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## **Complicated Back-table Surgery in LDLT - Multiple openings in HV/PV/BD**

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Back-table bench surgery is crucial in living donor liver transplantation (LDLT) as preparing the liver graft before implanting into the recipient. The critical points in preparing live liver graft includes the complexity of vascular and bile duct (BD) anatomy, ensuring optimal portal vein (PV) inflow and hepatic vein (HV) outflow, and reconstruction if needed.

During back-table preparation, the graft should be kept immersed in cold preservation solution to prevent warm ischemic injury. Flushing of BD is routinely performed. Small bile duct of caudate lobe is closed with 6-0 polypropylene suture. In our team, no ductoplasty is conducted at the back-table. The ductoplasty of donor graft and biliary reconstruction are carried out by the microsurgeon under the microscope in our institute since 2006.

In donors with double right PVs, short common trunk of PV, or insufficient PV length may encounter. Reconstruction into a common orifice or elongation of PV length by patch venoplasty using cryopreserved iliac vessels or autogenous venous patches should be carefully done before implantation of graft. Adequate outflow reconstruction is crucial to minimize the risk of allograft congestion. For right lobe graft without harvesting middle hepatic vein (MHV), reconstructions of the segment V and VIII tributaries are mandatory to avoid congestion of anterior segment in right liver graft. Graft outflow with larger size, significant flow, or severe sectoral congestion, should be reconstructed, either by direct venoplasty, all-in-one patch venoplasty, or using an interposition graft.

With the shortage of deceased liver graft, and cryopreserved iliac vessels, interposition vascular grafts by using of greater saphenous vein, gonadal vein, and portal vein from recipients, bovine pericardium, and synthetic graft with acceptable short-term patency rates have been described. Nowadays, the use of autologous materials as a patch or tubular graft, such as peritoneum and falciform ligament, have demonstrated the similar effect and shown to be a safe and feasible procedure.