

Successful Emergency Enterectomy for Bleeding Ileal Varices in a Patient with Liver Cirrhosis

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Abstract

We report a rare case of bleeding ileal varices successfully treated with emergency enterectomy. A 72-year old woman with hepatic cirrhosis due to hepatitis C was admitted to our hospital because of anemia and hematochezia. An endoscopic examination showed no evidence of bleeding in the upper and lower gastrointestinal tracts. Angiographic studies of portal hemodynamics revealed extravasation from the ileal varices and total occlusion of the portal vein due to portal thrombus. This made it difficult to remove the ileal varices using interventional radiology. Therefore, the patient underwent emergency enterectomy for the ileal varices. No further gastrointestinal bleeding occurred during the 1-year follow-up.

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Key words: ileal varices, enterectomy, liver cirrhosis

Introduction

Esophagogastric variceal bleeding is occasionally found in patients with portal hypertension, but bleeding from small intestinal varices is rare. Varices can occur along the entire gastrointestinal tract—the duodenum, jejunum, ileum, colon, and rectum—usually in relation to previous abdominal surgery and are commonly denoted as ectopic varices¹. Ectopic varices occur in 1% to 5% of patients with cirrhosis, and small intestinal varices are seen in 17% to 18% of these patients². Bleeding from small intestinal varices, however, can be life-threatening because of the difficulty in making a diagnosis

anatomically. This paper describes a successful emergency enterotomy for bleeding ileal varices in a patient with liver cirrhosis and reviews previous reports of ileal varices.

Case Report

A 72-year-old woman was admitted to the Nippon Medical School for hematochezia. She had a history of hepatitis C virus-positive liver cirrhosis for 12 years. Six years prior to her admission, she had undergone endoscopic injection sclerotherapy for esophageal varices. Ten years previously, peritoneovenous shunts had been inserted to treat refractory ascites. Two years previously, she had

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Table 1 Laboratory data

WBC	3,400 / μ l	ALP	584 IU/l	T-CHO	96 mg/dl	TP	6.0 g/dl
RBC	227×10^4 / μ l	γ -GTP	75 IU/l	TG	46 mg/dl	Alb	2.9 g/dl
Hb	6.3 g/dl	LAP	65 IU/l	Na	144 mEq/l	CRP	0.21 mg/dl
Ht	20.90 %	CHE	60 IU/l	K	3.6 mEq/l	Glu	151 mg/dl
Plt	2.8×10^4 / μ l	AMY	89 IU/l	Cl	108 mEq/l	NH ₃	61 mEq/l
GOT	58 IU/l	CK	68 IU/l	UA	5.6 (mg/dl)	PT	38.80 %
GPT	40 IU/l	T-Bil	2.1 mg/dl	BUN	21.8 mg/dl	APTT	36.0 s
LDH	215 IU/l	D-Bil	1.3 mg/dl	CRE	0.62 mg/dl		

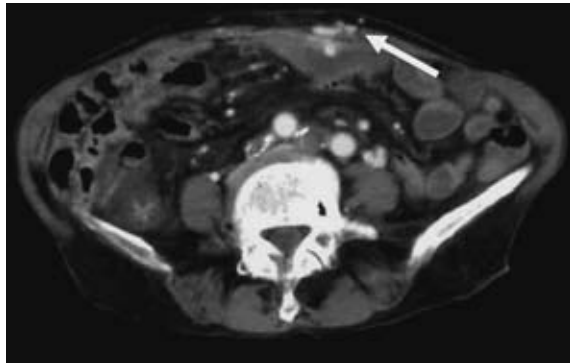


Fig. 1 Ileal varices (arrow) were detected using abdominal computed tomography.

undergone a laparotomy for abdominal aortic aneurysm.

Laboratory findings were as follows: red blood cell count 227×10^4 /mm³ hemoglobin 6.3 g/dl platelet count 2.8×10^4 /mm³ albumin 2.9 g/dl total bilirubin 2.1 mg/dl glutamic oxaloacetic transaminase 58 IU/l glutamic pyruvic transaminase 40 IU/l and prothrombin time 38.8% (Table 1). Examination of the serum were positive for anti-hepatitis C virus antibody and negative for hepatitis B surface antigens. An endoscopic examination revealed no evidence of bleeding in the esophagus, stomach, duodenum, or colon. Abdominal computed tomography suggested ileal varices (Fig. 1). The venous phase of superior mesenteric arteriography also demonstrated ileal varices and extravasation from the varices (Fig. 2a). The portal and splenic veins were completely occluded by thrombi, and cavernous transformation was observed angiographically (Fig. 2b). This made it difficult to reach the ileal varices and remove them via interventional radiology. Emergency laparotomy was performed and revealed severe adhesions between

the abdominal wall and the ileum due to an earlier operation to treat an abdominal aortic aneurysm. Separation of the adhesions revealed ileal venous dilatation in the mesentery. Edema and discoloration of the ileum were also observed and a partial enterectomy was performed. The resected specimen showed ruptured varices and hematoma in the mesentery (Fig. 3). Pathological examination revealed submucosal and parenteral hemorrhages (Fig. 4). After the operation, the volume of ascites discharged through the drainage catheter was an extremely large but gradually decreased. No further gastrointestinal bleeding occurred during the 1-year follow-up.

Discussion

We examined a patient with recurrent and continuous gastrointestinal bleeding caused by ileal varices. The clinical features that led to the diagnosis of ileal varices in our patient were continuous hematochezia, anemia, and evidence of portal hypertension due to liver cirrhosis type C after treatment for esophageal varices. She also had a laparotomy two years prior to admission. The bleeding site was not revealed by upper gastrointestinal endoscopic and colonoscopic examinations, but abdominal angiography revealed the presence of ileal varices.

Lebrec and Benhamou reviewed 161 cases of portal hypertension with bleeding ectopic varices. Twenty-eight of these ectopic varices were found in the duodenum, 29 in the jejunum and ileum, 4 in the colon, 14 in the rectum, 16 in the peritoneum, 3 in the common bile duct and gallbladder, 2 in the vagina, and 1 in the bladder. 44 occurred as a result

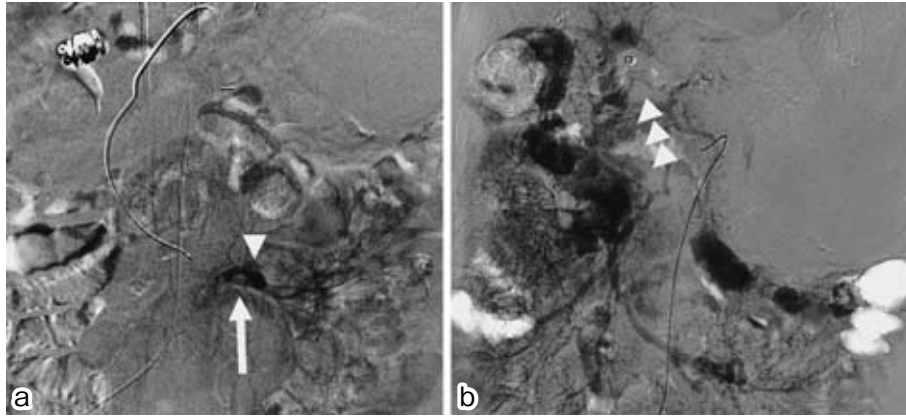


Fig. 2 The venous phase of superior mesenteric arteriography demonstrated ileal varices (**white arrow**) and extravasation from the varices (**white arrow head**) (a). The portal and splenic veins were completely occluded by a thrombus, and cavernous transformation was observed angiographically (**white arrow head**) (b).

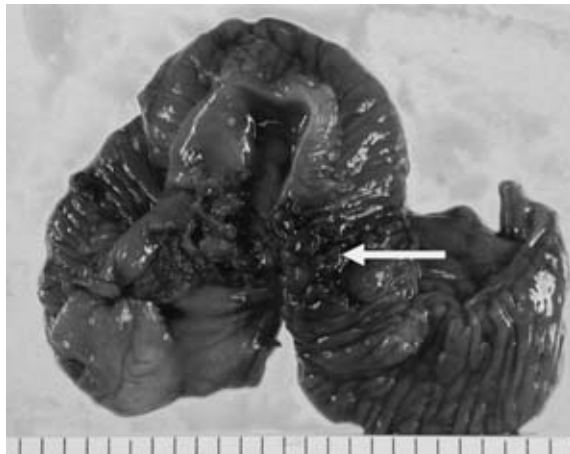


Fig. 3 The resected specimen revealed ruptured varices (**arrow**) and hematoma in the mesentery.

of enterostomy (ileostomy or colostomy). The main sites of the ectopic varices were the collaterals within adhesions after abdominal surgery².

Bleeding from either jejunal or ileal varices is uncommon. We found 57 reports in PubMed dating from 1951 to 2003 that described small intestinal varices. The mean age of the patients was 52.9 years old. Previous abdominal or pelvic surgery was noted in 48 cases (84.2%). The time interval between abdominal surgery and bleeding from the small intestinal varices ranged between 4 months and 48 years (mean: 11 years). An enterectomy was performed in 30 of the 57 cases (52.6%) (**Table 2, 3**). There was evidence of portal hypertension due to liver cirrhosis in 26 of these 30 cases. Our patient

with portal hypertension due to liver cirrhosis had been previously treated with variceal sclerotherapy and surgery in order to avoid the risk of small intestinal varices. The abdominal surgery took place two years prior to the current diagnosis.

Jejuno-ileal varices often form as a result of collateral circulation through postoperative adhesions between the small intestine and the abdominal wall. The mechanism behind the development of jejuno-ileal varices is considered to be as follows: postoperative adhesions bring the parietal surface of the viscera and the abdominal wall into contact. Porto-caval anastomoses then develop and form varices under the intestinal mucosa in patients with portal hypertension. However, preferential venous shunting through varices in the adhesions may not occur².

Early diagnosis in the patients was often difficult because endoscopic examination did not reveal the bleeding site. As the bowel varices are usually massive, recurrent, and life-threatening, more relevant treatment is required². In our patient, the ileum was resected because the bleeding could not be controlled. Interventional radiology could not be performed because the ruptured varix was difficult to access angiographically. Surgical management, such as a segmental resection or a shunt operation, seems to successfully control the bleeding from small intestinal varices. In contrast, medical therapy, such as vasopressin infusion via a peripheral vein, is

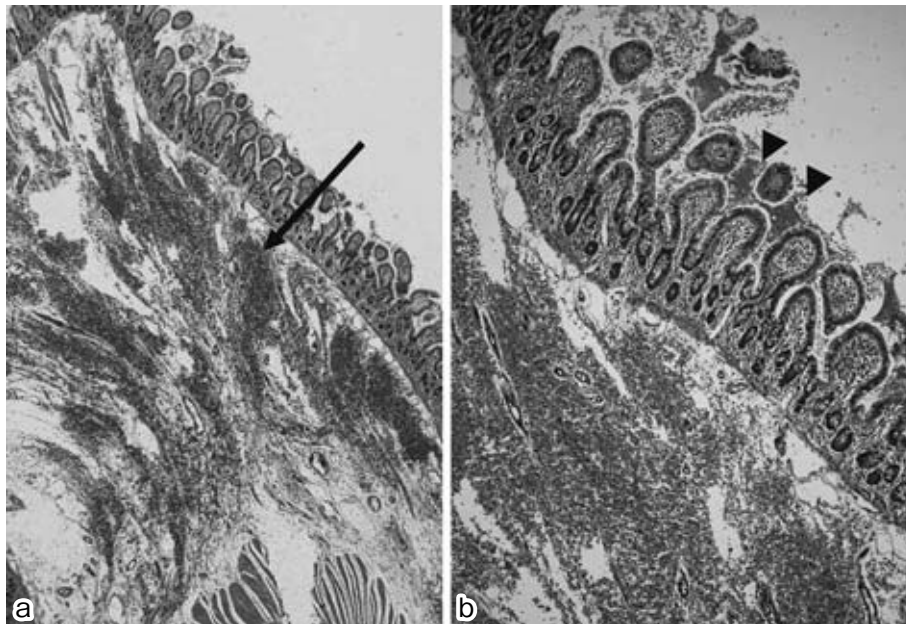


Fig. 4 Pathological examinations revealed submucosal (**arrow**) (a) and parenteral bleeding (**arrow head**) (b).

Table 2 Summary of reported enterectomies for intestinal varices

	Age (years)	Sex	Intestinal Region	Liver Disease	Abdominal Surgery	Years Since Surgery	
	1 ³	54	F	Ileum	Liver cirrhosis	Hysteromyoma	10 years
	2 ³	49	M	Ileum	Liver cirrhosis	Esophageal varices	11 years
	3 ³	40	F	Ileum	Liver cirrhosis	Pelvic peritonitis	7 years
	4 ³	61	F	Ileum	Liver cirrhosis	—	—
	5 ³	38	F	Jejunum	Liver cirrhosis	Appendicitis	17 years
	6 ³	64	F	Ileum	Liver cirrhosis	—	—
	7 ³	56	M	Ileum	Liver cirrhosis	Esophageal varices	10 years
	8 ³	63	F	Jejunum	Liver cirrhosis	Gastric carcinoma	—
	9 ³	46	M	Jejunum	Liver cirrhosis	Esophageal varices	5 years
	10 ³	69	F	Ileum	Liver cirrhosis	Extrauterine pregnancy	32 years
	11 ³	53	M	Ileum	Liver cirrhosis	Colonic carcinoma	9 years
	12 ³	56	F	Jejunum	Liver cirrhosis	—	6 years
	13 ³	58	M	Jejunum	Liver cirrhosis	Esophageal varices	16 years
	14 ³	25	M	Ileum	Liver cirrhosis	Hysteromyoma	—
	15 ³	25	M	Jejunum	Idiopathic portal hypertension	Esophageal varices	8 years
	16 ³	41	M	Jejunum	Liver cirrhosis	Trauma	22 years
	17 ³	61	F	Ileum	Liver cirrhosis	—	—
	18 ³	67	F	Ileum	Idiopathic portal hypertension	—	—
	19 ²	66	F	Ileum	Liver cirrhosis	Extrauterine pregnancy	36 years
	20 ⁴	79	F	Jejunum	Extrahepatic portal obstruction	Gall bladder carcinoma	9 years
	21 ⁵	27	M	Jejunum	—	Trauma	7 years
	22 ⁶	72	F	Ileum	Liver cirrhosis	Hysteromyoma	10 years
	23 ⁷	78	F	Ileum	Primary biliary cirrhosis	Hysteromyoma	48 years
	24 ⁸	80	F	Ileum	Liver cirrhosis	—	—
	25 ⁹	52	F	Ileum	Liver cirrhosis	Cholelithiasis	—
	26 ¹⁰	46	F	Ileum	Liver cirrhosis	Crohn's ileocolitis	1 year
	27 ¹⁰	71	F	Ileum	Liver cirrhosis	Hysteromyoma	18 years
	28 ¹⁰	38	F	Ileum	Liver cirrhosis	Ovarian tumor	16 years
	29 ¹⁰	64	F	Ileum	Liver cirrhosis	Appendicitis	—
	30	72	F	Ileum	Liver cirrhosis	Abdominal aortic aneurysm	2 years

Table 3 small intestinal varices

previous surgery	48/57	84.20%
enterectomy	30/57	52.60%

not always effective³.

In summary, this paper describes a patient with hepatitis C virus-positive liver cirrhosis who had massive and recurrent bleeding from ileal varices. Such varices should be treated in patients with hematochezia and portal hypertensions, although bleeding from the small intestine, except when it occurs in the duodenum, is difficult to diagnosis anatomically.

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