56 (12.7%) had trifurcation, 71 (16.13%) had right posterior segment duct (RPSD) draining into left hepatic duct (LHD), 66 (14.09%) had RASD draining into LHD, and 7 (1.5%) had RPSD draining into cystic duct. Of the 61 left lobe grafts, 55 (90%) had standard anatomy. Multiple duct openings were seen in 33% patients. The presence of 2 or 3 ducts requiring Roux-Y HJ (12%) or cystic duct (4.2%) usage were considered Class 2. Donors with >3 ducts at hilum or significant duct opening into the opposite lobe precluded donation and were considered Class 3. Overall, on the basis of imaging among 501 donors, 85% were Class 1, 13% Class 2, and 2% Class 3 donors.

Conclusion: Variations in hilar anatomy are a rule rather than exception and require innovative reconstruction. Classification of donors based on anatomic variations has direct implications on the selection of donors and also helps in operative planning.

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WHICH IS BETTER? DUCT-TO-DUCT/ HEPATICOJEJUNOSTOMY/BOTH—IN A RIGHT LOBE GRAFT WITH TWO DUCTS IN ADULT LIVING-RELATED LIVER TRANSPLANTATION

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Background: Even though biliary anatomy variations were used to preclude liver donation in the initial days, it is not uncommon to accept a precious donor with 2 ducts on a right lobe graft in adult living-related liver transplantation (ALRLT). The aim is to study the best option of ductal reconstruction in ALRLT when there are 2 ducts to be anastomosed.

Method: We retrospectively analyzed our series of ALRLT from October 2006 to May 2011. Of 585 grafts, 107 right lobe grafts had 2 ducts to be reconstructed. These were grouped into 3: Group A ($n=71$) who underwent duct-to-duct anastomosis with or without ductoplasty, Group B ($n=8$) who got hepaticojejunostomy with or without ductoplasty, and Group C ($n=28$) who got 1 duct-to-duct and the other hepaticojejunostomy. Outcome in these 3 groups was analyzed. The parameters taken into consideration were bile leak without sepsis and collection, biloma alone requiring early interventions like percutaneous drainage, re-exploration for biliary issue, conversion of duct-to-duct to hepaticojejunostomy, stricture formation, need for late endoscopic, and/or percutaneous intervention and mortality. The data were analyzed using Predictive Analytics SoftWare version 18.

Result: Group A had the majority of patients. Of 71 patients, 17 (23.94%) had bile leaks. Of these, 11 patients were re-explored for biliary sepsis and converted into hepaticojejunostomies, 9 patients underwent early ERCP for bile leaks, 24 (33.80%) patients developed biliary anastomotic stricture for which ERCP and stenting was done and 7 patients required rendezvous procedure. Nine (12.67%) patients expired in the early postoperative period. In Group B, there were 8 patients and 3 (37.5%) of them developed controlled bile leak which settled over 3 weeks, but no other complication or mortality in this group. In Group C, there were 28 patients, but only 2 (7.4%) developed bile leak which improved without any interventions and there were no mortality too.

Conclusion: In our experience, the best option for ductal reconstruction when there were 2 ducts in ALRLT is 1 sectorial duct to the common hepatic duct and the other as hepaticojejunostomy. This method has the least complication rate and best results.

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RIGHT POSTERIOR SECTORAL GRAFT PROCUREMENT IS ALWAYS POSSIBLE IF RIGHT POSTERIOR SECTORAL PORTAL VEIN CAN BE DIVIDED EXTRAHEPATICALLY

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Background: In adult living-related liver transplantation (ALRLT), the availability of donors is limited and encountering a precious donor with difficult anatomy/volumetry is not uncommon. The right posterior sector graft (RPSG) was introduced in ALRLT to overcome the graft-size mismatch when the donor liver had a small left lobe (low remnant volume). The feasibility of RPSG is more dependent on the portal venous anatomical considerations than on the volumetry parameters. This study highlights the importance of the portal venous anatomy in tailoring the type of donor hepatectomy for ALRLT.

Materials and Method: We performed 3 cases of RPSG of 80 consecutive ALRLTs done from January to April 2011. Rest of them was standard right lobe grafts with/without middle hepatic vein or left lobe grafts. A remnant volume of >30%, graft recipient weight ratio (GRWR) >0.7 and the presence of extrahepatic posterior sector portal vein on CT angiography were the important factors in the selection criteria for all the 3 cases. In all 3 patients, the presenting donor was the only donor they had (precious donor). In 2 donors, the standard right lobe graft resulted in a low remnant liver volume. One donor had unfavorable biliary anatomy for right/left lobe grafts giving >2

ducts in the graft or the high insertion of 1 of the ducts of the graft endangering the biliary tree of the remnant liver.

Result: The RPSG gave single posterior sector duct in all of the donors. The time taken for hilar dissection was similar in RPSG and in standard right lobe grafts. This is mainly attributable to the easy access to the extrahepatic posterior sector portal vein as predicted by the pre-operative CT angiography. The parenchymal transaction time was longer in the RPSG than in the right/left lobe graft. The diameter of artery was acceptable though the length was smaller than the right/left lobe graft. The biliary ductal length and diameter were good. All 3 donors recovered well. Two recipients recovered well with peak bilirubin and prothrombin time/INR similar to the standard right/left lobe ALRLT. One recipient had a slow but steady recovery, possibly due to small-for-size syndrome.

Conclusion: In our experience, the extrahepatic division of portal vein was crucial in deciding this type of graft, as we could always get acceptable length and diameter of artery and duct. Thus, our graft selection criteria for RPSG are useful for optimizing the use of RPSGs in donors with small remnant volume or unfavorable anatomy.

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COMPARISON OF TRANSFUSION REQUIREMENTS BETWEEN DECEASED DONOR LIVER TRANSPLANTATION AND LIVING DONOR LIVER TRANSPLANTATION—SINGLE CENTER'S EXPERIENCE

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Background: Living donor liver transplantation (LDLT) has been implemented as an alternative to the deceased donor liver transplantation (DDLT) due to the shortage of cadaveric organs. We compared the pre-operative variables with a specific aim to compare the intra-operative transfusion requirement between recipients of LDLT and recipients of DDLT.

Method: Data were abstracted from the review of patient medical records. Pre-operative Model for End-stage Liver Disease (MELD) score, liver donor's age, baseline coagulation laboratory results, intra-operative transfusion of blood components and the volume of intra-operative salvaged blood re-infused for 36 adult-to-adult LDLTs and 65 adult DDLTs during March 2003 and April 2011 were reviewed. Statistical analysis was done by Student's *t* test, the values were expressed as mean and standard deviation and *P* value of 0.05 was considered to be statistically significant.

Result: Liver donor's age was significantly lower for LDLT group (mean 31.86 years vs 39.08 years, $P=0.01$). LDLT patients received significantly lower volume of total blood

product (mean 3673 mL vs 5645 mL, $P=0.01$), lower number of packed red blood cell unit (mean 5.86 vs 9.21, $P=0.01$), lower number of fresh frozen plasma unit (mean 6.69 vs 10.48, $P=0.01$) and lower apheresed platelet units (mean 1.0 vs 1.56, $P=0.03$), compared with DDLT patients. Five (13.8%) patients in LDLT group and 19 (29.2%) patients in DDLT group received massive transfusions.

Conclusion: Recipients of LDLT received significantly lower blood products than that of DDLT. Patients who undergo LDLT have a better preserved coagulation status and undergo transplantation earlier; hence, they received lesser blood products, whereas DDLT recipients wait for longer time for cadaveric allograft and tend to be sicker than LDLT recipients at the time of transplantation.

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AN UNUSUAL CASE FOR LIVER TRANSPLANTATION IN A CHILD

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Background: Homozygous familial hypercholesterolemia (HFHC) is an inherited metabolic disease autosomal-dominant defect on chromosome 19 that leads to decreased catabolism of low-density lipoprotein (LDL) cholesterol and childhood coronary artery disease (CAD). Liver transplantation is a therapeutic option to correct this metabolic disorder.

Case Report: A 12-year-old boy presented to a local hospital with acute antero-septal myocardial infarction and pulmonary edema. He was a known case of HFHC with a history of death of his father and grandparents due to CAD at a younger age. He was referred to our hospital for further evaluation and management. On further evaluation, he was found to be having double vessel disease, left main coronary artery and right coronary artery, moderate left ventricular (LV) dysfunction, ejection fraction 35%, aortic stenosis due to atheromatous deposits with a pressure gradient of 78/44 mmHg, and severe hyperlipidemia; total cholesterol 920 mg/dL, LDL 540 mg/dL, and triglycerides 180 mg/dL. Although liver transplantation seemed the imminent treatment, the severity of LV dysfunction and LV outflow obstruction due to cholesterol deposits gave serious concerns on his ability to withstand this surgery. He was accordingly managed with a coronary artery bypass grafting 4 grafts and reconstruction of the aortic outflow tract. Subsequently after 2 months, he underwent living donor liver transplantation. A left lobe graft from his mother was transplanted. Intra-operative anesthetic management was done as per standard protocol and the patient tolerated the procedure well; he had a smooth recovery and was discharged on the 11th postoperative day.

Discussion: Metabolic disorders constitute only a small percentage of liver transplants done today. Hypercholesterolemia