

Novel hybrid operation to treat gastrointestinal bleeding caused by portal vein obstruction

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Credit: The Authors

The portal vein is responsible for collecting blood from the stomach, intestines, and spleen, and transporting it into the liver. However, in some cases, the lumen of the portal vein can become blocked due to a condition known as portal vein thrombosis (PVT).

When PVT occurs and the [portal vein](#) is occluded, the body creates numerous collateral vessels around the [blood](#) clot, leading to a condition called cavernous transformation of the portal vein (CTPV). The prevalence of PVT in cirrhosis is reported to be between 2% and 40% and increases as the severity of liver disease worsens. It is worth noting that splenectomy, the surgical removal of the spleen, can significantly

increase the risk of developing PVT by up to tenfold.

CTPV can manifest in various clinical ways, ranging from asymptomatic to life-threatening symptoms. Some of these manifestations include gastrointestinal bleeding, ascites, and hypersplenism. Treating patients with CTPV poses a challenge for surgeons, interventional radiologists, and physicians alike. It is important to emphasize that CTPV is a recognized incurable disease that is not cancerous in nature.

To that end, a team of Chinese clinicians has introduced a new approach called the transmesenteric vein extrahepatic portosystemic shunt (TEPS) to enhance the [success rate](#) and simplify the procedure for treating patients with CTPV.

"The TEPS operation involves a minimally invasive infraumbilical median longitudinal mini-laparotomy, which is the only surgical trauma required," explained Dr. Weixiao Li, inventor of this innovative hybrid operation. "Interventional techniques are then utilized to implant a covered stent-graft between the portal vein (PV) and the inferior vena cava (IVC)."

This procedure effectively diverts the blocked blood flow in the portal vein into the heart via the covered stent-graft. Consequently, life-threatening [clinical manifestations](#) associated with CTPV, such as [gastrointestinal bleeding](#), ascites, and hypersplenism, can be successfully resolved.

The team reported their study in the *Journal of Interventional Medicine*.

"TEPS combines the strengths of traditional surgical and interventional approaches," added Li. "We hope that more doctors will acquire proficiency in this hybrid operation. Ultimately, the widespread adoption of TEPS would enable more patients with CTPV to be effectively

treated and cured."

More information: Weixiao Li et al, Application of transmesenteric vein extrahepatic portosystemic shunt in treatment of symptomatic portal hypertension with cavernous transformation of portal vein, *Journal of Interventional Medicine* (2023). [DOI: 10.1016/j.jimed.2023.04.001](https://doi.org/10.1016/j.jimed.2023.04.001)

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