy and push enteroscopy have been used to diagnose jejunal varices.[7] In this case, CT angiography was negative and a capsule endoscopy was performed as the next step. Capsule endoscopy, which is relatively non-invasive, was a suitable investigation for this patient. Capsule endoscopy is being used increasingly to investigate GI bleeding of obscure origin and disorders of the small bowel. Tang SJ et al. found smallbowel varices in four out of 46 patients (8.7%) who underwent capsule endoscopy for obscure GI bleeding.[8] They reported that capsule endoscopy is invaluable and highly sensitive for the detection of small-bowel variceal bleeding. Triester SL et al. reported that capsule endoscopy was shown to be superior to push enteroscopy in a meta-analysis, although it has limitations in its inability to therapy.[9]

The initial management of bleeding from jejunal varices involves hemodynamic stabilization with correction of anemia and coagulopathy. The patient was treated with IV terlipressin, which has been beneficial in the management of bleeding esophageal varices. The role of terlipressin in the control of bleeding from jejunal varices has not been estimated, but the use of terlipressin to reduce splanchnic blood flow and variceal pressure may be beneficial in patients with intrahepatic portal hypertension-related variceal bleeding.[1]

Outside the reach of standard endoscopy, available therapy for jejunal variceal bleeding is limited to surgery, transjugular intrahepatic porto-systemic shunt (TIPS), enteroscopy and percutaneous emolization. Surgery has been the main treatment option of bleeding jejunal varices.[10-12] The embolization of coil was attempted in this case because she had coagulopathy with high risk associated with surgery. Radiological techniques with embolization have been used successfully in the active bleeding of jejunal varices.[13] There is a case report of enteroscopic sclerotherapy being successfully carried out using cyanoacrylate to treat hemorrhage from jejunal and gallbladder varices.[14] The selection of possible therapeutic options for cirrhotic patients was made considering the risks and benefits in the situation and the health of the patients.

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In conclusion, bleeding from ectopic varices must be considered for patients with portal hypertension and obscure overt GI bleeding, and we described a case of variceal bleeding from the jejunum in a patient with liver cirrhosis who had not previously undergone abdominal surgery. Combination of CT angiography and capsule endoscopy could lead towards diagnosis, and embolization of coil was attempted in this case because of high risk of surgery.

Conflicts of Interest

The authors have no conflicts to disclose.

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