

LAPAROSCOPIC RIGHT ANTERIOR OR POSTERIOR SECTIONECTOMY FOR HCC: SURGICAL OUTCOMES BASED ON SURGEON'S LEARNING CURVE

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Background : Complications in laparoscopic liver resection (LLR) often vary with surgical proficiency. This study compared perioperative and long-term outcomes of laparoscopic versus open liver resections for the most challenging procedures—right anterior (S5, S8) and right posterior (S6, S7) sectionectomies—using propensity score matching, stratified by the LLR learning curve.

Methods : We retrospectively analyzed 180 patients who underwent right anterior or posterior sectionectomies from January 2013 to December 2023. Patients were grouped based on whether their surgeries occurred before or after the peak of the LLR learning curve (15 cases). Propensity score matching was applied to compare outcomes between laparoscopic (LLS) and open (OLS) surgeries within each phase.

Results : Among 180 patients, 74 underwent LLS and 106 underwent OLS. The learning curve for LLR peaked after 15 cases. In the experienced phase of LLR, hospital stays ($p=0.051$), blood loss ($p=0.039$), operative time ($p=0.003$), and postoperative recurrence ($p<0.001$) all improved compared to the learning phase. Although LLS and OLS outcomes were similar during the learning phase, LLS in the experienced phase showed significantly shorter operative times ($p<0.001$), reduced blood loss ($p=0.005$), and shorter hospital stays ($p=0.021$) versus OLS. Overall, LLS led to shorter operative times ($p<0.001$) and shorter hospital stays ($p=0.013$) than OLS, with comparable complication and recurrence rates. No significant differences in long-term survival were observed between groups.

Conclusions : The perioperative benefits of laparoscopic right anterior or posterior sectionectomies emerged only after surgeons surpassed the learning curve. Minimizing this learning phase is essential for patients to fully benefit from laparoscopic liver resection.