

Successful Treatment of Bleeding Rectal Varices with Balloon-Occluded Antegrade Transvenous Obliteration

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ABSTRACT

We report the first described case in the United States of balloon-occluded antegrade transvenous obliteration (BATO) performed in a cirrhotic patient with recurrent bleeding from large rectal varices. This is a novel interventional radiology approach to treat bleeding rectal varices. Our patient was a poor candidate for transjugular intrahepatic portosystemic shunt and endoscopic band ligation. Successful BATO produced complete resolution of rectal varices and no further rectal bleeding. There are no established guidelines for the management of rectal varices. We demonstrate that the BATO technique is a viable option to treat recurrent bleeding due to rectal varices.

INTRODUCTION

Rectal varices are portosystemic collaterals that form as a complication of portal hypertension. Their prevalence has been estimated at 38–56% of patients with cirrhosis and 63–94% in those with extrahepatic portal vein obstruction.^{1,2} Although rectal variceal bleeding is relatively uncommon (0.5–5%), it can be fatal.³ There are currently no formal guidelines for the management of bleeding rectal varices. Collaboration with interventional radiology colleagues is necessary in the management approach to rectal varices.

CASE REPORT

A 51-year-old man with decompensated cirrhosis presented with hematochezia for 2 days and hemoglobin 7.4 g/dL. Bleeding resolved spontaneously and was attributed to hemorrhoids that were seen on colonoscopy 6 months prior. He denied constipation. A week later, the patient experienced recurrent hematochezia prompting re-admission. A sigmoidoscopy revealed large rectal varices with no stigmata of recent bleeding, hence no intervention was attempted. Transjugular intrahepatic portosystemic shunt (TIPS) was contraindicated given the history of hepatic encephalopathy.

Six months later, the patient had recurrent hematochezia and was referred for endoscopic variceal ligation. The procedure was aborted because the varices were too large for ligation (Figure 1). The patient was then referred to interventional radiology for balloon-occluded antegrade transvenous obliteration (BATO). Under ultrasound guidance, the right portal vein was accessed percutaneously and portography demonstrated antegrade flow down the inferior mesenteric vein and superior rectal vein (Figure 2). An occlusion balloon catheter was advanced into the superior rectal vein and inflated. Injection of contrast demonstrated filling of enlarged rectal varices without drainage into the systemic system via internal iliac vein. Sclerosing treatment foam (20 mL) was instilled through a microcatheter into the rectal varices (Figure 3). Sodium tetradecyl sulfate foam was made with a combination of air, 3% sodium sotradecol, and lipiodol in a 3:2:1 ratio. With the occlusion balloon inflated, the mixture was allowed

ACG Case Rep J 2018;5:e20. doi:10.14309/crj.2018.20. Published online: March 14, 2018.

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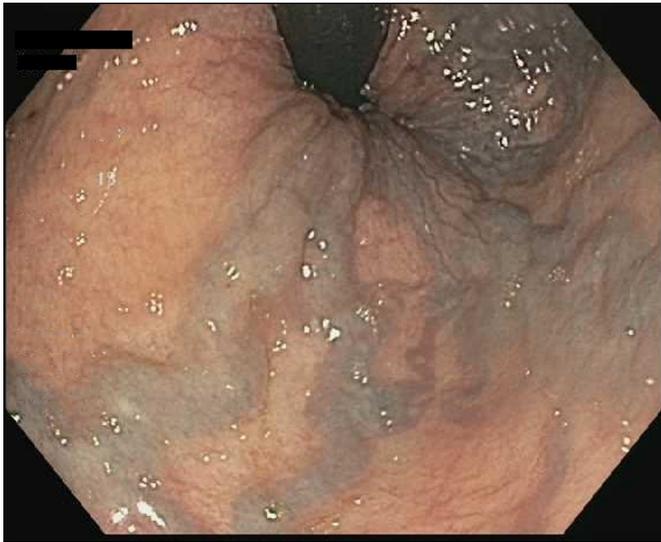


Figure 1. Sigmoidoscopy showing large rectal varices before the balloon-occluded antegrade transvenous obliteration (BATO) procedure.

to dwell for 1.5 hours. Stagnation of sclerosant was demonstrated under fluoroscopy. We elected to perform coil embolization of the proximal superior rectal vein to ensure no washout (Figure 4). After the procedure, a computed tomography (CT) scan showed sclerosed rectal varices. No immediate complications were noted. At the 6-month follow-up, the patient had no recurrent rectal bleeding, and sigmoidoscopy confirmed variceal eradication (Figure 5).

DISCUSSION

Several interventions have been described in the literature for the management of bleeding rectal varices. Endoscopic injection sclerotherapy (EIS) and endoscopic band ligation,



Figure 3. Ultrasound showing 20 mL sclerosing foam instilled through a microcatheter into the rectal varices (arrow).

first described in the management of esophageal and gastric varices and later for rectal varices, have been shown to be efficacious. In a study comparing EIS and endoscopic band ligation, recurrence rate and complications were fewer in EIS; recurrence rate of 24% was seen in the EIS group at 1-year follow-up.⁴ Given the high recurrence of rectal varices after EIS, this was not attempted in our patient. Endoscopic ultrasound-guided coiling has been described in case reports for the



Figure 2. Ultrasound showing percutaneous transhepatic access of the right portal vein (red arrow) with antegrade flow down the inferior mesenteric vein (white arrow) and superior rectal vein.



Figure 4. Ultrasound showing coil embolization of proximal superior rectal vein post-sclerotherapy.

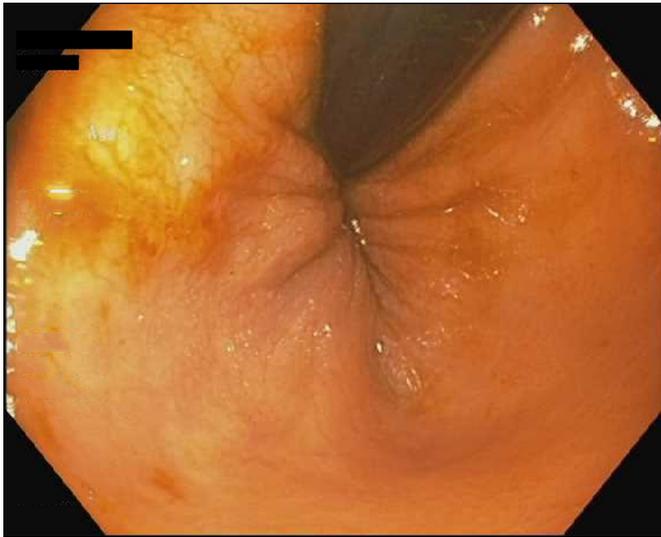


Figure 5. Sigmoidoscopy 6 months after BATO showing eradicated rectal varices.

management of rectal varices as well, and some suggest that less sclerosant needs to be injected because the coils occupy some of the variceal volume, although the benefit remains theoretical.⁵ TIPS is also an effective minimally invasive treatment that acts by decompression of the rectal varix, although relative contraindications include severe right-heart failure, end-stage liver disease, and hepatic encephalopathy.¹

Our case highlights a challenging scenario in which rectal varices were too large for endoscopic band ligation, glue is not an available treatment option, and hepatic encephalopathy precludes TIPS. We introduce a novel and effective therapeutic approach to bleeding rectal varices. The BATO technique for rectal varices has only been described in case reports in the literature, mainly from Asia.³ We present another successful and uncomplicated application of this technique and the first described case in the United States in a patient with few alternative treatment options. Collaboration with interventional radiologists expands the therapeutic armamentarium in patients with rectal varices.

In our case, CT scans were obtained after the procedure to assess clinical response, specifically whether the varices were decompressed after the intervention. While not protocol, we

recommend follow-up CT scans to evaluate whether the varices remain deflated.

Previous literature demonstrates the success of BATO and balloon-occluded retrograde transvenous obliteration (BRTO) in the complete obliteration of gastric varices, but the application of this technique to rectal varices has not been studied.⁶ Prior studies have evaluated BRTO for gastric varices, and 2.2-19.4% of the cases studied required BATO; while BATO by itself has been successful for treatment of gastric varices in 44-100% of cases, when combined with the BRTO approach it is rarely unsuccessful.⁷ Further studies are needed to validate the long-term safety and efficacy of this technique for the management of rectal varices.

DISCLOSURES

Author contributions: All authors contributed equally to the manuscript. D. Rebello is the article guarantor.

Financial disclosure: None to report.

Informed consent was obtained for this case report.

Received August 11, 2017; Accepted January 4, 2018

REFERENCES

1. Al Khallofi K, Laiyemo AO. Management of rectal varices in portal hypertension. *World J Hepatol.* 2015;7(30):2992-8.
2. Chawla Y, Dilawari JB. Anorectal varices: Their frequency in cirrhotic and non-cirrhotic portal hypertension. *Gut.* 1991;32:309-11.
3. Minamiguchi H, Kawai N, Sato M, et al. Successful treatment of endoscopically unmanageable rectal varices by balloon-occluded antegrade transvenous sclerotherapy followed by microcoil embolization. *J Vasc Interv Radiol.* 2013;24(9):1399-403.
4. Misra SP, Dwivedi M, Misra V, Dharmani S, Kunwar BK, Arora JS. Colonic changes in patients with cirrhosis and in patients with extrahepatic portal vein obstruction. *Endoscopy.* 2005;37:454-59.
5. Messallam AA, Kumbhari V, Saxena P, Azola AM, Kalloo AN, Khashab MA. Large bleeding rectal varices treated with endoscopic ultrasound-guided coiling and cyanoacrylate injection. *Endoscopy.* 2014;46(S1):E28-29.
6. Okazaki H, Higuchi K, Shiba M, et al. Successful treatment of giant rectal varices by modified percutaneous transhepatic obliteration with sclerosant: Report of a case. *World J Gastroenterol.* 2006;12:5408-11.
7. Saad WEA, Sze DY. Variations of balloon-occluded retrograde transvenous obliteration (BRTO): Balloon-occluded antegrade transvenous obliteration (BATO) and alternative/adjunctive routes for BRTO. *Semin Interv Radiol.* 2011;28(3):314-24.