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Hepatic Artery Reconstruction Using Mid-colic Artery In Living Donor Liver Transplantation

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Background : Hepatic artery (HA) complication after living donor liver transplantation (LDLT) is a lethal complication, with incidence ranging from 2.5% to 9%. Although surgeons attempt to meticulously dissect the HA to avoid any injury, native HA is sometimes not healthy enough for anastomosis because of previous injury from repeated transarterial chemoembolization, radiation therapy, intra-arterial chemotherapy (iA CTx) or concurrent chemo-radiation therapy (CCRT). In such difficult situation, right gastroepiploic artery (RGEA) is mostly preferred as an arterial source instead of the native HA because of its ease of access and adequate length. However, when even RGEA is not available, the next arterial source has not been established yet.

Methods : Herein, we report successful HA anastomosis between recipient mid-colic artery and graft right HA. The recipient was a 66-year-old male with diffuse infiltrative HCC of 10cm in diameter, portal vein tumor thrombosis and history of twice of iA CTx in CCRT and 9 times of iA CTx after CCRT. The patient underwent LDLT due to liver failure. The donor was his 28-year-old daughter. The anatomy of the right lobe graft was classical with one HA, one portal vein and one hepatic duct. On preoperative CT scan of the recipient, the flow of proper HA, RGEA, and left gastric artery were all insufficient (Figure 1). Thus, arterial anastomosis was preoperatively planned and performed using recipient mid-colic artery.

Results : Postoperative HA flow was good, and the patient discharged uneventfully.

Conclusions : In conclusion, mid-colic artery can be considered as a feasible option in arterial anastomosis during LDLT when native HA is unavailable.

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