

LETTER TO THE EDITORS

Donor double common bile duct in living donor liver transplantation

doi:10.1111/tri.12619

Dear Sirs,

We read with interest the recent article by Iwasaki *et al.* [1] focusing on the safety in living donor liver transplantation (LDLT). We confronted a living donor case of double common bile duct (DCBD), an extremely rare congenital anomaly which could involve surgical pitfalls that could lead to serious injuries of the bile duct and make biliary reconstruction more complicated in LDLT, especially in the recovering of the right liver lobe [2,3]. We thus had better reconsider the importance of obtaining precise information about the biliary anatomy during LDLT.

The living donor was a 47-year-old female without any significant medical history. A standard living donor left lateral hepatectomy was performed. Three sessions of intraoperative cholangiography (IOC) with C-arm were performed routinely, including before the hilar dissection with a clip placed on the proposed site of the biliary transection, before the division of the bile duct and after the hepatectomy. Real-time IOC with C-arm in the first session revealed the DCBD draining the same portion of the duodenum (Fig. 1a). As this bile duct anomaly did not influence the recovering of the left lateral segment (LLS) graft, the division of left bile duct was performed after the

confirming IOC in the second session. The final IOC was performed after obtaining the LLS, and no injury of remnant bile duct was confirmed (Fig. 1b). A careful review of the preoperative computed tomography revealed three ducts in line, including the cystic duct, and the right and left common bile ducts (Fig. 1c).

Choi *et al.* [3] proposed a morphological classification system of DCBD. According to the report, our case was classified as a type Vb anomaly. Only two cases of this type have been reported [3,4]. In right lobe LDLT, there might be two ways of performing biliary resection after dividing the intrahepatic communicating channel: with or without resection of right common bile duct. In both methods, it is crucial to avoid making a graft with two or more ducts, as the presence of multiple ducts can be a significant risk factor for the development of biliary complications. To ensure the safety of the donor, preoperative evaluations and careful intraoperative techniques are needed, especially with regard to the biliary anatomy. Regarding the biliary anatomy, real-time IOC with C-arm is still a paramount imaging technique, as it provides precise information [5]. In our centre, the preoperative imaging of the biliary anatomy is not routinely performed for potential donor candidates because of the

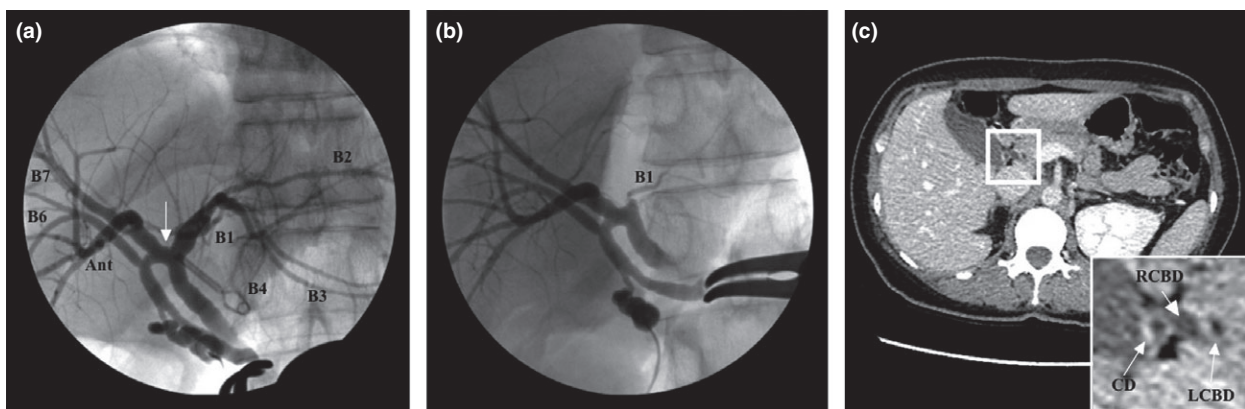


Figure 1 (a) An IOC image showing the single biliary drainage of DCBD with a proximal communicating channel (white arrow). The cystic bile duct is fused with the right common bile duct. (b) An IOC image demonstrating an optimal site of biliary transection (white arrow). (c) Preoperative computed tomography showing the cystic duct (CD), the right common bile duct (RCBD) and the left common bile duct (LCBD).

risk of allergic reaction and cost [6,7]. However, this case suggests that, for the safety of donor candidates, we need to reconsider the indications of preoperative biliary anatomical assessment for the safety of donor candidates.

In conclusion, very careful attention to the anatomy, including DCBD, is crucial when recovering from a living donor. IOC is capable of identifying DCBD during living donor hepatectomy. Our experience shows that IOC is still an essential method for avoiding unnecessary biliary injuries and complicated biliary reconstruction.

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Conflict of interest

The author has no conflict of interest to disclose.

Funding

No funding.

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