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## Prospective multicenter study for robotic anatomic major liver resection

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**Introduction**: Robotic surgical system had been widely accepted in various surgical field with the expectations of overcoming the limitation of laparoscopic surgery. However, robotic liver resection had not generalized, so far. Thus, this study aimed to evaluate the feasibility and safety of robotic major liver resection by prospective multicenter study.

**Methods** : From July 2017 to December 2018, five surgeons who were novice in robotic liver resection but experienced a lot in open and laparoscopic liver resection in five tertiary hospitals performed 46 cases of robotic major anatomical liver resection. Perioperative patient's clinical data and surgical data were prospectively collected. All operations were performed identical procedures for dissection and hemostasis and were totally robotic approach.

**Results** : 22 cases of left hemihepatectomy, 1 case of extended left hemihepatectomy, 14 cases of right hemihepatectomy, 2 cases of right anterior sectionectomy, 6 cases of right posterior sectionectomy, and one cases of central bisectionectomy were performed. Total operation time was  $378.58 \pm 124.31$  ( $190 \sim 696$ ) minutes and estimated intraoperative blood loss was  $276.67 \pm 397.41$  mL (minimal  $\sim 2600$ mL). Overall complications were developed in 16 cases (34/8%). In terms of severe surgical complications, there were 3 cases of postoperative fluid collection treated with drainage and one case of bile leakage treated with percutaneous trans-hepatic biliary drainage. Only one case out of 46 cases was converted to the conventional open left hemihepatectomy by bleeding.

**Conclusions** : In this study, robotic anatomic major liver resection might be safely performed even by robotic beginners but advanced open and laparoscopic liver surgeons.

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