Successful Endoscopic Ethanol Injection and Clipping Treatment of Ruptured Duodenal Varices

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Dear Editor,

Collaterals developing in regions of the gastrointestinal tract other than the esophagus and stomach are called ectopic varices. The duodenum is the most common site of ectopic varices after the rectum.[1] Duodenal varices (DVs) consist of collaterals between the portal vein and the systemic circulation, and the primary cause is portal hypertension. Treatment of DV bleeding is challenging, with mortality approaching 40%. A standardized treatment for DV rupture has not yet been established. Treatment options include endoscopic varix ligation therapy, sclerotherapy, interventional embolization of the feeding vessels or portosystemic stent shunts, and surgery.[1] These available treatment modalities are presented as case series in the literature. There is no randomized controlled study on this subject yet.

In the case presented here, duodenal varix rupture was successfully treated with ethanol injection followed by clipping. Our case is the first case report in which ethanol injection and clipping were used in the treatment of DV rupture.

Written informed consent was obtained from the patient for the publication of this case report.

CASE PRESENTATION

Our case was a 72-year-old man. He presented to the emergency department with complaints of abdominal pain, nausea, and bloody vomiting. He had a history of chronic liver disease (cirrhosis) for 5 years and had once had hepatic encephalopathy. He had also undergone band ligation three times for esophageal varices and once for duodenal varix bleeding. He was smoking and drinking alcohol. The patient was informed about his medical history, current findings, and disease, and written consent was obtained.

On admission physical examination, Glasgow coma score was 15 and vital signs were stable (body temperature 36.5°C, blood pressure 110/60 mmHg, heart rate 60 beats/min and oxygen saturation 97%). The abdomen was slightly distended and splenomegaly was present. Rectal examination revealed melena.

Initial laboratory evaluation revealed hemoglobin 8.7 g/dL (reference range: 13.0-17.5), hematocrit 27% (40%-50%), leukocyte count 9 × 10^9/L (4-11 × 10^9/L), platelets 141 × 10^9/L (150-400 × 10^9/L), prothrombin time 11.8 seconds (9-13 seconds), activated partial thromboplastin time 27.1 seconds (25-35 seconds), and international normalized ratio 1.1. Liver, renal, and electrolyte parameters were within normal limits.

Imaging showed cirrhotic liver and splenomegaly on abdominal ultrasonography.

Treatment of the patient was started with fluid resuscitation and blood replacement therapy with wide bore peripheral venous access. Urgent esophagogastroduodenoscopy was performed. Varicose veins were observed in the esophagus and sclerotherapy was performed. Gastroscopy revealed no fundal varices. Diffuse erythema was observed in the antrum and angulus wall and mucosa. Bulbus mucosa was normal and varices were observed in the second portion of the duodenum, opposite to the bulb. We detected massive bleeding from a ruptured varicose

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vein in the horizontal part of the duodenum. Hemostasis was achieved by injecting ethanol into the bleeding site. Then endoscopic varicose vein clipping was applied to the varicose vein area. No bleeding was observed after the procedure. All endoscopic treatments were performed by an experienced endoscopist. There was no bleeding and hemodynamic instability during follow-up. No decrease in hemoglobin value was observed. The patient was discharged after 4 days. No bleeding was reported during 1 year of regular follow-up in the gastroenterology outpatient clinic.

DISCUSSION

Duodenal varices are rare. Rupture is associated with severe hemodynamic instability and high mortality.[1] Duodenal varices may cause increased bleeding due to portal blood flow, making treatment more difficult. There is no definitive treatment strategy for DVs. Appropriate treatment is selected according to the hemodynamic status of the patient. The goal is to achieve hemostatic stabilization and radical treatment to prevent recurrence.

In the literature, treatment strategies for DVs are still limited to case series. It is unclear which treatment strategy is superior for DVs.[1] There are cases in the literature in which sclerotherapy using N-butyl-2-cyanoacrylate injection was successfully used in the treatment of DV bleeding.[2] In a case report by Seo et al, sclerotherapy with endoscopic injection of ethanolamine oleate was performed for the treatment of DV rupture.[3] Chen et al[4] achieved hemostasis by applying cyanoacrylate injection after a metal clip to the ruptured DV. In our case, sclerotherapy was performed with ethanol injection, followed by clip application, and the treatment was successful. While endoscopic alcohol injection proved effective in controlling duodenal varix bleeding in this case, it is important to acknowledge the potential risks and limitations of alcohol injection, including mucosal necrosis, perforation, ulceration, and local pain. Although this method is effective, it is very important to be careful in patient selection and to follow the patient closely. There are randomized controlled studies on esophageal and gastric varices treated with alcohol injection.[5] There is no such study for DV. Since cyanoacrylate, which is commonly used for DV, was not available in our hospital, ethanol injection was applied as an alternative. Patient follow-up is important because hemodynamic deterioration may be observed after DV treatment. No complications were observed during the monthly follow-up of our patient.

This case demonstrates that endoscopic alcohol injection followed by hemostatic clip application can effectively achieve hemostasis. It represents a practical and viable alternative, particularly in settings where cyanoacrylate therapy is unavailable.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

Informed Consent: Written informed consent was obtained from the patient who agreed to take part in the study.

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