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Outcomes after robotic donor hepatectomy in 48 consecutive live donors

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Introduction : Laparoscopic donor right hepatectomy has been performed in a few centers by expert surgeons. Robotic system is one of the tools for laparoscopic liver resection, however, there have been few studies about surgical outcomes after robotic living donor hepatectomy, especially for a right graft.

Methods : From Apr. 2016 to Jan 2019, 48 liver donors received robotic donor hepatectomy (45 right grafts, two left grafts and one left lateral graft) in our institute. Short-term outcomes were evaluated in a prospective way.

Results : The median age of donors was 29.1 years and 24 donors were male. The mean right graft volume was 714.0 ml (range, 517-919). The mean operative time and blood loss were 500 min and 112.4 ml, respectively. The median warm ischemic demarcation time was 14 min. The first case was converted to mini-laparotomy (2.1%) due to injury to the left bile duct. There were three events related to hem-o-lok including dislodgement from the right bile duct, the inferior hepatic vein and the right hepatic artery. The first two events were managed during the operation, but an emergency laparotomy was needed to control bleeding from the right hepatic artery. Postoperative complications occurred in eleven patients and severe complication more than grade III occurred in two patients (one hepatic artery bleeding and one bladder injury). The mean hospital stay was 9 days.

Conclusions : From our experience, robotic living donor hepatectomy is feasible and safe at expert hands in selected liver donors. However, hem-o-lok should be cautiously used due to the possibility of the dislodgement.

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