Coil-Assisted Retrograde Transvenous Obliteration (CARTO) for the Treatment of Gastric Variceal Bleeding in a Patient with a Gastrorenal Shunt: A Case Report

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Background
Portal hypertension (pHTN) is primarily caused by liver cirrhosis, which can lead to varices at portosystemic anastomoses.¹,² Gastric variceal bleeding (GVB) is rare but can be life-threatening with a mortality up to 50% for each bleeding episode. When endoscopic banding is ineffective and TIPS placement is contra-indicated due to risk of post-TIPS encephalopathy, coil-assisted retrograde transvenous obliteration (CARTO), which has shown great success in some studies, can be an effective treatment.⁵,⁶,⁷,⁸ This case demonstrates successful use of CARTO to treat GVB in a patient with a gastrorenal shunt (GRS) who presented with pHTN.

Case Overview
A 62-year-old female with cirrhosis due to nonalcoholic steatohepatitis (NASH) presented with pHTN and GVB. The patient had a massive GRS, which permitted access through the systemic venous circulation to treat the bleeding varices. Furthermore, the patient had hepatic encephalopathy (HE), making TIPS placement a poor choice due to risk of HE exacerbation. CARTO was performed to treat the bleeding varices and had the added benefit of decreasing risk of HE.

Discussion/Results
This case highlights CARTO in a patient with a 22mm GRS using a dual catheter system. Eighteen detachable 035 coils were first deployed in the GRS, followed by complete occlusion with a Gelfoam slurry to obliterate the gastric varices. Studies have described CARTO, all of which have shown incredibly high technical (complete embolization by angiography and/or CT) and clinical (no variceal rebleeding) success rates. This patient returned for follow-up CT and endoscopic imaging, which confirmed technically and clinically successful CARTO.

Conclusion and Potential Impact
CARTO appears to be a safe alternative to TIPS when treating GVB caused by pHTN, especially in patients who have HE and a GRS. Thus, CARTO should be discussed as a treatment option for these patients. Although portal pressure increases post-CARTO, the improvement of HE can lead to an improved safety profile with future TIPS.
References


