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Abstract

Small bowel varices may be found in less than 5% of patients with suspected small bowel bleeding. These varices are associated with portal hypertension or thrombosis of mesenteric venous vessels and with altered abdominal vascular anatomy with or without prior small bowel surgery. In bleeding small bowel varices, therapeutic options include endoscopic injection of tissue adhesives, endovascular approaches such as balloon-occluded retrograde transvenous or percutaneous obliteration and transjugular intrahepatic portosystemic shunt, and surgical resection. This is a case report of a 53-year-old patient with ethylic liver cirrhosis who presented with severe, life-threatening hematochezia due to small bowel varices. This article is part of an expert video encyclopedia.

Keywords

Balloon enteroscopy; Capsule endoscopy; Cyanoacrylate; Double balloon enteroscopy; Enteroscopy; Ectopic varices; Small bowel; Variceal bleeding; Video.

Video Related to this Article

Video available to view or download at doi:10.1016/S2212-0971(13)70096-7

Technique

- Capsule endoscopy (CE).
- Double-balloon enteroscopy.

Materials

- Capsule endoscope PillCam™ SB2, Given Imaging EMEA, Hamburg, Germany.
- Double-balloon enteroscope (DBE EN-450T5, Fujinon/FujiFilm, Willich, Germany, working channel: 2.8 mm, working length: 2300 mm).
- 0.5 ml of *N*-butyl-2-cyanoacrylate (Histoacryl®, Braun Melsungen, Germany) in a mixture with 0.7 ml Lipiodol® Ultra fluid (Guerbet GmbH, Sulzbach, Germany).
- Injection needle, (needle length 5 mm, Ø 0.7 mm, med-work, Höchststadt/Aisch, Germany).

Background and Endoscopic Procedure

Ectopic varices are defined as large portosystemic venous collaterals occurring anywhere in the abdomen except for the cardiac or esophageal regions. Approximately 5–10% of all ectopic varices are located within the small bowel, distal to the duodenum. This is a rare condition that is diagnosed in less than 5% of patients with suspected small bowel bleeding. Small bowel varices occur in cases with altered abdominal vascular anatomy with or without prior small bowel surgery and in patients with portal hypertension or thrombosis of mesenteric venous vessels. Therapeutic options include

endoscopic injection of tissue adhesives, endovascular approaches such as balloon-occluded retrograde transvenous or percutaneous obliteration and transjugular intrahepatic portosystemic shunt (TIPS), and surgical resection.

Endoscopic treatment approaches were reported using band ligation technique, injection therapies (cyanoacrylate, fibrin glue, and ethanolamine oleate injection), and argon plasma coagulation, but cyanoacrylate might be the preferable technique.

This case reports on a 53-year-old patient who suffered from ethylic liver cirrhosis. The patient presented with severe, life-threatening hematochezia but immediate upper and lower flexible endoscopy did not detect the bleeding source. CE was performed and showed active bleeding in the small bowel and a tubular structure with a fibrin clot in the middle third of the small bowel. Immediately afterward, peroral balloon enteroscopy (BE) was performed and an active bleeding from ectopic varices was identified as suspected by the CE.

It was decided to perform cyanoacrylate injection to embolize the varices under direct endoscopic visualization. Cyanoacrylate was mixed with Lipiodol in a ratio of 0.5–0.7 ml. The varix was punctured and 1.2 ml of the mixture was injected, followed immediately by a second injection of 0.5 ml of distilled water to deliver the entire glue from the catheter into the varix. The needle was then retracted, followed by flushing of the needle with distilled water to keep it patent. After injection of cyanoacrylate, the bleeding stopped. The obliterated varix was visualized with X-ray imaging and computed tomography afterward. At follow-up 1 year later, the glue had been extruded from the varix without further bleeding events.

Key Learning Points/Tips and Tricks

- Ectopic small bowel varices should be considered in a patient with hematochezia and no conclusive bleeding site found in upper and lower flexible endoscopy, especially in patients with a history of portal hypertension and/or abdominal surgery.

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- Cyanoacrylate injection may safely be used to treat variceal bleeding from the small bowel.

Complications and Risk Factors

Complications of cyanoacrylate injection include embolism, infection, and rebleeding. There are case reports of cerebral stroke, portal vein embolization, splenic infarction, coronary emboli, and a series demonstrating nonfatal pulmonary emboli. The complication rate in most patient series with gastric varices is lower than 10% of cases.

Alternatives

We decided to perform CE before BE to localize the bleeding, appraise the character of the bleeding site, and pilot the access route for BE. It might be arguable, though, to omit CE in this setting of a severely bleeding patient and use BE in the first place.

Alternative treatments might be considered and comprise TIPS, balloon-occluded retrograde transvenous or percutaneous obliteration, and surgical resection.

Scripted Voiceover

Time (min:sec)	Voiceover text
0:00	This 53 year old patient with known liver cirrhosis presented with severe hematochezia without any

bleeding source found at upper and lower flexible endoscopy.

0:10	Capsule endoscopy is performed and reveals fresh blood in the small bowel lumen.
0:21	A tubular structure with a fibrin clot is detected.
0:53	Peroral balloon enteroscopy was done to localize the bleeding site within the small bowel and to offer therapeutic options.
1:40	Cyanoacrylate mixed with the contrast medium lipiodol is injected into the varix and the filling of the injection is well seen within the blood vessel.
2:31	The injected glue hardens immediately, which may be seen with tender 'palpation' using a probe.
2:43	After the intervention, bleeding stopped immediately. X-ray and computed tomography imaging reveal the tissue glue within the vessel. One year later, the clot is no more visible on the x-ray image.

Further Reading

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