Video Symposium

Unusual Donor Hepatectomy in Adult Living Donor Liver Transplantation

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Among many factors that influence the post-transplant outcome of the adult living donor LT, the graft size and the donor's safety are of the greatest importance. The author had included the donors who met the criteria: age less than 55, future liver volume> 30% of total liver volume and fatty liver less than 30%. We, however, experienced mortality in one of the modified right liver donors whose remnant left liver volume was 30% of total liver volume and had fatty change of 15% in March 2006. This 55-year old patient died of small-for-size phenomenon and septic shock which lead to multiorgan failure 2 months after LT. After this event, the indication of liver donation was revised to: age less than 50, remnant liver volume>35% of total liver volume, and fatty liver <30%, and the drop-out rate of donor went up to 28.4%. Soon after in 2007, six cases of liver transplantation was performed using dual left lobe graft, and in 2008, use of right hepatic vein territorial graft and right posterior graft were even considered.

From April 2008 to February 2012, 122 consecutive liver transplantations were performed. Among the recipients, 78 patients underwent adult living donor LT. The extended right lobe graft was used in 8 cases, modified right lobe grafts in 22 cases, right lobe grafts in 14, left lobe graft in 7, dual left lobe graft in 1, right hepatic vein territorial graft in 12, and right posterior graft in 14 cases. The two uncommonly used donor hepatectomies: right hepatic vein territory hepatectomy and right posterior sectionectomy were used in 33.3%, giving solution to high drop-out rate of potential living donors, observed before 2007.

Two unusual donor hepatectomies are illustrated in this video presentation. Notably, the postoperative recovery after right hepatic vein territory hepatectomy was similar to that of right lobectomy, whereas extent of splenomegaly was significantly lower in right lobectomy. The selection of graft procurement procedure was based on volume of the right posterior section (GRWR), which must be greater than 0.8% (0.75~1.28%) rather than by portal vein anatomy. It is considered that the participation of microsurgeon specialized in hepatic artery anastomosis is necessary in living donor liver transplantation which uses the right posterior section graft.

All donors and recipients who underwent liver transplantation with unusual donor hepatectomies survived. Yet, one of the recipients with situs inversus totalis experienced biliary anastomotic stricture which was managed by 4 months course of radiologic intervention.