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Stepwise development of robotic donor right hepatectomy according to the anatomical variations in the hilum and the graft volume.

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Introduction : Initial strict selections of donor without anatomical variations are recommended for minimally invasive living donor liver transplantation (LDLT) program because the donor safety is the most paramount. In this study, we introduced our stepwise development of robotic donor LDLT from donors with from favorable to unfavorable anatomies.

Methods : From Apr. 2016 to Oct. 2020, 80 donors received robotic donor right hepatectomy. All donors were divided according to the variations of the portal vein and bile duct and the graft volume (>800 cc). Donors who had at least one variable that satisfy beyond the three extended criteria were defined as 'unfavorable group'. The proportion of variations was analyzed according to the four periods and perioperative outcomes were compared between favorable and unfavorable group

Results : Among 80 cases, portal vein variation and bile duct variation were observed 10 cases and 22 cases, respectively. Donors who had graft weight more than 800 g were 22 cases. Unfavorable group donors were 8 cases in 1st and 2nd period, respectively. In 3rd period, 9 donors were unfavorable group. In recent 20 cases, 14 donors were unfavorable group. Comparing the perioperative outcomes between favorable and 'unfavorable group, there were no significant differences regarding total operative time, warm ischemic time, estimated blood loss and postoperative complication.

Conclusions : Stepwise development of robotic donor right hepatectomy showed comparable perioperative outcomes in donor with the anatomical variations in the hilum and larger graft volume and seems to a reasonable way for a safe and successful minimally invasive LDLT program.

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