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Case Report

A Rare Cause of GI Bleed in a Patient with Liver Cirrhosis

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Abstract

A 70-year-old patient with background of alcohol related liver cirrhosis who developed a gastrointestinal bleeding few days after being admitted with hepatic encephalopathy. An upper GI endoscopy did not show any evidence of acute bleeding. She later had a significant rectal bleeding with haemodynamic compromise. Computed tomography (CT) with angiography showed a bleeding mesenteric varix which was embolised.

Ectopic varices are relatively uncommon and they can be easily missed. High suspicion of index is essential in diagnosis. Radiological intervention is one of the treatment options for variceal bleeding especially in ectopic varices.

Keywords: *Ectopic Varices; Liver Cirrhosis; Gastrointestinal Bleeding*

Introduction

Variceal bleeding is the common cause of gastrointestinal bleeding in patients with liver cirrhosis. In most patients, the bleeding is mostly from oesophageal varices followed by the gastric varices. Bleeding from other sites is relatively uncommon. Ectopic varices are defined as varices that develop outside of gastro-oesophageal junction. Ectopic variceal bleeding accounts for up to 5% of all variceal bleeding [1]. Prevalence of ectopic varices is 1% - 5% [2]. Patient may present with haematemesis or haematochezia depending on the site of the varix [2]. Ectopic varices may also manifest as obscure GI bleeding leading to iron deficiency anaemia [2]. Ectopic varices have thicker walls with larger diameter and higher wall tension [3]. Hence, they are four times more likely to bleed compared to oesophageal varices [3]. Patients with bleeding ectopic varices tend to bleed at a lower portal pressure than those with bleeding from oesophageal varices [1].

In a nationwide Japanese survey conducted by Watanabe., *et al*. the incidence of ectopic varices at different location was duodenal (57%), small intestinal (6.4%), colonic (3.5%), rectal (44.5%), biliary (4.6%), anastomotic (5.8%), stomal (1.7%), and diaphragm (0.6%) [4]. A retrospective study showed that the all-cause mortality from ectopic variceal bleeding was 8% within the first year of presentation to the hospital compared to 35% in patients with bleeding oesophageal varices [1]. Ectopic varices can be a challenge to diagnose which can lead to a delay in a definitive therapy [1].

Case Description

A 70-year-old patient with a background history of alcohol related liver cirrhosis was admitted with confusion secondary to hepatic encephalopathy. Collateral history revealed that she used to drink 30 to 35 units of alcohol per week but had been abstinent for two weeks prior to the admission. The CT head ruled out any acute brain pathology. The ammonia level on admission was high at 260 umol/L (normal < 61). The admission blood tests were stable (Table 1). However, the haemoglobin level dropped to 56 g/L 2 days after admission (from the baseline of 80 g/L). Three units of red blood cells were transfused within 24 hours. An upper GI endoscopy was performed on the same day and showed grade 1 oesophageal varices and portal hypertensive gastropathy. No active bleeding was seen in the upper gastrointestinal tract. Two days after the gastroscopy, the patient developed rectal bleeding with a mixture of fresh and clotted blood. The patient had further blood transfusion with red blood cells and fresh frozen plasma. The trend of the relevant biochemical and haematological blood tests is shown in table 1.

	Normal laboratory range	Admission	Day of endoscopy	Day of CT and embolisation	Day of discharge
Haemoglobin (g/L)	120-150	68	80	92	88
International normalised ratio (INR)	0.8-1.2	1	1	1.1	1.1
Platelet (x10^9/L)	140-400	129	113	101	147
Urea (umol/L)	2.5-7.8	4.5	6.8	3.9	2.5
Creatinine (umol/L)	44-71	51	69	42	51
Bilirubin (umol/L)	<21	11	11	14	11
ALT (U/L)	10-49	24	21	24	27
ALP (U/L)	30-130	100	80	92	108
Albumin (g/L)	35-50	41	31	31	30

Table 1: *Biochemical profile during the course of hospitalisation.*

Due to haemodynamic compromise, an urgent CT Angiogram was performed that showed a large varix at a loop of small bowel at the central part of the anterior abdomen, in the supraumbilical region. This varix connects with the dilated mesenteric vein (inflow) and the abdominal wall varices (outflow). The small bowel loops adjacent to the varix contains high density material and the appearances likely represent a variceal bleed into the anterior central small bowel. These features are shown in figure 1a and 1b.

The patient underwent embolication of the small bowel varix. This was performed by retrograde cannulation into the varix throught the dilated abdominal wall vein from the right common femoral vein access. The varix was then embolised with a combination of 14 mm and 16 mm Concerto coils and onyx with good result. The embolisation was shown in figure 2. The cessation of flow within the varix was also confirmed with ultrasound scan immediate post procedure. In this case, trans-jugular intra-hepatic portosystemic shunt (TIPS) was not considered due to clinical presentation of hepatic encephalopathy at the time of admission.

There was no further bleeding post procedure with the stable haemoglobin level. She was discharged 4 days later with outpatient follow up with Gastroenterology team. On discharge, the haemoglobin was stable at 88 g/L.

Figure 1a

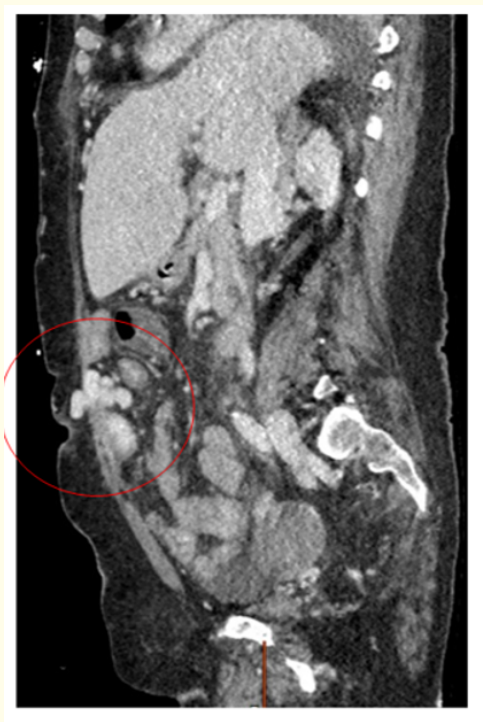

Figure 1b

Figure 1a (Axial Image) and 1b (Sagittal Image): *Axial image of CT mesenteric angiogram (delayed phase) which showed dilated mesenteric veins in the right iliac fossa, leading to tortuous varices in the anterior peritoneum and abdominal wall through a varix adjacent to a small bowel loop which contains contrast.*

Figure 2: *Angiographic images of embolisation of mesenteric and abdominal wall varices. A. (left image) Concerto™ detachable coil was inserted into the mesenteric varix. B. (right image) Onyx™ liquid embolic was injected into the varix with antegrade filling towards the abdominal wall varices.*

Discussion

Portal hypertension in liver cirrhosis is a result of an increased resistance in the portal vein flow through fibrosed liver. It leads to shunting between portal and systemic circulation. The most common sites are in the oesophagus and stomach. The less common sites of ectopic varices are splenic hilum, abdominal wall, rectum, stoma sties, biliary system and small intestine [6]. Ectopic variceal bleeding is rare and can account for up to 5 % of all variceal bleeding [3].

If ectopic varices are identified, the first step is to check the patency of meso-portal circulation. If the circulation is occluded, recanalization of meso-portal occlusion by venoplasty or stenting can be an effective treatment [5]. On the contrary, if the circulation is patent, radiological interventions can be performed to occlude the ectopic veins [5].

The management depends on the site of bleeding, local expertise, anatomy, and the underlying cause of portal hypertension [6]. Treatment options are largely categorised into medical, endoscopic, radiological and surgical. No randomized studies exist to guide the best management of ectopic varices and the majority of the experience of treatment comes from case reports and small retrospective case series [6]. The treatment options are listed in the table 2.

Treatment modality	
Medical	Vasopressin analogues Beta-blockers
Endoscopic	Band ligation Injection therapy (thrombin or histoacryl) Argon plasma coagulation
Radiological	Embolisation Transjugular intrahepatic portosystemic shunt (TIPS) +/- embolisation Balloon-occluded antegrade transvenous obliteration (BATO) Balloon-occluded retrograde transvenous obliteration (BRTO) Percutaneous transhepatic obliteration (PTO) Transileocolic vein obliteration (TIO)
Surgical	Surgical ligation Surgical resection Liver transplantation

Table 2: *Treatment options for ectopic varices.*

Conclusion

Ectopic variceal bleeding is rare and therefore, high index of suspicion is needed for those with ongoing features of gastrointestinal bleeding. Strong suspicion of index is needed for diagnosis which can lead to early intervention.

Ethics Approval

Not applicable.

Consent from Patient

A verbal consent had been obtained from the patient.

Competing Interests

None.

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Author's Contributions

NMT and LK drafted the manuscript. WYL provided the radiological images and oversee the content of the manuscript relevant to the radiological intervention. NNT corrected and finalised the manuscript prior to submitting the manuscript on behalf of the co-authors.

Manuscript Implication Statement

This case report delves into the management of ectopic variceal bleeding. It highlights the importance of investigating further in those with suspected gastrointestinal bleeding using modalities and intervention other than endoscopic management.

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