

Abstract Type : Oral Presentation
Abstract Submission No. : F-004979

Laparoscopic donor hepatectomy in settings of pediatric LDLT: single center experience

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Introduction: The mini-invasive (MIS) approach to living donor hepatectomy is a current trend in experienced centers. At the same time, there are only a few reports describing the utility of laparoscopic donor hepatectomy (LDH) in settings of pediatric LDLT. We aimed to provide our own experience as a path to implementing the approach to routine practice.

Methods: Laparoscopic donor hepatectomy was used in 276 cases of pediatric LDLT between May 2016 and August 2022. Laparoscopic left lateral sectionectomy (lapLLS) was performed in 240 cases, including 3 cases of simultaneous LapLLS and nephrectomy in the same donor. Laparoscopic living donor left hepatectomy (LapLDLH) was applied in 25 cases, including 2 cases of simultaneous LapLDLH and nephrectomy in the same donor. Laparoscopic right hepatectomy in a living donor (LapLDRH) was performed in 11 cases for LDLT in adolescent recipients.

Results: In the LapLLS group, the blood loss was 50 ml (20-400 ml), the median operation time was 203 min (120-475 min) and the median length of the hospital stay (LOS) was 5 (2-19) days. The LapLDLH and LapLDRH groups were characterized by higher median blood loss 320 ml (100-700 ml) and 240 ml (100-400 ml) respectively; and also a longer operative time of 322 min (210-415 min), 380 min (280-470 min). The complication rate was similar to open procedure in both donors and recipients.

Conclusion: The left-sided graft procurement (LLS and LL) is a more demanded procedure in settings of pediatric LDLT. The laparoscopic approach for living donors demonstrates all the advantages of MIS, with preserving recipient outcomes.