Pure laparoscopic versus open right hepatectomy in living liver donors: which is longer bench-surgery time

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Background: The aim of the study was to measure bench-surgery time in pure laparoscopic donor right hepatectomy (PLDRH) in comparison with those of conventional donor right hepatectomy (CDRH).

Methods: We retrospectively reviewed the medical records of 514 donors who underwent living donor liver transplantation between January 2012 and December 2019 at Seoul National University Hospital. We divided it into two periods: when almost only CDRH was performed and the second period during which PLDRH was standardized.

Results: The mean bench-surgery time (49.3 vs. 39.5 minutes; $P=0.00$) was longer in the PLDRH group than the CDRH group. We performed the analysis while excluding the factors affecting the bench-surgery time in both groups. First, we analyzed except the patients who had undergone direct venoplasty or Y-graft patch reconstruction of two portal veins. After that, we excluded the patients who had reconstruction of more than three openings of middle hepatic vein tributaries and no reconstruction of those (right hemi-liver graft). Lastly, we excluded the patients who underwent venoplasty of inferior hepatic vein(s) in back-table procedures. In all three subgroup analyses, the mean bench-surgery time was also longer in the PLDRH group than the CDRH group (47.4 vs. 38.4 minutes, $P=0.00$; 48.7 vs. 37.4 minutes, $P=0.00$; 48.3 vs. 36.6 minutes, $P=0.00$).

Conclusions: The bench-surgery time takes longer in the PLDRH group regardless of reconstruction of type II or III portal vein variations and liver graft outflow or not.

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