

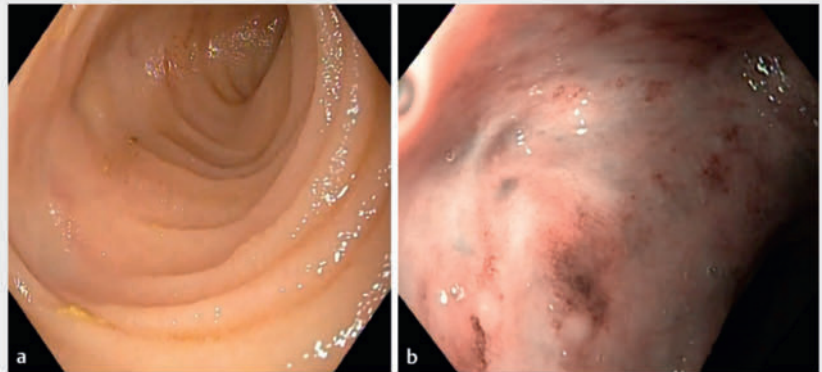
Bleeding parastomal varices in a case of decompensated cirrhosis with tubercular abdominal cocoon: endoscopic ultrasound-guided angioembolization with coil and glue to the rescue



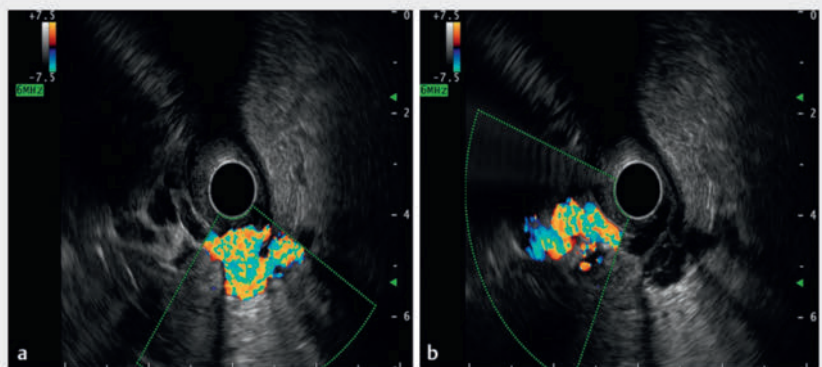
► **Fig. 1** Computed tomography with angiography revealed cirrhosis of the liver (not shown), clustered small-bowel loops encapsulated in a thick membrane-like sac in the mid abdomen (abdominal cocoon), and mild ascites, with two dilated vascular channels (varicosities), going toward the stoma site, involving the bowel wall of the ileostomy.

A 52-year-old man with a 5-year history of alcohol-related decompensated cirrhosis presented with a stomal bleed, and postural symptoms for 15 days. He was diagnosed with abdominal cocoon with intestinal obstruction 2 years previously, for which he underwent ileostomy and received modified antitubercular therapy.

On admission, his vital signs were stable and investigations revealed low hemoglobin (4.2 gm/dL), raised bilirubin (4.3 mg/dL), with normal creatinine. After initial resuscitation with blood transfusions, he underwent esophago-gastroduodenoscopy, which revealed obliterated esophageal varices. Computed tomography with angiography (CTA) showed features of cirrhosis, abdominal cocoon, and multiple varicosities at the stomal site (► **Fig. 1**). Stoma site endoscopy revealed a normal efferent limb, hyperemia erosions in the afferent limb, but no definite bleeding site or visible varix (► **Fig. 2**). Radial endoscopic ultrasound (EUS) through the stoma showed two vascular channels with Doppler flow, suggestive of varices (► **Fig. 3**). As the patient was unsuitable for transjugu-



► **Fig. 2** Stoma site endoscopy. **a** Normal efferent limb. **b** Afferent limb showing hyperemia erosions but no definite bleeding site or visible varix.

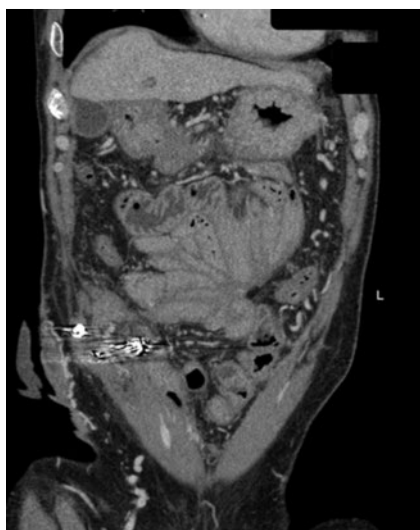


► **Fig. 3** Radial endoscopic ultrasound through the stoma site revealed two vascular channels with positive Doppler flow, suggestive of varices.

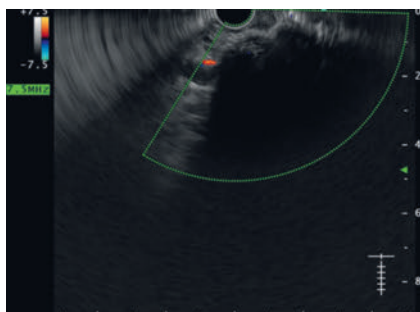
lar intrahepatic portosystemic shunt (TIPS) owing to previous episodes of hepatic encephalopathy, a multidisciplinary team discussion took place, and EUS-guided angioembolization was planned for stomal varices management. Varices were localized using a linear echoendoscope (GIF UCT180; Olympus, Tokyo, Japan), punctured with a 19-G needle (EZ Shot3 Plus; Olympus, Tokyo, Japan), and the position confirmed with blood aspiration. Angioembolization of the varix was performed by deploying a

Nester coil (10 mm × 7 cm; Cook Medical, Bloomington, Indiana, USA) followed by injection of 2 mL cyanoacrylate glue, and obliteration was confirmed using Doppler flow; the varix feeder vessel was similarly treated (► **Video 1**).

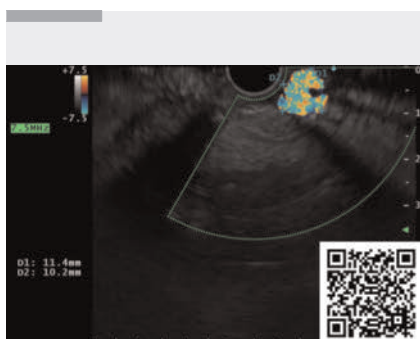
At 1-year follow-up, there were no further episodes of stomal bleeding, and hemoglobin had increased to 9.2 gm/dL. Repeat CTA (► **Fig. 4**) and EUS with Doppler (► **Fig. 5**) revealed obliterated stomal varices (no color flow on Doppler) with coils noted in situ.



► **Fig. 4** Follow-up computed tomography with angiography revealed obliterated stomal varices with coil noted in situ; also noted were underlying features of liver cirrhosis and mid-abdomen tubercular cocoon.



► **Fig. 5** Follow-up endoscopic ultrasound showed obliterated vascular channels (stomal varices), with coils in situ, and no color flow on Doppler.



► **Video 1** Endoscopic ultrasound-guided angioembolization using coil and cyanoacrylate glue of bleeding stomal varices, in a diagnosed case of decompensated cirrhosis with tubercular abdominal cocoon.

Bleeding stomal varices account for only 5% of bleeding ectopic varices (1%–5% of all cases) [1] and are a source of great morbidity (13%) and mortality (3%–4%) [2,3]. Our index case was ineligible for TIPS and could not afford liver transplantation. EUS-guided angioembolization allows localization of varices and perforator veins, direct delivery of coils and glue into the varix, and confirmation of obliteration of flow using Doppler [2–5], making it a safe and effective modality for management of stomal varices, as shown in our index case.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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