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Gallbladder Saving Operation In Laparoscopic Living Donor Extended Left Hemihepatectomy

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Background : Currently, the cholecystectomy has been routinely performed when performing the right or the left hemihepatectomy in donor. However, some donors experience the gastrointestinal disturbances after the cholecystectomy. And recent studies have shown that the absence of gallbladder is an independent risk factor for nonalcoholic fatty liver disease and may attribute to the disturbed bile acid metabolism. Given the fact that living donors are healthy population undergoing major surgery, it is important to minimize the postoperative morbidity, even minor gastrointestinal discomfort. Even though it has been thought that it is inevitable to remove gallbladder during the major right or left hemihepatectomy, the gallbladder can be saved if the blood supply is preserved during hepatectomy. Hence, we introduce pure 3D laparoscopic living donor gallbladder saving extended left hemihepatectomy.

Methods : The donor is 26-year-old daughter with initial BMI 31.5kg/m2. Calculated total liver volume was 1461mL, and right graft-to-recipient weight ratio (GRWR) was 1.84. The bile duct anatomy showed type IIIb with trifurcation. Considering anatomy and GRWR, it was decided to use the left liver (GRWR 1.06). Her initial MRI fat fraction was 9.0% and before the donation she underwent weight reduction, with final 5.5% MRI fat fraction.

Results : We minimized grasping the gallbladder. The inferior dissection plane was just left side of gallbladder and then follow the midplane and the middle hepatic vein was included to the left liver graft. There was no adverse events while performing the hepatectomy and there was no ischemic and congested part in gallbladder. The postoperative course was uneventful. The donor did not have any gastrointestinal symptoms including diarrhea, dyspepsia, or abdominal pain which may occur after cholecystectomy. No abnormalities have been observed in the outpatient clinic for about 8 months follow-up, and there were no findings such as gallbladder perforation or stones on the CT taken 4 months after the operation.

Conclusions : Laparoscopic gallbladder saving extended left hemihepatectomy can be successfully implemented for the liver donors without any adverse events.

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