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Early Experiences Of Robot Single Plus One Port Donor Hepatectomy, Comparison Between Laparoscopic Donor Hepatectomy

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Background : Robotic surgery is being performed a lot all over the world, and complex surgeries are also being attempted with robots. Donor hepatectomy is also difficult because of accurate anatomical comprehension of liver and advanced surgical technique are needed, but it is being performed with a robot nowadays. The purpose of this study is to compare the laparoscopic donor hepatectomy and the robot donor hepatectomy and to find out the advantages of robotic surgery.

Methods : We retrospectively reviewed the cases performed in Gangnam severance Hospital between November, 1 2018 with December, 31 2022. During this time, 61 Patients received laparoscopic donor hepatectomy and 9 patients received single plus one robot donor hepatectomy. Except left side hepatectomy, laparoscopic right side hepatectomy were performed 56 patients (right hepatectomy, 46 patients, right extended hepatectomy 10 patients) and single plus one robot right hepatectomy were performed 7 patients.

Results : All patient received operation without open conversion. The overall median operation time of laparoscopic donor hepatectomy was 375 ± 62 mins and the median intraoperative bleeding amount of laparoscopic donor hepatectomy was 443 ± 224 ml. For robot donor hepatectomy, median operation time was 389 ± 42 and the median intraoperative bleeding amount was 187 ± 45 ml. Comparing warm ischemic time and post operative hospital stay duration, 8.2 ± 2.0 mins and 13.1 ± 4.1 mins, 7.52 ± 2.4 days and 8.2 ± 0.9 days for Laparoscopic donor hepatectomy and robot donor hepatectomy respectively.

Conclusions : Donor hepatectomy is complicated and difficulty operation. However, these data suggest that performing robotic donor hepatectomy by expert surgeon has some advantages over laparoscopic donor hepatectomy. If the sample size of robotic cases is increased as much as laparoscopic cases, more accurate data can be obtained later.

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