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Living donor liver transplantation using left trisection graft with caudate lobe

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Introduction : Due to small remnant volume or anatomical variation, a right liver graft may be precluded in adult living donor liver transplantation (LDLT). Right posterior section, right anterior section graft, or dual donor grafts have been proposed as alternative grafts of right and left liver grafts. Here, we report a case of LDLT using left trisection graft with caudate lobe.

Methods : The donor had a type III portal vein (PV) anomaly. Donor's right hepatic artery (HA) was extrahepatically divided into right anterior and posterior HA and left HA was originated from left gastric artery. Preoperative cholangiography showed trifurcation of bile duct. Left trisection graft with caudate lobe was measured 620 gram that was 0.88% of graft to recipient weight ratio.

Results: With J shaped incision, hilar dissection of the donor was performed to isolate the left and right anterior and posterior branches of the HA and PV. Then, the liver was transected in a plane that was demarcated on the liver surface, temporarily occluding the right posterior branch of the HA and PV. We encountered 1 PV opening, 1 hepatic vein opening, 3 HAs, and 3 bile duct openings in the left trisection graft with caudate lobe that were safely anastomosed in the recipient. There was no complication in donor and recipient side after operation.

Conclusions : Although it was a complex operation, left trisection graft with caudate lobe might be a feasible option for special situations involving donors unsuitable for right liver donation.