

E08

Demarcating the exact midplane of the liver using indocyanine green near-infrared fluorescence camera during laparoscopic donor hepatectomy

Suk Kyun Hong, Kyung-Suk Suh, Kyung Chul Yoon, Jeong-Moo Lee, Jae-Hyung Cho, Nam-Joon Yi, Kwang-Woong Lee (Seoul, Korea)

¹*Department of Surgery, Seoul National University College of Medicine, Seoul, Korea*

**nobel1210@naver.com, E-mail of presenting author*

***kssuh2000@gmail.com, E-mail of corresponding author*

Purpose:

Precise dissection of the midplane is important to minimize exposure of small intrahepatic Glisson branches and thus decrease bleeding and bile leakage. This is especially important in donor hepatectomy to prevent any problem. However, it is not easy to determine the exact midplane under laparoscopic view. The aim of this study is report the effectiveness of indocyanine green (ICG) near-infrared fluorescence camera in laparoscopic donor hepatectomy focusing on demarcating.

Methods:

Data from 85 consecutive living donors who underwent pure 3D laparoscopic hepatectomy between May 2016 and May 2017, including 46 donors with intraoperative videos recorded and saved were retrospectively analyzed. Available 46 videos were retrospectively reviewed for quantitative comparison between natural laparoscopic view and ICG fluorescence camera view. Lightness of HSL color model was calculated at right and left hemiliver both in natural laparoscopic view and ICG camera view and compared.

Results:

ICG (0.025 mg/kg) was injected intravenously after temporarily clamping corresponding hepatic artery and portal vein and it was enough in all cases to demarcate the midplane and later determine the optimal bile duct division point. The difference of lightness between clamped area and non-clamped area was significantly higher in ICG camera view (34.0 ± 4.0 vs 106.6 ± 43.0 ; $P < 0.001$).

Conclusion:

Demarcating the exact midplane of the liver during laparoscopic donor hepatectomy was easier and effective under ICG fluorescent camera view.