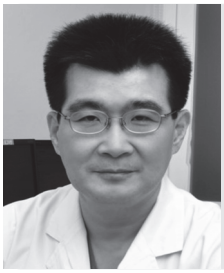

# Important Variations for LDLT

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In liver anatomy, the most common variation is accepted as the normal anatomy, thus one third of anatomical variations are considered as being anomalous. Since current anatomical classifications are primarily based on the inflow anatomy, portal vein anomaly is the key anatomical variation. Portal vein variations are divided into 4 types. Type III portal vein can be reconstructed with autologous Y-graft interposition, but type IV requires special attention because it is often associated with other noticeable anomalies. If type III portal vein is coupled with excessively large right posterior section, it is a good indication for donation of the right posterior section graft. Type III portal vein is also associated with double right hepatic arteries, thus requiring separate dual reconstruction. For left liver harvest, multiple arterial supplies (three or more small arteries) require special attention because of difficulty in reconstruction and subsequent risk of arterial complications). There is a wide range of variation in hepatic venous drainage, but most of them have been overcome by interposition of vessel grafts. Right posterior hepatic vein can be reconstructed with the right hepatic vein through unification venoplasty. Multiple inferior hepatic veins also can be reconstructed after unification venoplasty, thus less attention was necessary for their harvest. Variation of the left hepatic vein is important for pediatric liver transplantation because of vein size mismatching in infant recipients. Bile duct anatomy is currently the point of concern to date, because biliary complication is still not preventable through technical innovation. Accurate assessment of the bile duct anatomy is the most important step, thus it is strongly recommended to perform intraoperative cholangiogram because preoperative evaluation with magnetic resonance cholangiography is not always reliable. The anatomical assessment for donor livers is the most important step to ensure donor safety, thus integrated understanding of the whole liver anatomy is essential for every case of living donor liver transplantation. Availability of innovative surgical techniques is also important to overcome many anatomical variations.