

Liver V

Auxiliary liver transplantation with small graft for severe portal hypertension related to cirrhotic liver diseases

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Objective To examine the clinical effect of auxiliary liver transplantation with small volume graft in treating severe portal hypertension related to cirrhotic liver diseases.

Methods Twelve cases of severe portal hypertension treated by auxiliary liver transplantation with small volume graft at Liver Transplantation Center, Beijing Friendship Hospital, Capital Medical University were studied retrospectively between December 2014 and March 2022. Relevant clinical parameters were collected and analyzed, including patient and graft survivals, complications, portal vein blood flow of residual liver and graft, abdominal drainage, and biochemical indexes of liver function.

Results There were eight males and four females aged 14 to 66 years. The model for end-stage liver disease scores were 1 to 15 points, and Child-Pugh scores were 6 to 11 points. The grafts were derived from living donors in 9 cases, from split cadaveric donors in 2 cases, and from the whole cadaveric liver of child in 1 patient. The graft recipient body weight ratios of 3 cadaveric donor livers were 0.79% to 0.90%, and of 9 living donor livers were 0.31% to 0.55%. During a median follow-up time of 51 (4-80) months, both patient and graft survival rates are 100%. Complications included outflow tract torsion in 2 cases, acute rejection in 1 case, bile leakage in 1 case, and thyroid cancer at the later stage of follow-up in 1 case, all of which were cured. Five patients with HBV-related cirrhosis accepted second-stage operation for native liver resection 1-3 months posttransplant. There was no complication of portal hypertension. The measurement of ultrasonic portal vein blood flow velocity showed that the blood flow of residual liver decreased significantly in the early stage after the operation and maintained a shallow blood flow velocity or occlusion in the long term after the operation, and the blood flow of transplanted liver was stable. The average portal vein pressures were 27mmHg and 13mmHg before and after graft reperfusion. Five cases accepted portal flow modulation. No small-for-size syndrome was observed. The living donors all recovered uneventfully.

Conclusions Auxiliary liver transplantation with small grafts can be a safe and feasible therapeutic approach in patients with severe portal hypertension related to cirrhotic liver disease. This may promote the development of living donor left lobe donation and split liver transplantation. However, auxiliary liver transplantation is a complex surgical technique with a high potential risk of surgical complications. Therefore, this approach is currently limited to centers that are skilled in living donor liver transplantation and have the capacity to monitor and manage complications.