

Trans-splenic anterograde coil assisted transvenous obliteration vs. retrograde transvenous obliteration: Are we heading the right way?

To the Editor:

We read with interest the study by Shalaby *et al.*,¹ which compares the efficacy and safety of trans-splenic anterograde coil-assisted transvenous obliteration (TACATO) with conventional retrograde transvenous obliteration (RTO). The authors should be commended for conducting this study in a difficult-to-recruit population and highlighting an alternative, technically simpler endovascular intervention for the management of cardiofundal varices. We have the following concerns regarding the reported outcomes.

1. The inclusion criteria of the study are restrictive and limit the generalizability of the study. The majority of patients undergoing TACATO were Child-Pugh class A (60%) with a median MELD (model for end-stage liver disease) score of 13 (11-15) while those undergoing RTO were predominantly Child-Pugh class B (61%) with a median MELD score of 16 (9-21). While the differences were not statistically significant, they may carry clinical significance in influencing further decompensation and transplant-free survival and require cautious interpretation.²
2. While TACATO was safely performed in the present study, prior observational data suggests that up to 10% of patients may experience clinically significant hemorrhage requiring transfusions, with one study reporting transfusion rates of 28% in patients undergoing esophageal and gastric variceal obliteration via the trans-splenic route.³ The lower bleeding rate in this study may be attributed to the experience of the interventional radiologists (>15 years of experience) and relatively better liver function in the study group (mild ascites in 30% of patients). Such expertise may not be available at many centers and larger multicenter studies are required to establish its safety in management of gastric varices, particularly in patients with moderate to severe ascites, which is a relative contraindication to RTO.⁴
3. One of the major limitations of an antegrade approach is the inability to clearly identify the afferent channels which may result in inadequate obliteration of varices.⁵ The rates of variceal obliteration after balloon-occluded RTO (BRTO) have been shown to be 95-100% in multiple observational and randomized clinical trials, which reduces the need for endoscopic surveillance. The lower rates of obliteration with TACATO (74%) as opposed to BRTO would mandate periodic endoscopic surveillance and cyanoacrylate glue injection to eradicate all soft components of varices, placing the patient at an increased risk of complications due to N-butyl cyanoacrylate glue injection, such as embolization.^{6,7}
4. While the authors note that portal pressures were increased in five patients undergoing TACATO (who were assessed), these should be compared to the changes in portal pressures after RTO. Prior studies have shown that the rise in portal pressures after BRTO abate within 4 weeks; hence it would be interesting

to assess whether the perceived benefits of TACATO over BRTO (lower risk of ascites, aggravation of esophageal varices) are influenced by hemodynamic changes, severity of liver illness or a combination of these.^{8,9} This is particularly relevant to this study as the increase in ascites post RTO was observed at 12 and 18 months after RTO, which cannot be attributed to increased portal pressures alone.

5. The authors should clarify why they would prefer TACATO over balloon antegrade transvenous obliteration (BATO). Both procedures result in antegrade occlusion of gastric varices, but BATO provides an additional opportunity to place a transjugular intrahepatic portosystemic shunt (TIPS) in the same setting if the interventional radiologist deems that adequate decompression may not be achieved by embolization alone. While trans-splenic TIPS may also be attempted, it is associated with lower success rates and is largely restricted to patients with portal vein thrombosis.^{3,5}

In conclusion, while the results of this study add to the evolving armamentarium of endovascular interventions tailored to the vascular anatomy of gastric varices, limitations imposed by the sample size and restrictive inclusion criteria prevent the generalizability of the data. Modifications of traditional RTO, such as plug-assisted or coil-assisted procedures, have reduced the timespan of the procedure.⁵ Major complications of RTO such as portal vein thrombus, renal vein thrombus or anaphylaxis are relatively uncommon and similar to the rates of splanchnic vein thrombosis after TACATO.^{6,7,10} Larger, multicentric randomized-controlled trials would be required to compare TACATO with traditional or modified RTO and BATO in terms of technical and clinical efficacy, to assess whether these encouraging results can be replicated in other centers. For now, TACATO remains an important option for patients in whom TIPS and BRTO are contraindicated or in centers where such expertise is not available.

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Conflict of interest

The authors of this study declare that they do not have any conflict of interest. Please refer to the accompanying ICMJE disclosure forms for further details.

Authors' contributions

All authors were involved in drafting of the manuscript.

Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jhepr.2025.101341>.

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Author names in bold designate shared co-first authorship

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