Totally Laparoscopic Living Donor Left Hepatectomy for Liver Transplantation in a Child

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Background: Minimally invasive surgery has been validated to be a new standard in living donor hepatectomy for adult-to-pediatric transplantation with less morbidity[1]. Laparoscopic donor hepatectomy can reduce the major concerns about pain and morbidity associated with open surgery and a slow return to daily activities of donors[2]. Herein we present one case of totally laparoscopic living donor left hepatectomy including the middle hepatic vein (MHV).

Methods: A 37-year-old mother volunteered to donate to her 3-year-old son with biliary atresia (PELD score 7). Total donor liver volume was 833 cm$^3$ and left liver, including MHV, was 290 cm$^3$. Graft to recipient body weight ratio was 2.07. Our operative technique has been published previously [2]. The left hepatic artery and portal vein were dissected and encircled with two vessel loops. Pringle’s maneuver was used during parenchymal transection. The transection of the liver was performed using an alternating combination of laparoscopic ultrasonic aspirator (CUSA) and THUNDERBEAT™ (Olympus, Japan). The MHV was identified and parenchymal transection was performed right side to it. Several small tributaries from segment V and VIII were identified and divided. Finally, left bile duct was identified and divided after performing intraoperative cholangiography using a mobile C-arm.

Results: Totally laparoscopic living donor left hepatectomy was performed successfully without intraoperative complications and transfusion. The operation time was 300 min, the estimated blood loss was less than 125 ml and Graft weight was 314 g. Oral intake was resumed on the first postoperative day (POD). On POD 4, CT scan showed no pathological findings. The patient was discharged on POD 8 without complications.

Conclusions: The authors conclude that the laparoscopic living donor left hepatectomy is a safe and feasible procedure, but should it be performed in selected patients with a favorable anatomy.