

# Enteroligation with a single balloon enteroscope for small bowel varices in portal enteropathy

## Introduction

A 34-year-old woman with history of primary biliary cirrhosis and portal hypertension was admitted a hospital with melena and hemodynamic instability. She underwent EGDs presenting duodenal varices. Sclerotherapy was performed. Patient remained hemodynamically unstable and melena reason why she was transferred to our National Center for Metropolitan liver transplantation in air ambulance. She required ICU admission (hematocrit 23%, hemoglobin 4g/dL) and blood transfusions. Percutaneous intrahepatic portosystemic shunt was planned being failed by hepatic fibrosis. Anterograde single balloon enteroscopy (SBE) at about 150 cm from the ligament of Treitz and CO<sub>2</sub> insufflation was used during the procedure identifying duodenal and jejunal varices with active hemorrhage (Figure 1).

An adaptation of a conventional Wilson Cook® ligation of 10 bands with two nylon liberating devices fixed by a slipknot sailor and cyanoacrylate (CrazyGlue®) for achieve more resistance to tension, it was passed through the working channel of the enteroscope using an Olympus biopsy device for enteroscope (Figure 2). Endoscopic ligation was performed of duodenal and jejunal varices with elastic bands with hybrid ligation device for enteroscope (Figure 3 & 4). She presented rebleeding, anterograde SBE was performed at 24 hours. New enteroligation session was performed with success. There was no recurrence after 12 months of follow-up actually in liver transplant plan (Video).

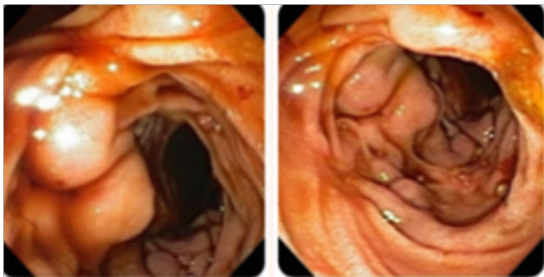


Figure 1 Duodenal and jejunal varices.

## Commentary

Hemorrhage associated with small-bowel varices is uncommon, difficult to treat, and often fatal manifestation of portal hypertension. There are no precise data on the incidence of this cause of bleeding.<sup>1</sup> The main cause is portal hypertension or a local stenosis or thrombosis of the superior mesenteric vein. About 8.1% of patients with portal hypertension who underwent capsule endoscopy have small-bowel varices.<sup>2</sup> There is no one standard of care for the treatment of small bowel varices due to portal enteropathy and treatment alternatives that have been described include surgery, transjugular intrahepatic portosystemic shunt (TIPS),<sup>4</sup> and endoscopic approaches such as variceal injection with cyanoacrylate using push enteroscope or balloon assisted enteroscopy.<sup>5</sup> However endoscopic sclerotherapy as reported by Kachaamy T and Harrison ME<sup>3</sup> did not resolved long-term hemorrhage. We demonstrated here a successful endoscopic treatment

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of small bowel varices by using an adaptation of a conventional Wilson Cook® ligation device of 10 bands with two nylon releasing devices fixed by a slipknot sailor and cyanoacrylate (CrazyGlue®) to achieve more resistance to tension, passed through the working channel of the enteroscope using an Olympus biopsy device for enteroscope. It permitted successful endoscopic enteroligation without recurrence after 12 months of follow-up.

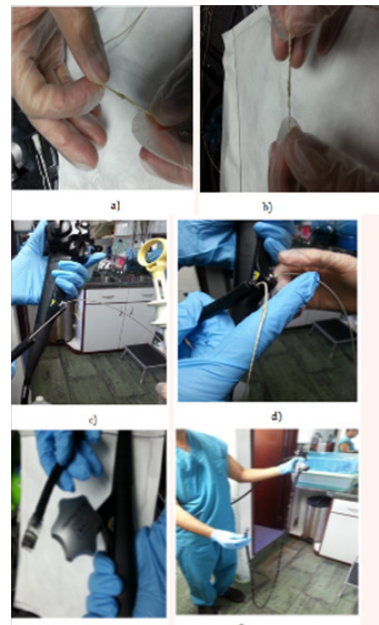
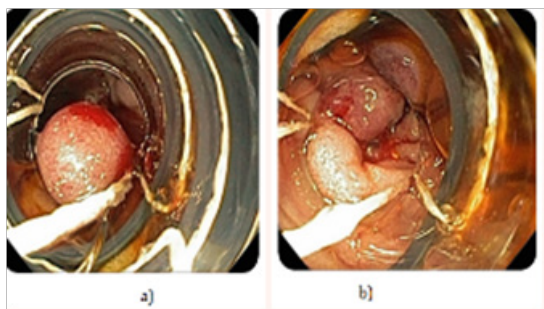
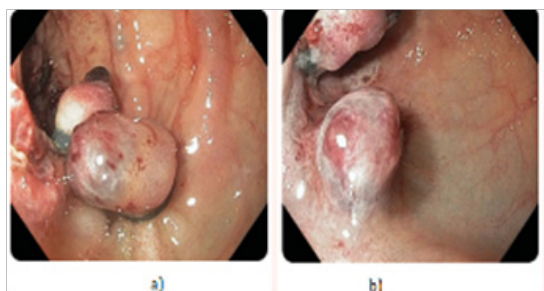


Figure 2 An adaptation of a conventional.

Wilson Cook® ligation



**Figure 3** Enteroligation with a ESB.



**Figure 4** Enteroligation of duodenal and jejunal varices.

### Conflicts of interest

None.

### Acknowledgements

None.

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