Surg. Gastroenterol. Oncol. 2018;23(1):16-20 DOI: 10.21614/sgo-23-1-16

Reconstruction of the Portal Vein with Expanded Polytetrafluoroethylene Jump Graft in Living Donor Liver Transplantation Recipients with Complete Portal Vein Thrombosis: A Feasible and Safe Alternative

Ashok Thorat[1,5], Long-Bin Jeng[1,2,5], Shih-Chao Hsu[1,2,5], Ping-Chun Li[1,4,5], Chun-Chieh Yeh[1,2,5], Te-Hung Chen[1,2,5], Horng-Ren Yang[1,2,5], Kin-Shing Poon[3,5]

[1]Organ transplantation centre, China Medical University Hospital, Taichung, Taiwan
[2]Department of Surgery, China Medical University Hospital, Taichung, Taiwan
[3]Department of Anaesthesiology, China Medical University Hospital, Taichung, Taiwan
[4]Department of cardiovascular surgery, China Medical University Hospital, Taichung, Taiwan
[5]China Medical University, Taichung, Taiwan

Abstract

Portal vein thrombosis (PVT) increases the surgical complexity of living donor liver transplantation (LDLT) and pre-transplant complete PVT is associated with decreased 1-year patient survival. Increased experience in the field of liver transplantation (LT) and refinements of the surgical techniques have led to successful outcomes even in recipients with complete PVT. Such techniques include thrombectomy of the native portal vein, extensive thromboendovenectomy up to the splenomesenteric confluence, venous conduit interposition and portocaval hemitransposition. In this report, we describe the outcome after LDLT using an expanded poly-tetrafluoroethylene (ePTFE) conduit from superior mesenteric vein (SMV) for portal inflow in patients with complete PVT.

Materials and Methods: From 10th September 2002 to 31st May 2017, 900 LT surgeries were performed at China Medical University Hospital, Taiwan. The database of the 30 recipients (3.3%) that had pre-LT PVT was retrospectively analysed. Portal vein thrombectomy was done in 27 patients, whereas a ePTFE graft was used as a jump graft from the SMV to establish portal flow in three LDLT recipients (n=3).

Results: ePTFE jump graft was used to establish portal inflow in three LDLT recipients (M:F, 3:0; mean age, 53 years). The first patient in this series did not receive any anticoagulation. At 14th month post-LDLT the ePTFE conduit was found to be thrombosed with multiple collaterals. However, the liver function tests were normal. The patient developed one episode of sepsis from which he completely recovered, and continues to have normal liver function till the latest follow up. The remaining 2 patients in this series received warfarin as anti-coagulation therapy, with a dose of 3.5 mg per day. The latest imaging studies in both the recipients revealed a patent ePTFE conduit with satisfactory portal flow and normal post-operative liver function.

Conclusions: The portal inflow can be successfully established in LDLT for recipients with pre-LT complete PVT without increasing the mortality risk. However, anticoagulation with warfarin must be instituted to avoid thrombotic occlusion of the ePTFE graft.

Key words: portal vein thrombosis, living donor liver transplantation, ePTFE graft, portal vein reconstruction