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Topic : **Liver**

OPTIMIZING LIVER EX VIVO SPLITTING WITH INDOCYANINE GREEN: A FLUORESCENCE-GUIDED METHODOLOGY

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Background : In liver transplantation, volume reduction may be necessary when there's a size discrepancy between donor and recipient organs, or in cases of auxiliary partial orthotopic liver transplantation (APOLT). While ex vivo splitting offers shorter cold ischemic time compared to in situ splitting, it poses higher risks of vascular and biliary complications.

Methods : We developed an ICG-guided technique for ex vivo liver splitting. The procedure involves: 1) identifying and obstructing the outflow of the target liver portion, 2) injecting ICG into either the hepatic artery or portal vein, 3) using fluoroscopy to confirm the resection margin and demarcation line, and 4) performing parenchymal resection along the identified boundary. ICG was selected due to its unique property of being metabolized in the liver and excreted through the biliary tract.

Results : This technique was successfully applied in two cases at our institution: one for liver size reduction in transplantation and another for APOLT. Neither case experienced surgical complications related to the biliary system or vessels.

Conclusions : ICG-guided ex vivo liver splitting appears to be a safe and effective technique for hepatic volume reduction in transplantation cases, potentially offering improved precision in identifying crucial anatomical structures during the procedure.

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