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LETTER TO THE EDITOR

Use of a bridging autologous hepatic vein graft for extended right-liver transplantation

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Living-donor liver transplantation (LDLT) using a right-liver graft is a routine procedure in adults. The use of an allogenic cryopreserved vein for hepatic vein reconstruction facilitates full vascularization and minimizes graft congestion [1]. However, there is a constant risk of graft shortage in such procedures. In this study, we have reported the use of an autologous hepatic vein extracted from the resected liver of the recipient for overcoming graft shortage during hepatic vein reconstruction.

A 53-year-old man with hepatitis B cirrhosis underwent LDLT; the donor was his 31-year-old son. The graft weighed 740 g, and it included a right hepatic vein (RHV), middle hepatic vein (MHV), middle RHV (mRHV), and inferior RHV (iRHV). We decided to use a cryopreserved iliac vein (length, 65 mm; diameter, 22 mm) as a homograft for reconstructing the hepatic veins. The double inferior vena cava (IVC) method was used to obtain a sufficient length of the cryopreserved vein for anastomosis to the RHV and iRHV [1]. The other short hepatic veins, including the MHV, were to be anastomosed directly to the homograft.

Hepatic vein reconstruction using the homograft was performed on the back table (Fig. 1). The superior end of the homograft was sealed with continuous sutures. End-to-end anastomoses were performed between the inferior forked ends of the homograft and the iRHV and mRHV and between the RHV and the homograft. However, the venous graft was insufficient for direct anastomosis of the MHV to the homograft. Therefore, we used the RHV from the diseased liver as an autologous bridging vein graft.

The recipient's IVC was semi-clamped, and a 5-cm-long longitudinal incision was made. The homograft was incised similarly and anastomosed to the IVC in a side-to-side manner. Computed tomography after transplantation revealed clear enhancement of the hepatic veins, the homograft and the autologous graft. There was no stenosis of the anastomosis (Fig. 2). The patient is doing well 40 months after transplantation.

Living-donor liver transplantation (LDLT) with an extended right-liver graft requires hepatic vein reconstruction with multiple anastomoses, and various procedures

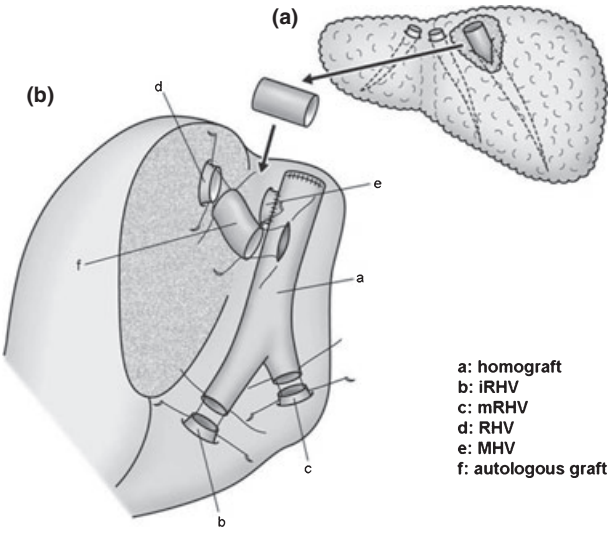

Figure 1 Hepatic venous reconstruction. (a) The RHV was extracted from the resected liver. (b) The anastomosis of the RHV, MHV, iRHV and mRHV to the homograft and the autologous hepatic vein graft was performed on the back table.

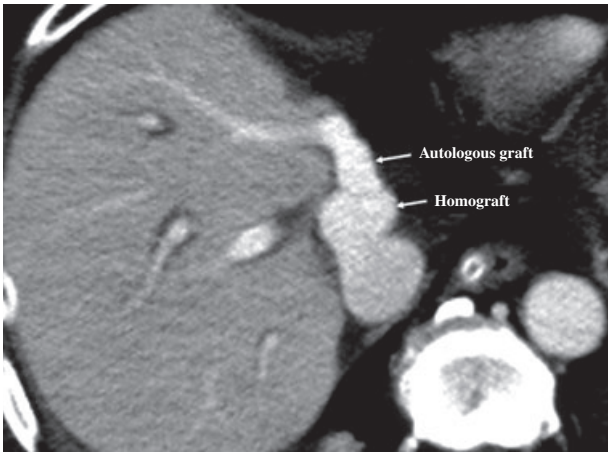

Figure 2 A computed tomographic scan obtained 1 week after transplantation. The autologous graft and homograft are clearly enhanced, suggesting good drainage and patency.

have been described for venous reconstruction [2–4]. Graft congestion can be minimized by reconstructing the short hepatic veins, such as the mRHV and iRHV, along with the MHV and RHV [3]. In our case, the distance between the MHV and homograft was longer than what we had anticipated; therefore, we faced a shortage of the cryopreserved venous graft. In this situation, we considered two options for venous reconstruction: one was a separate, direct anastomosis of the MHV, and the other was the extraction of an autologous venous graft from a hepatic vein of the resected liver or from the recipient's saphenous vein. Procurement of a venous graft from the resected liver is a less invasive and more convenient procedure. However, extraction of an autologous graft from the saphenous vein is recommended if the resected liver is carcinomatous. We have successfully used a similar bridging autologous graft for portal vein reconstruction [5].

Thus, a bridging autologous hepatic vein graft extracted from the resected liver is a convenient alternative graft for hepatic venous reconstruction in LDLT.

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