Various Techniques in Middle Hepatic Vein Reconstruction in Living Donor Liver Transplantation

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Living donor liver transplantation is now widely accepted as a therapeutic option for adult patients with various end-stage liver diseases. The major concerns for use of right lobe (RL) graft have focused on the safety for the donor and the necessity for including the middle hepatic vein (MHV) into the graft to avoid congestion of the right anterior segment. There are 5 types of RL grafts (simple RL, modified RL, modified extended RL, extended RL with V4b preservation, and extended RL), and its selection is usually determined after consideration of graft size to recipient, availability of vessel graft, amount of hepatic venous congestion, and reconstruction technique. Various kinds of vessel grafts have been used in practice: greater saphenous vein, paraumbilical vein, portal vein and internal jugular vein from the recipient; various veins and arteries from the deceased donors; and bovine pericardium and synthetic vessels. Interposition of a vessel graft was the basic principle for MHV reconstruction. Triphasic liver computed tomography and Doppler ultrasonography are the most useful tools for posttransplant follow-up. When outflow obstruction occurs at the interposed vessel grafts replacing the MHV trunk, radiological intervention with metallic stent insertion seems to be a feasible and reliable treatment modality. In conclusion, it is recommended to make the MHV reconstruction resemble the original configuration of the donor MHV trunk according to the hemodynamic principles.