

Development Process Of Minimally Invasive Living Donor Liver Transplantation: From Pure Laparoscopic Explant Hepatectomy To Robotic Graft Implantation

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Background : With the accumulation of experience in pure laparoscopic hepatectomy, including donor hepatectomy, our center initiated a minimally invasive living donor liver transplantation (LDLT) program since March 2020. The aim of this study is to share our development process of minimally invasive LDLT.

Methods : Medical records and videos of patients who underwent more than pure laparoscopic explant hepatectomy were retrospectively reviewed. Recipients, donors, and their families were informed of the innovative nature of the procedure and its potential advantages and disadvantages. Written informed consent was obtained from all the participants.

Results : Three patients successfully underwent pure laparoscopic explant hepatectomy and graft implantation using upper midline incision. Next step was pure laparoscopic explant hepatectomy followed by pure laparoscopic graft implantation, which was inserted through a suprapubic incision. Finally, pure laparoscopic explant hepatectomy and hybrid laparoscopic/robotic graft implantation was successfully performed.

Conclusions : Minimally invasive LDLT can be performed in the era of minimally invasive surgery when performed by a highly experienced surgeon and transplantation team. Of course, further studies with larger sample sizes are needed to confirm its safety and feasibility.

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