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Living Donor Liver Transplantation In Polycystic Liver Disease: The Recipient Liver Splitting Method

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Background : Polycystic liver disease(PLD) can progress to massive hepatomegaly resulting in impaired performance status and quality of life. In PLD patients with diffuse liver cysts with few areas of normal parenchyma, liver transplantation(LT) can be the only curable treatment. But LT can be extremely challenging due to difficulty in resecting a massive native liver. We report our case of liver transplantation for massive hepatomegaly due to symptomatic PLD.

Methods : A 53-year-old man was diagnosed with autosomal dominant polycystic kidney disease in 1998. After 11 years, he was diagnosed also with PLD. The patient developed the end-stage renal disease, starting hemodialysis in 2011. He was first listed for kidney transplantation. While waiting for a deceased donor, abdominal discomfort aggravated due to the huge size of the kidney. So he underwent bilateral nephrectomy sequentially. He underwent several surgeries such as segmental resection of small bowel and ventral hernioplasty. In July 2020, due to an enlargement of liver cysts and massive hepatomegaly, the patient developed severe clinical symptoms; abdominal discomfort due to abdominal distension, dyspepsia, poor oral intake. He was listed for combined LT and KT in September 2020.

Results : Because of his low MELD score (21) and preserved liver function, the probability of liver transplantation in brain death was too sparse. So he decided to proceed with living donor LT (LDLT) first. At the LDLT, the graft mobilization was too hard not only because of the size, weight, and hardness of the organ but also because of inflammation and adhesion due to previous several operations. Careful dissection around the liver was done but the liver was not able to be mobilized. After hilar dissection and all the vasculatures were ligated, the IVC was exposed and could be dissected up to the right hepatic vein. However, the hepatic veins were not able to be identified due to the huge liver. Liver parenchyma was resected and right, middle, and left hepatic veins were isolated after parenchymal resection. The recipient's liver was weighed 10,134 g.

Conclusions : We report our case of LDLT for massive hepatomegaly due to symptomatic PLD, which used a novel recipient liver splitting method.

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