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Intraoperative Hepatic Artery Thrombosis In Living Donor Liver Transplantation Despite Immediate Reconstruction Increases Risk Of Graft Failure

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Background : Post-transplant hepatic artery thrombosis (HAT) can lead serious complications of are derived from long arterial ischemic time. However, there has been few reports regarding fate of intraoperative HAT during adult living donor liver transplantation (ALDLT).

Methods : From 2000 to 2019, 1,355 recipients underwent ALDLT in Seoul National University Hospital. All patients with no intraoperative arterial flow were managed by redoing hepatic artery anastomosis. Survival outcomes and the rates of biliary complication of patients with intraoperative HAT were compared with others without HAT and with postoperative HAT. Median follow-up period was 89 months.

Results : Intraoperative HAT was developed in 45 cases (3.3%). Hepatic artery reanastomosis was performed once in 33 cases (73.3%), for more than 2 times in 12 cases (26.6%). Among 45 patients with intraoperative HAT, postoperative HAT was detected in 6 cases (13.3%) at a median time of 3 days (range 1-68). All patients underwent redo arterial reconstruction, but technical success rate was 50.0%. Overall graft survival rates were lower in patients with intraoperative HAT (93.3%) than others without HAT (98.0%) ($P=0.026$), but higher than in patients with postoperative HAT (88.9%) ($P=0.001$). However, patient survival rates were similar among three groups ($P=0.269$). There was no difference in biliary complication between patients with intraoperative HAT (33.3%) and the others without HAT (32.1%) ($P=0.945$), which is lower than patients with postoperative HAT (55.5%, $P=0.011$).

Conclusions : Intraoperative HAT after ALDLT did not affect biliary complication and patient survival, but is significantly associated with recurrent postoperative HAT and graft failure. Patients with intraoperative HAT in ALDLT should be intensively monitored for HAT and graft dysfunction.

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