



Modified Meso-Rex Shunt for Extrahepatic Portal Vein Obstruction and Variceal Bleeding after Pancreatoduodenectomy in an Adult

Ara Cho and Seung-Keo Min

Division of Vascular Surgery, Department of Surgery, Seoul National University College of Medicine, Seoul, Korea

Extrahepatic portal vein obstruction (EHPVO) can cause portal hypertension and life-threatening variceal bleeding (VB) [1]. Meso-Rex shunt (MRS) is an attractive treatment for EHPVO, which involves shunting the mesenteric vein to the intrahepatic left portal vein (LPV) within the Rex recess using an autologous vein graft. MRS is the best option for children because it can perfuse the liver to allow for growth [2]. EHPVO may develop after pancreatoduodenectomy (PD) and cause VB at the hepaticojejunostomy (HJ) site. Herein, we report an adult case of uncontrolled VB due to EHPVO after PD treated with modified MRS using great saphenous vein (GSV) graft shunting between the coronary vein and LPV.

A 52-year-old male presented with hematemesis, melena, and drowsiness. He had undergone total pancreatectomy for pancreatic cancer 2 years earlier. Despite a four-time endoscopic gastroesophageal variceal ligation, VB recurred from the HJ site. Computed tomography (CT) revealed EHPVO (Fig. 1), hilar cavernous transformation, and gastroesophageal HJ varices (Fig. 2). A MRS was planned to control the VB by reducing portal hypertension and maintaining hepatopetal venous flow. Ultrasonography (USG) revealed patent LPV. However, the peak systolic velocity (PSV) was reduced of the LPV was reduced to 11.1 cm/s with a reversed flow (Fig. 3A). Modified MRS was performed through a midline incision using the left proximal GSV (coronary vein to LPV). USG showed improved PSV to 34.3 cm/s (Fig. 3B). CT at 2 years revealed patent MRS (Fig. 4), and the liver function test results were normal.

Oncovascular surgery and neoadjuvant chemoradiotherapy can achieve curative resection of locally advanced pancreatic cancers invading the portomesenteric vein/hepatic artery [3], resulting in long-term survival of these patients. However, some patients develop EHPVO after undergoing PD. Therefore, ironically, more patients with VB from the HJ site return to the hospital. The essential conditions for MRS include no intrinsic liver parenchymal disease, patent

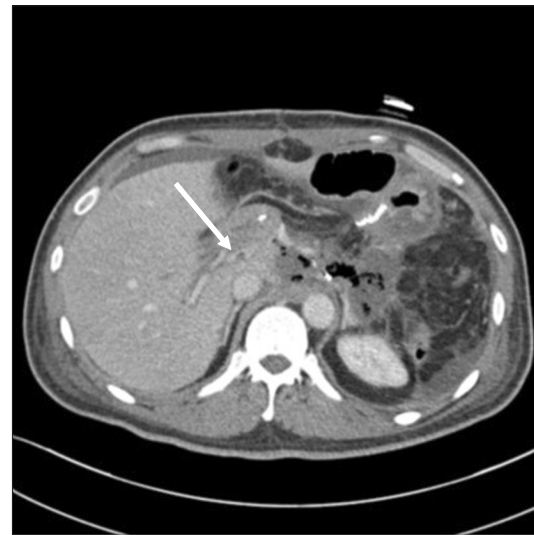


Fig. 1. Computed tomography performed two weeks after total pancreatectomy showed thrombosis (arrow) in the extrahepatic portal vein.

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Corresponding author: Seung-Keo Min, Division of Vascular Surgery, Rm 5313, Biomedical Research Institute, Seoul National University Hospital, 101 Daehak-ro, Jongno-gu, Seoul 03080, Korea

Tel: 82-2-2072-0297, Fax: 82-2-766-3975, E-mail: skminmd@snuh.org, <http://orcid.org/0000-0002-1433-2562>

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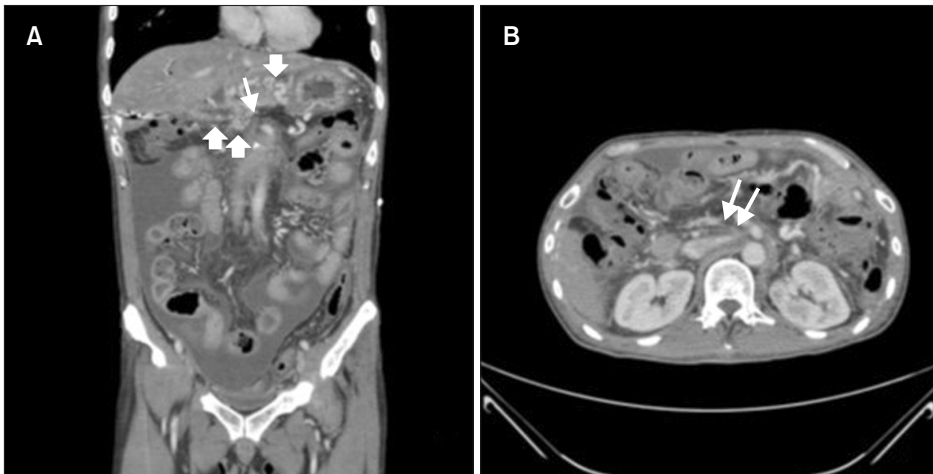


Fig. 2. Preoperative computed tomography scan revealed the obliteration of portal vein (thin arrows in coronal view [A] and axial view [B]). Gastric and hepaticojejunostomy varices (thick arrows in A) due to portal hypertension were observed.

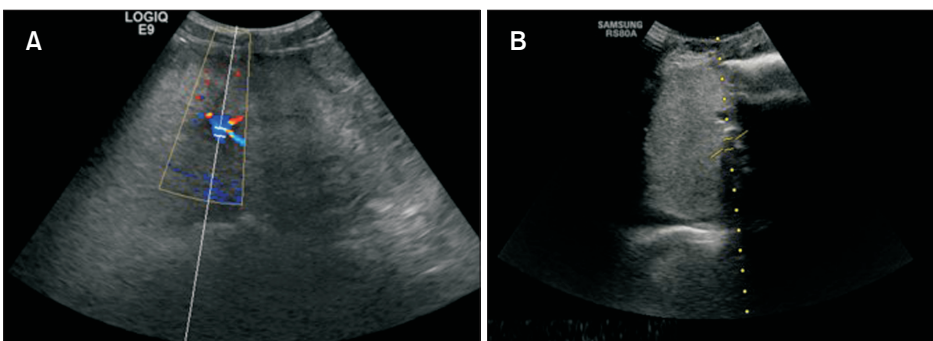


Fig. 3. (A) Preoperative abdominal ultrasonography (USG) showed patent left portal vein (LPV) near the Rex recess; however, the peak systolic velocity (PSV) was reduced to 11.1 cm/s, and the flow direction was reversed. (B) Postoperative USG showed patent LPV and the PSV improved to 34.3 cm/s.

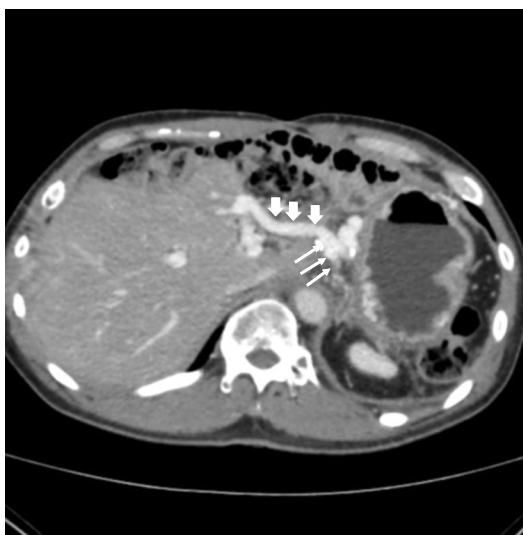


Fig. 4. Follow-up computed tomography after two years showed complete patency of the great saphenous vein graft (thick arrows) and coronary vein (thin arrows).

LPV, suitable mesenteric venous inflow, and an adequate autologous conduit [2]. Therefore, preoperative imaging evaluation and meticulous operative techniques determine the success of surgery.

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