

## Introduction

- Variceal bleeding is a life-threatening complication of portal hypertension (PH), affecting 25-35% of cirrhosis patients.<sup>1,2</sup>
- Duodenal varices are uncommon, accounting for 0.4% of variceal bleeds from PH, but are associated with poor outcomes.<sup>2</sup>
- **Presented is a rare case of a bleeding duodenal varix (DV) causing hemodynamic instability in a patient with cirrhosis.**

## Case Presentation

- A 42-year-old male with polysubstance abuse and alcoholic cirrhosis complicated by PH and esophageal varices (EV) presented via emergency medical services after being found down in the street.
- The patient was hypotensive, tachycardic to the 140s, and febrile to 40.4 degrees Celsius.
- Physical exam was remarkable for blood covering his lower extremities and a large blood clot in his rectum.

## Clinical Evaluation & Treatment

- Labs were significant for a hemoglobin of 6.7 g/dl, platelet count of 68 K/MM<sup>3</sup>, white blood count of 15.6, bilirubin of 4.4 mg/dL, ammonia of 76 umol/L, and lactic acid of 4.2.
- **Triphasic computed tomography** of the abdomen and pelvis with intravenous (IV) contrast showed cirrhotic liver morphology and thickening of the ascending colon.
- Two units of packed red blood cells, IV pantoprazole, and IV octreotide were given.
- An emergent **esophagogastroduodenoscopy** demonstrated PH gastropathy, non-bleeding EV, and a 5-millimeter bleeding DV (*figure 1a*).
- To achieve temporary hemostasis, two **clips** were placed over the DV with plan for Interventional Radiology (IR) to definitively control bleeding with embolization (*figure 1b*).
- **Abdominal ultrasound with Doppler** demonstrated a patent portal venous system.
- **Venogram** showed DV fed by inflow from the superior mesenteric venous circulation with outflow via an enlarged right gonadal vein.
- **Retrograde coil embolization** resulted in complete resolution of bleeding (*figure 1c*).

## Discussion & Conclusions

- Common sites of variceal bleeding include the esophagus and stomach.<sup>3</sup>
- Though DVs are rare, it is essential to gain consensus on the optimal approach to treatment, as the mortality rate is up to 40% due to origination of DVs in the deep serosal layer and high vascularity of the duodenum.<sup>3</sup>
- In this case, clips were used to achieve hemostasis followed by embolization for definitive cessation of bleeding.
- Clips also served as a landmark for IR to target during the venogram and coil embolization.
- Clips on their own may not be sufficient to control duodenal bleeding as there is risk of inadequate occlusion of vessels or tissue perforation.
- **This multimodal approach offers an effective path to managing bleeding DV.**

## References

- <sup>1</sup>Habib A, Sanyal AJ. Acute variceal hemorrhage. *Gastrointest Endosc Clin N Am.* 2007 Apr;17(2):223-52. v. doi: 10.1016/j.giec.2007.03.005. PMID: 17556146.
- <sup>2</sup>Malik, Anam MD; Aleem, Abdul MD; Nellis, Eric MD; Shah, Hiral MD Duodenal Varices: A Rare Cause of Gastrointestinal Bleeding, *American Journal of Gastroenterology*: October 2017 - Volume 112 - Issue - p S1032-S1034
- <sup>3</sup>Park SB, Lee SH, Kim JH, Lee HJ, Jang SP, Lee JN, Hwang JH. Successful treatment of duodenal variceal bleeding by endoscopic clipping. *Clin Endosc.* 2013 Jul;46(4):403-6. doi: 10.5946/ce.2013.46.4.403. Epub 2013 Jul 31. PMID: 23964340; PMCID: PMC3746148.

## Imaging



Figure 1a



Figure 1b



Figure 1c

**Figure 1a.** 5-millimeter bleeding duodenal varix, as indicated by the arrow.

**Figure 1b.** Duodenal varix after placement of hemostatic clips, as indicated by the arrow.

**Figure 1c.** Venogram with retrograde coil embolization of the duodenal varix.