

Loop combined endoscopic clip and cyanoacrylate injection to treat severe gastric varices with spleno-renal shunt

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Endoscopic cyanoacrylate injection has been successfully applied in the management of gastric variceal bleeding and is recommended as the first line of treatment in China.¹ Systemic embolism is one of the most severe and fatal adverse events associated with cyanoacrylate injection when used to treat severe gastric varices with a spleno-renal or gastric-renal shunt.² Here, we report a case in which we used a new method to obstruct severely isolated gastric varices with a massive spleno-renal shunt and reduce embolic risk.

A 53-year-old woman who had experienced GI hemorrhage weeks prior and had undergone subtotal gastrectomy and Billroth II anastomosis for obscure hemorrhagic shock 18 years earlier was admitted to our hospital. Physical examination showed that the spleen was located 4 cm below the rib. Laboratory tests showed that red blood cell, white blood cell, and platelet counts were all decreased. CT showed a large gastric varix (yellow arrow) with a massive spleno-renal shunt (green arrow) (Fig. 1), and upper endoscopy revealed a gastric fundal varix approximately 12 mm in

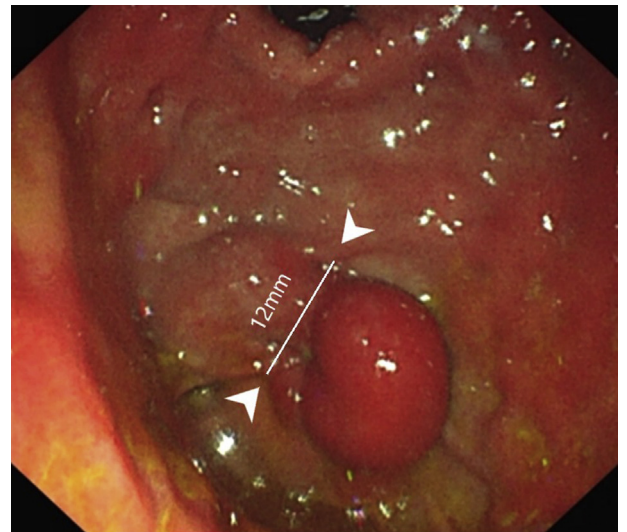


Figure 2. Upper endoscopy revealed a gastric fundal varix measuring approximately 12 mm.

diameter (Fig. 2). The patient refused therapy other than prophylactic endoscopic therapy for recurrent bleeding.

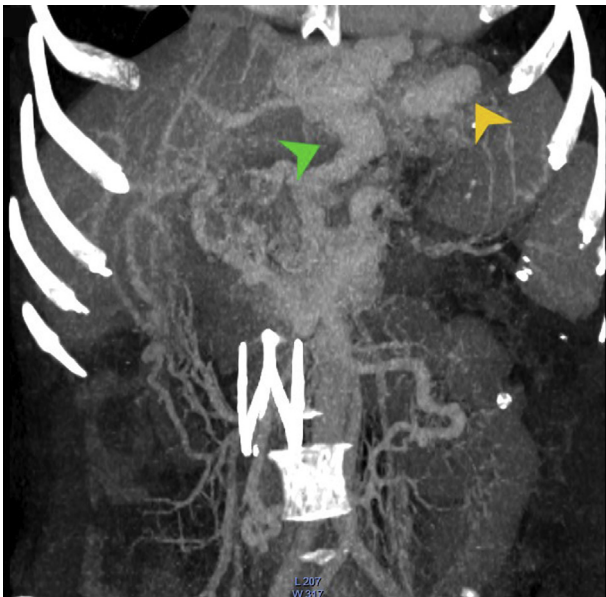


Figure 1. CT scan showed a large gastric fundal varix (yellow arrow) with a massive spleno-renal shunt (green arrow).

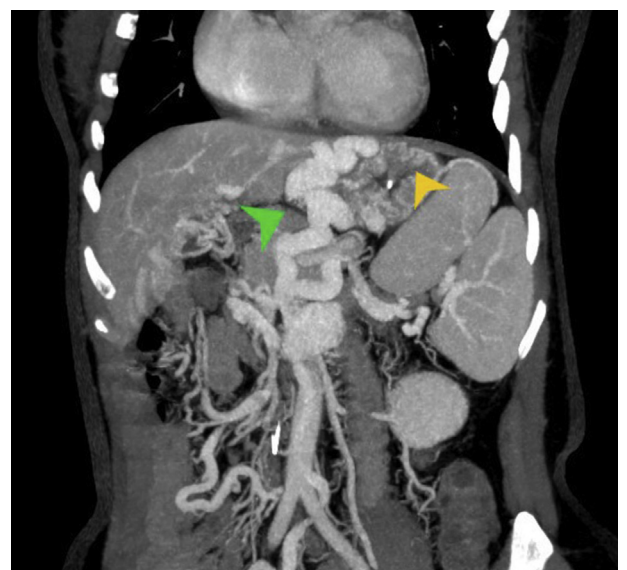


Figure 3. One week later, CT scan showed the obstructed gastric varix (yellow arrow) and the spleno-renal shunt (green arrow).

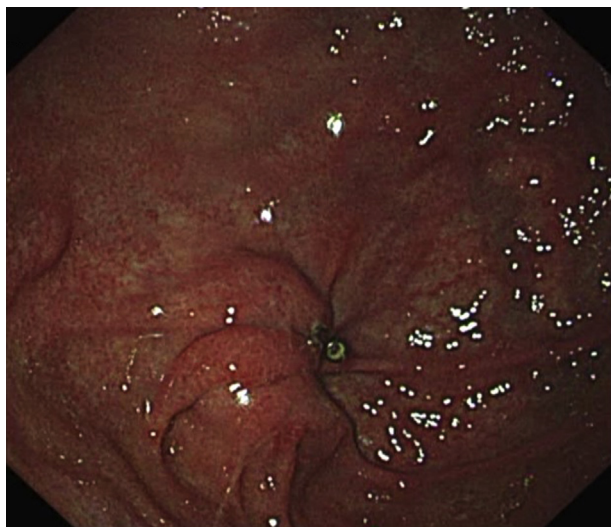


Figure 4. Upper endoscopy revealed the fundal varix was coagulated 3 months later.

A clip was placed in the middle of the varix for 2 purposes: to reduce partial blood flow and to serve as a fixed point to help the loop encircle the afferent vein. We contracted the loop gradually and slowed suction simultaneously to partially obstruct further blood flow. After releasing the loop, we injected a mixture of 2 mL lauromacrogol, 1 mL cyanoacrylate, and 2 mL sodium chloride solution into the ligated vein to stop further blood flow. We injected the mixture into the afferent vein 3 times and then injected it into the efferent vein to thoroughly block blood flow.

One week later, endoscopy showed that the gastric fundal varix had been obstructed successfully, and a CT scan showed that the gastric varix (yellow arrow) and spleno-renal shunt (green arrow) had also lessened (Fig. 3). Moreover, no systemic embolism occurred. There was no bleeding during the half-year follow-up. At 3 and 6 months later, endoscopy (Figs. 4 and 5) and



Figure 5. Endoscopy showed the fundal varix had disappeared gradually by 6 months later.

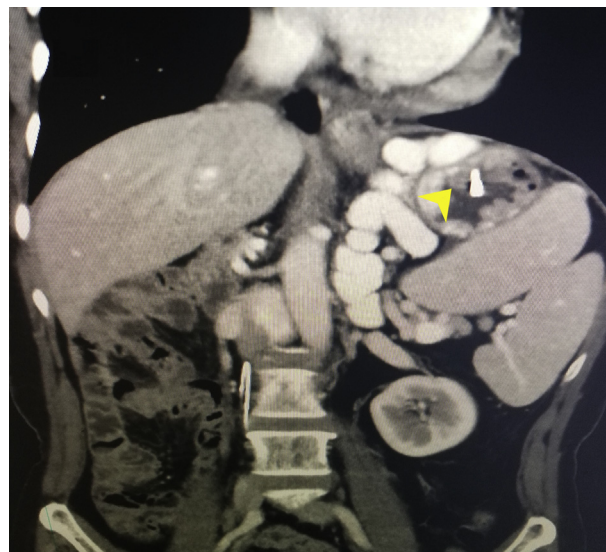


Figure 6. CT scan showed fundal varix had disappeared (yellow arrow) by 6 months later.

a CT scan (Fig. 6) showed that the fundal varix had gradually disappeared.

In this case, the novel method of cyanoacrylate injection therapy assisted by loop-combined endoscopic clipping successfully prevented recurrent hemorrhage and reduced the amount of cyanoacrylate used to help avoid fatal embolism. In addition, this method was low cost. Compared with transjugular intrahepatic portosystemic shunt (TIPS) and balloon-occluded retrograde transvenous obliteration (BRTO), which are popular therapies in East Asia, our new method does not need to strictly select patients and can avoid radioactive damage to operators. TIPS and BRTO are both interventional radiologic treatments, and appropriate patient selection is critical; TIPS is rarely used in patients with Child–Pugh class C and those with advanced liver disease, and BRTO is technically feasible only in patients with a known gastroduodenal shunt, accounting for only 85% of patients with gastric varices.³ This suggests that the novel method could be superior in safety to cyanoacrylate injection alone and could be more easily performed than TIPS and BRTO. In addition, it could be less expensive than other invasive therapies. Escorsell et al⁴ reported that TIPS was twice as expensive as endoscopic treatment. In China, surgery for bleeding esophagogastric varices is costly.

There are some limitations to our new method. The gastric varices must be large enough and protrude out of the stomach lumen so that the loop can encircle them; otherwise, the loop cannot be used (Video 1, available online at www.VideoGIE.org).

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviations: BRTO, balloon-occluded retrograde transvenous obliteration; TIPS, transjugular intrahepatic portosystemic shunt.

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