

Pulmonary Glue Embolization after Endoscopic Treatment of Bleeding Sigmoid Colon Varices

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CASE REPORT

A 58-year-old cirrhotic man presented with painless severe hematochezia. Physical examination revealed pallor, pitting pedal edema, and palpable hepatosplenomegaly. Sigmoidoscopy after resuscitation revealed a tortuous, bluish structure protruding into the lumen, suggestive of a large sigmoid colon varix with stigmata of recent hemorrhage and white nipple sign (Figure 1). Undiluted *N*-butyl-2-cyanoacrylate glue (2 mL) was injected into the varices, and an intravenous (IV) bolus of terlipressin (2 mg) achieved hemostasis. Six hours later, the patient developed shortness of breath, severe bilateral pleuritic chest pain, and hypoxemia. Plain x-ray of the chest revealed acute, bilateral, subsegmental, linear, hyperdense shadows within both main pulmonary arteries and branches, suggestive of glue embolization (Figure 2). The patient was successfully managed conservatively with high-flow oxygen and intensive-care monitoring. Two weeks later, repeat sigmoidoscopy revealed complete obliteration of the sigmoid colon varix.

Colonic varices are associated with portal hypertension due to liver cirrhosis or, rarely, due to other conditions associated with portal vein obstruction. The rectum is the most common site of colonic varices and represents a portosystemic collateral pathway between the superior rectal veins of the inferior mesenteric system and the middle inferior rectal veins of the iliac system. Isolated varices of the colon are rare, and less than 1% of them bleed.¹ Colonoscopy is the investigation of choice, and varices can be visualized as dilated tortuous venous channels. However, colonic varices may occasionally be mistaken for polypoid or tumor.

Because of the infrequent presentation of bleeding ectopic varices in the colon, the ideal therapeutic intervention is

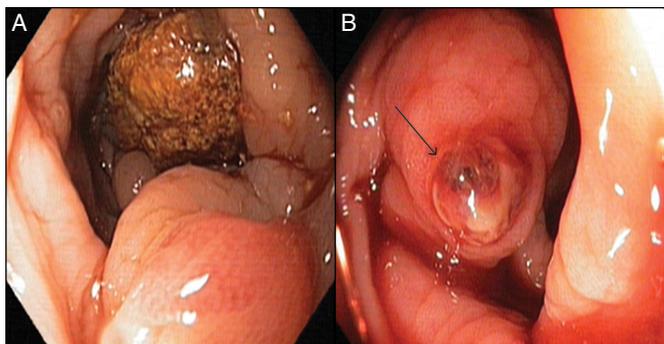


Figure 1. Sigmoidoscopy showing (A) the large sigmoid colon and (B) the presence of a white nipple sign over the sigmoid colon varix.

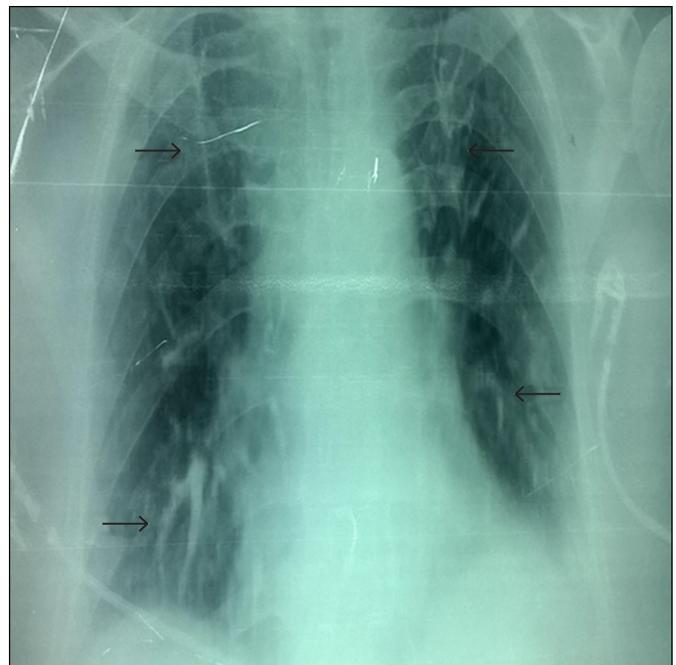


Figure 2. Plain chest x-ray showing bilateral, subsegmental, linear, hyperdense pulmonary opacities, which are suggestive of glue embolization.

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unknown. There are multiple available therapies to treat active ectopic variceal bleeding or areas with high-risk stigmata. These include transhepatic IV portosystemic shunt (TIPS), balloon-occluded retrograde transvenous obliteration of the portacaval shunt, endoscopic variceal ligation, somatostatin infusion, argon plasma coagulation, histoacryl injection, and coil embolization. Although there are reports of successful endoscopic therapy and TIPS, the ideal treatment of colonic varices is not well defined.² In the event of active variceal bleeding or stigmata of recent bleeding, endoscopic management with band ligation (EBL) or endoscopic sclerotherapy or glue injection is indicated. While the therapeutic efficacy of EBL and sclerotherapy are similar, higher recurrence rates have been reported with EBL.³ *N*-butyl-2-cyanoacrylate is a tissue glue monomer that instantly polymerizes and solidifies upon contact with blood. Glue injection is potent, requires fewer sessions for obliteration, and has been shown to be effective in treating bleeding from ectopic duodenal and rectal varices.⁴ Pulmonary embolism is a rare and potentially serious complication of glue therapy (0.5–1%), with a higher risk in the presence of a high-flow large portosystemic shunt and high-volume glue injections (more than 1 mL per injection).⁵ A high index of suspicion for embolism in the setting of tachycardia, chest pain, or hypoxia after endoscopic glue therapy is required.

DISCLOSURES

Author contributions: A. Jindal wrote and edited the manuscript, and is the article guarantor. CA Philips provided the endoscopy images.

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