Pediatric liver transplantation with hyperreduced left lateral segment graft

Byeong-Gon Na¹, Shin Hwang¹, Jung-Man Namgoong¹, Gi-Won Song¹, Dae-Yeon Kim¹, Tae-Yong Ha¹, Dong-Hwan Jung¹, Kyung Mo Kim², Seak Hee Oh²

¹Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

²Department of Pediatrics, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Background: To prevent large-for-size graft-related complications in small infant patients, the size of a left lateral segment (LLS) graft can be reduced to be a hyperreduced LLS (HRLLS) graft.

Methods: This study was intended to describe the detailed techniques for harvesting and implanting HRLLS grafts developed in a high-volume liver transplantation (LT) center.

Results: The mean recipient age was 4.0 ± 1.7 months (range, 3–6 months) and body weight was 5.3 ± 1.4 kg (range, 4.1–6.9 kg). Primary diagnoses of the recipients were progressive familial intrahepatic cholestasis in two and biliary atresia in one. The types of LT were living donor LT in one and split deceased donor LT in two. Non-anatomical size reduction was performed to the transected LLS grafts. The mean weight of the HRLLS grafts was 191.7 ± 62.1 g (range, 120–230 g) and graft-recipient weight ratio was $3.75\% \pm 1.57\%$ (range, 2.45%–5.49%). Widening venoplasty was applied to the graft left hepatic vein outflow orifice. Vein homograft interposition was used in a case with portal vein hypoplasia. Types of the abdomen wound closure were one case of primary repair, one of two-staged closure with a mesh, and one of three-staged repair with a silo and a mesh. All three patients recovered uneventfully from the LT operation and are doing well to date for more than 6 years after transplantation.

Conclusions: Making a HRLLS graft through non-anatomical resection during living donor LT and split deceased donor LT can be a useful option for treating small infant patients.

Corresponding author: Shin Hwang

E-mail: shwang@amc.seoul.kr

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