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Initial Experience Of Heterotopic Living Donor Liver Transplantation Using Extended Left Liver Graft: A Case With Video

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Background : Adult-to-adult living donor liver transplantation (LDLT) using left liver graft (LLG) has been increasingly performed with acceptable recipient outcomes. However, although the graft-to-recipient body weight ratio may be sufficient, several technical issues make it challenging to use the LLG in LDLT, such as a frequent need for multiple hepatic arterial reconstructions and portal vein twisting or outflow obstruction due to graft rotation. Here, we introduce our initial experience of heterotopic LDLT using extended LLG.

Methods : A 54-year-old female patient suffering from hepatitis B virus and alcoholic liver cirrhosis underwent a heterotopic LDLT using extended LLG. After total hepatectomy, the recipient's middle and left hepatic vein trunk was closed. To implant the graft, it was flipped backward and rotated 90 degrees counterclockwise to place the hepatic vein of the graft right next to the middle of the IVC. Then, the graft's middle and left hepatic vein trunk was anastomosed with a pre-made orifice in the IVC. Subsequently, the portal vein was anastomosed by paying attention to its angle to avoid twisting. The procedures after reperfusion were similar to isotopic LDLT.

Results : The graft weight was 552 gm, and the graft-to-recipient body weight was 0.88. The bleeding was 2,000cc, and 5 pints of RBC were transfused. The warm and cold ischemic time was 7 and 91 minutes, respectively. The operation time was 565 minutes. At postoperative day 5, acute kidney injury on chronic kidney disease was developed but resolved with conservative management. She was discharged 19 days after the operation without any technical complications.

Conclusions : This method has the advantages that a wider outflow orifice could be easily obtained, and bile duct anastomosis is performed comfortably after arterial anastomosis. Heterotopic LDLT using LLG is considered a good strategy to prevent graft rotation, which could cause fatal graft dysfunction.

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