

Abstract Type : Oral Presentation
Abstract Submission No. : F-006351

The Clinical Outcome Of Hepatic Artery Dissection After Living Donor Liver Transplantation In A High Volume Center

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Introduction: Hepatic artery dissection(HAD) is an uncommon complication of living donor liver transplantation(LDLT) and is associated with hepatic artery thrombosis(HAT). Since the incidence of HAD is low, clinical outcomes have not been well studied so far. The aim of this study is to identify the natural course of HAD and to suggest an appropriate management strategy.

Methods: Patients who underwent adult LDLT at Asan Medical Center were retrospectively reviewed between January 2010 and December 2022. We divided the subgroups based on the range of HAD, as well as the use of anticoagulants. The study outcomes were an event of HAT.

Results: Among 4065 LDLT recipients, 114(2.8%) patient were diagnosed with HAD. HAD was diagnosed on a mean of 10(1-55) postoperative days. The isolated proper hepatic artery(PHA) involved group accounted for 47.3% (54/114) of the cases, while the diffuse type of HAD was 60 (52.6%). 92 patients (80.7%) had resolution and the mean time to resolution was 104.3 days (19-448). The HAT was diagnosed in 7 patients (6.1%), all of which occurred in the isolated PHA group (7/54, 13%). According to the medication type, 47patient received only antiplatelet agents while 67 patients received additional oral anticoagulant. In comparison between two groups, there were no significant differences in HAT and graft failure.($p=0.444$, $p=1$). The resolution rate of HAD was higher in the anticoagulant group(33/47,70.2% vs 59/67,88.1%, $p=0.017$). The time to resolution of HAD was shorter in the anticoagulant group but there was no significant difference.(109.38±18.63, 62.56±8.15), $p=0.695$)

Conclusion: HAD is mostly benign and spontaneously resolved within four month. The diffuse type of HAD does not increase the risk of HAT or graft failure. The conservative treatment is sufficient and the addition of oral anticoagulants may be beneficial in the resolution of HAD.