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The safety and efficacy of splenic artery ligation in living donor liver transplant recipients

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Introduction: Portal hypertension is one of the main causes of post-transplant graft dysfunction in Living Donor Liver Transplant (LDLT). Modification of the portal flow has been suggested to decrease portal pressure. One possible, Splenic Artery Ligation (SAL), has been performed in recipients with elevated portal vein flow. Even though the short-term results with SAL in LDLT are excellent, the long-term outcomes and post-operative complications have been yet to be determined.

Method: From August 2010 to August 2016, 87 LDLT were performed at the STI (Starzl Transplant Institute) of the University of Pittsburgh. Two patients had previous splenectomy and were excluded. Of 85 patients, 42 had SAL preformed. We compared results in patients with SAL or without SAL retrospectively after an IRB approved by STI. LDLT was performed using either the right or left lobe.

Result: The study showed that SAL significantly decreased mean portal pressure $(19.2\pm1.7 \text{ pre-SAL vs. } 15\pm1.8 \text{ post-SAL}, p=0.0014)$. Of the 42 patients that had SAL, 7 (16.6%) developed splenic infarction as noted on routine CT imaging, but only one developed splenic abscess. No statistically difference was found in post-operative infection, post-operative wound complication and surgical complication rates between patients with/without SAL (p=0.50, p=0.166, p=0.237). Although the mortality rate was lower in patients with SAL, it was not statistically significant (11% vs. 28%, p=0.059).

Conclusion: Overall, SAL is safe and effective to decrease portal pressure without increasing risk of morbidity and mortality in recipient undergoing LDLT.

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