

Hiroto Egawa

Professor

Department of Surgery

Tokyo Women's Medical University

8-1, Kawada-cho, Shinjuku-ku, Tokyo, 162-8666, Japan

Phone: +81-3-3353-8111 Ext 28537

FAX: +81-3-5269-7508

E-mail: egawa@ige.twmu.ac.jp

How far can we go on donor selection: age and volume

The expansion of Living donor liver transplantation (LDLT) to adult patients created the need to overcome small-for-size syndrome. To obtain a larger volume, innovations such as the left lobe graft with the caudate lobe, the right lobe graft, and the extended right lobe graft were developed. Dual graft LDLT was also developed in Korea. The upper limit of age of living donors also has been challenged. Success reports of challenge in large graft procurement and senior donors have been published proudly.

A donor died after extended right lobectomy at Kyoto University in early 2000s. The Kyoto group was aggressively performing extended right lobectomy at that time. The age was 40's, expected remnant liver volume was 37% after right lobectomy, CT density ratio between the liver and the spleen was 1.0. Due to intraoperative decision, the operation was changed to extended right lobectomy and the donor fell into hepatic failure and died despite liver transplantation. A third-party investigation revealed that, the donor had non-alcoholic steatohepatitis even though the degree of macrovesicular steatosis was 30% and the remnant liver volume was less than 25% after unexpected extended-right-lobectomy.

Dr. Kim and his team pushed the boundaries of donor safety successfully and published distinguished reports. A 76-year-old donor gave her right lobe to her 75-year-old husband with hepatocellular carcinoma. Further, they reported 28 donors with estimated remnant liver volume less than 30% who had similar results compared with donors with estimated

remnant volume greater than 30%. The key points in this report were that all donors with remnant volume less than 30% were younger than 50 years and the middle hepatic vein was preserved in all these donors.

Donor safety is the most critical rule in LDLT. We can safely challenge volume and age, but we have to keep a good balance among age, remnant volume, and quality of the liver for donor safety.