

MRCP as a Pre-Operative Tool for Predicting Variant Biliary Anatomy in Living Related Liver Donors

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Abstract : Purpose: Biliary complications represent the most common cause of morbidity in living related liver donor transplantation and detailed preoperative evaluation of biliary anatomic variants is crucial for safe patient selection and improved surgical outcomes. Purpose of this study is to determine the accuracy of preoperative MRCP in predicting biliary variations when compared to intraoperative cholangiography in living related liver donors. Materials and Methods: From 44 potential donors, 40 consecutive living related liver donors (13 females and 28 males) underwent donor hepatectomy at our centre from April 2012 to August 2013. MRCP and IOC of all patients were retrospectively reviewed separately by two radiologists and a transplant surgeon. MRCP was performed on 1.5 Tesla MR magnets using breath-hold heavily T2 weighted radial slab technique. One patient was excluded due to suboptimal MRCP. The accuracy of MRCP for variant biliary anatomy was calculated. Results: MRCP accurately predicted the biliary anatomy in 38 of 39 cases (97 %). Standard biliary anatomy was predicted by MRCP in 25 (64 %) donors (100% sensitivity). Variant biliary anatomy was noted in 14 (36 %) IOCs of which MRCP predicted precise anatomy of 13 variants (93 % sensitivity). The two most common variations were drainage of the RPSD into the LHD (50%) and the triple confluence of the RASD, RPSD and LHD (21%). Conclusion: MRCP is a sensitive imaging tool for precise pre-operative mapping of biliary variations which is critical to surgical decision making in living related liver transplantation.

Keywords : intraoperative cholangiogram, liver transplantation, living related donors, magnetic resonance cholangio-pancreaticogram (MRCP)

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