Large fundal varices: to glue or not to glue?

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A 45-year-old man was admitted with a one-day history of hematemesis and melena. He was had been followed up for chronic hepatitis C-related cirrhosis and had been admitted previously for management of spontaneous bacterial peritonitis. He was hemodynamically stable and general physical examination was noncontributory except for mild icterus. Investigations revealed hemoglobin 9.6 g/L, platelet count 66,000/mm³, INR 1.6, serum albumin 26 g/L, alanine transaminase 132 IU/mL, aspartate transaminase 141 IU/mL and serum bilirubin 53 mmol/L (normal <24). Abdominal ultrasound and doppler scan revealed cirrhotic liver, splenomegaly and patent hepatic and portal veins. Urgent gastroscopy revealed a large fundal varix (IGV1) with stigmata of recent bleed. He was planned for glue injection. As we injected 1 mL of glue (0.5 mL n-butyl cyanoacrylate mixed with 0.5 mL lipiodol) into the fundal varix, there was active spurting (Fig. 1). The patient developed significant bleeding and became hypotensive. He was stabilized with intravenous fluids, blood transfusion and terlipressin. An attempt was made to radiologically embolize the gastrorenal shunt by Balloon Retrograde Transvenous Obliteration (BRTO). A large gastrorenal shunt was identified and embolization with absolute alcohol was attempted after balloon occlusion of the gastrorenal shunt (Fig. 2B). Four hours later a repeat venography revealed rupture of the balloon with minimal obliteration of collaterals. As the patient was a poor risk candidate for surgical devascularization, a second attempt was made endoscopically and 3 mL of glue (1.5 mL n-butyl cyanoacrylate mixed with 1.5 mL lipiodol) was injected. We confirmed hardening of varix with catheter probe and the procedure was uneventful (Fig. 2B). Post procedure, the patient remained stable and was discharged a week later. He is asymptomatic on follow up after 3 months.

Gastric varices account for about one-fifth of cases of variceal bleed and can result in severe bleeding with high mortality [1]. Treatment options for fundal variceal bleeding include endoscopic injection therapy with n-butyl cyanoacrylate, radiological measures (BRTO and transjugular intrahepatic portosystemic shunt) and surgical devascularization [1,2]. Recently, use of endoscopic ultrasound-guided therapy with coils has also been advocated [3]. Various studies have recommended different volumes of glue, varying from 0.5-4 mL of glue per session with each injection consisting of not more than one mL (glue and lipiodol combined) [1-4]. In the index case, during the first session of glue injection, immediately after injection, the patient developed significant bleeding. Unfortunately, BRTO also failed in the index case. In a recent series of 41 patients who underwent BRTO, rupture of the balloon leading to technical failure of the procedure has been described in about 14% of patient [5]. As a salvage measure we injected a relatively large volume of glue (three times the usual dose per injection) to control the bleeding and this was successful. We wish to emphasize that, even in cases where initial endoscopic and radiological measures had failed, a repeat endoscopic glue injection can be attempted, especially in a large fundal varix, which can be lifesaving. Larger volumes per injection (up to 1.5 mL of glue) can result in complete obliteration of fundal varices without any significant risk of embolization.

References


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Conflict of Interest: None

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Received 11 March 2014; accepted 18 March 2014