

Treatment of Cardiofundal Gastric Varices From Splenic Vein Occlusion: A Different Phenotype and Framework for Treatment?

Thomas Wang¹, Kanwal Bains², Marvin Ryou¹

1. Department of Gastroenterology and Hepatology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA. 2. Department of Nutrition, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

Background

- Cardiofundal gastric varices (i.e. isolated gastric varices, or IGV1) can result from isolated splenic vein occlusion, either from intraluminal thrombosis or extrinsic compression.
- These patients often do not have systemic portal hypertension or cirrhosis, with common etiologies including pancreatic-associated malignancies or local inflammation from pancreatitis.
- Treatment of non-cirrhosis related cardiofundal gastric varices (GV) can be challenging, as conventional gastric variceal therapies such as transjugular intrahepatic portosystemic shunt (TIPS) or balloon occluded retrograde transvenous obliteration (BRTO) could be ineffective for left sided portal hypertension.

Aim

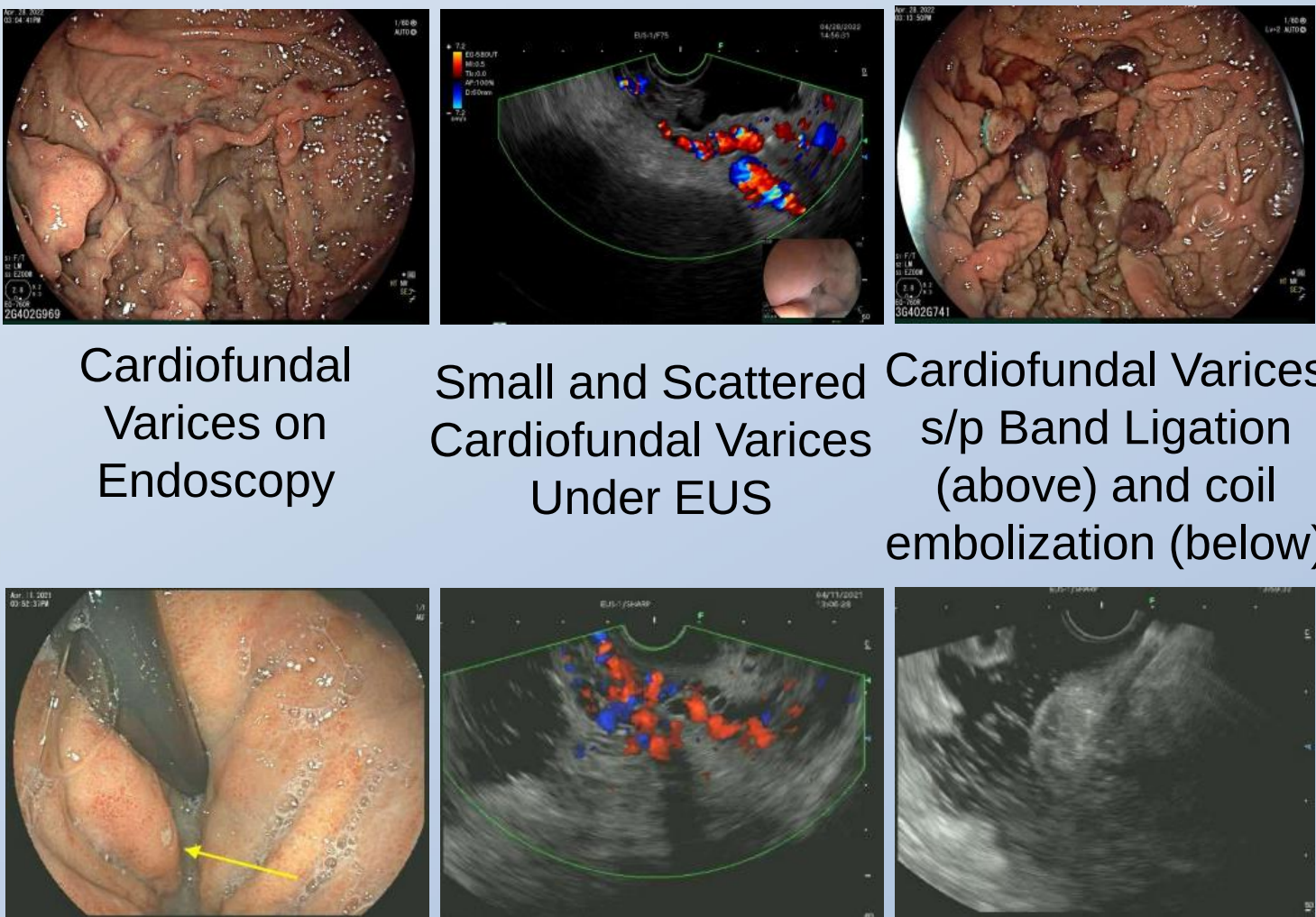
- We aimed to describe our center's endoscopic experience and approach in treatment of cardiofundal gastric varices in the setting of isolated splenic vein occlusion.

Methods

- Retrospective cohort study
- Inclusion criteria: All patients who presented with concern for bleeding from cardiofundal GVs secondary to splenic vein occlusion at two tertiary hospitals and referred for endoscopic therapy from Jan 2018 to May 2022
- Exclusion criteria: Patients with cirrhosis or portal vein thrombosis
- Variables of interest: Patient demographics, etiology of splenic vein occlusion, treatment types, technical success, and follow-up/re-interventions

Case Descriptions/Results

Case	Etiology of Splenic Vein Thrombosis	Treatment on Index Procedure	Follow up
1	Pancreatic adenocarcinoma	Coil embolization + Gelfoam	Repeat EGD with deflation of IGV1
2	Pancreatic adenocarcinoma	Band ligation	No recurrent bleeding
3	Metastatic carcinoid tumor	Coil embolization	Repeat EUS guided coil embolization in 2 weeks due to bleeding. Bleeding persisted, so referred to IR. BRTO attempted but no shunt, so ultimately underwent splenectomy.
4	Necrotizing pancreatitis	Coil embolization + Gelfoam	No recurrent bleeding
5	Pancreatic adenocarcinoma	Band ligation	Two additional sessions for bleeding, first with coil + Gelfoam, second with repeat banding (all within 2-3 months).
6	Pancreatic adenocarcinoma	Coil embolization + cyanoacrylate glue	Presented with rebleeding from IGV1 within 3 months, received Hemospray followed by splenic artery embolization.
7	Necrotizing pancreatitis	Coil embolization + Gelfoam	Repeat intervention in 3 weeks with coil embolization + Gelfoam + banding. No recurrent bleeding, IGV1 improved.
8	Pancreatic neuroendocrine tumor	Coil embolization + Gelfoam + band ligation	Repeat intervention in 2 months with repeat coil embolization + Gelfoam + banding.



Cardiofundal Varices on Endoscopy Small and Scattered Cardiofundal Varices Under EUS Cardiofundal Varices s/p Band Ligation (above) and coil embolization (below)

- 8 total patients (two sample patients above)
- 50% (4/8) female, average age 53
- 6/8 underwent coil embolization +/- adjunct therapy, while 3/8 underwent band ligation (one had both performed)
- Technical success in achieving hemostasis on index procedure was 100%
- 5 patients had re-intervention, with 2 of the 5 refractory to endoscopic therapy requiring splenic artery embolization and splenectomy

Conclusions

- Coil embolization and/or band ligation can be effective initial endoscopic therapies for non cirrhotic cardiofundal GV bleeding.
- Cardiofundal GVs from splenic vein occlusion on endoscopic ultrasound often appear much smaller in size as compared to those from cirrhosis, which may preclude coil embolization and may benefit from band ligation instead
- For patients who fail initial endoscopic therapy and require significant transfusions, splenic artery embolization and splenectomy can be considered.