Massive lower gastrointestinal bleed due to rectal varix

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Introduction

Massive lower gastrointestinal bleeding is an important medical emergency. Among the causes of lower gastrointestinal bleed, variceal bleeding due to rectal varices is rare. Rectal varices frequently develop in patients with portal hypertension and represent porto-systemic collaterals. We present a case of bleeding rectal varices in a patient with extrahepatic portal vein obstruction that was managed by *N*-butyl-2-cyanoacrylate injection, which was obliterated as documented on endosonography.

Case details

A 26-year-old male patient presented with massive lower gastrointestinal bleeding. On examination, he was pale with splenomegaly, but hemodynamically stable. His haemoglobin was 3.8 g/dL, and other blood investigations were in the normal range. Packed red blood cells were transfused. Abdominal imaging showed splenomegaly with portal cavernoma suggesting the aetiology of extrahepatic portal venous obstruction (EHPVO) and rectal varices (Figs. 1, 2). Colonoscopy showed rectal varices (Fig. 3a) with evidence of blood flow on endosonography (Fig. 4a). Two millilitres of *N*-butyl-2-cyanoacrylate was injected

into rectal varices with no post procedural complications (Fig. 3b, c; Video 1 of Electronic supplementary material). The bleeding had stopped. Three days after injection, repeat sigmoidoscopy showed a small ulcer in the rectum at the injected site. Repeat endorectal ultrasound showed obliteration of the varices and their feeding vessels, with evidence of glue seen in the varix (Fig. 4b). The patient is under follow-up for 3 months without any re-bleeding. His hypercoagulation work-up including protein C, protein S levels, antiphospholipid antibodies, factor V Leiden levels was negative.

Discussion

Rectal varices result from dilatation of submucosal veins that extend from the dentate line proximally into the rectum, and represent the porto-systemic collaterals between

Fig. 1 CT angiography showing splenomegaly with portal cavernoma

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Fig. 2 Contrast enhanced computed tomography showing the rectal varix and feeder vessel

the superior rectal vein flowing into the inferior mesenteric vein, and the middle and inferior rectal veins draining into the internal iliac vein. Rectal varices should be differentiated from haemorrhoids, which are not seen in the rectum, and do not represent porto-systemic collaterals [1]. The prevalence of rectal varices in portal hypertension varies from 3.6 to 78%, and there is no difference in prevalence between cirrhotic and non-cirrhotic patients [2]. Bleeding from colorectal varices is rare: the incidence being 1–8% [2], but may be life threatening. Detection of rectal varices in patients with portal hypertension does not always warrant therapy as the chances of bleeding are low. Diagnosis of rectal varices is most commonly done by endoscopy, but other methods like endoscopic ultrasound, computed tomographic angiography, magnetic resonance venography and inferior mesenteric venography have been used. After

Fig. 3 **a** Endoscopic vision of the rectal varix. **b** Endoscopic injection of glue into the rectal varix. **c** Post injection appearance of the rectal varix

Fig. 4 **a** Endosonography showing the rectal varix with signal on Doppler. **b** Endosonography showing no signal on Doppler post injection and echogenic material within the rectal varix

the initial resuscitation with fluids, transfusion of packed red blood cells and fresh frozen plasma, vitamin K administration, use of a stool softener, somatostatin analogues and systemic vasoconstrictors like terlipressin have been tried to control the bleeding. Definitive therapy for bleeding rectal varices can be endoscopic, radiological or surgical therapies. Endoscopic options include endoscopic band ligation, endoscopic sclerosant or *N*-butyl-2-cyanoacrylate (glue) injection. *N*-butyl-2-cyanoacrylate, a tissue adhesive, which rapidly polymerizes upon contact with living tissues and forms a plug. Few cases of endoscopic glue injection have been reported to control colorectal variceal bleeding [3, 4]. We preferred using glue over band ligation because the rectal varix was large, and if the entire varix cannot be banded there will be a risk of causing a wide defect in the varix after sloughing of the band, rendering the banding technique unsafe for large rectal varices. Moreover, after EVL, the chances of recurrence of varices and re-bleeding are high [5]. Radiological interventions like transjugular intrahepatic porto-systemic shunting (TIPS), double balloon-occluded embolotherapy (DBOE), and modified percutaneous transhepatic obliteration of the inferior mesenteric vein have been used. Surgically, techniques like porto-systemic shunting, ligation of

the inferior mesenteric vein and rarely colectomy have been performed to control bleeding.

Conflict of interest There is no conflict of interest to any of the authors.

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