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Single-incision Versus Conventional Multiport Laparoscopic Cholecystectomy In Acute Cholecystitis According To Disease Severity

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Background : The safety and feasibility of single-incision laparoscopic cholecystectomy (SILC) for acute cholecystitis (AC) have not yet been confirmed.

Methods : This single-center retrospective study included patients who underwent laparoscopic cholecystectomy (LC) for AC between April 2010 and December 2020. Propensity scores were used to match patients who underwent SILC with those who underwent conventional multiport laparoscopic cholecystectomy (CMLC) in the entire cohort and in the two subgroups (grade I and grade II/III AC).

Results : A total of 1876 patients underwent LC for AC, and 427 (22.8%) underwent SILC. In the propensity score-matched analysis of the entire cohort (404 patients in each group), the length of hospital stay (2.9 vs 3.5 days, $p=0.029$) was shorter in the SILC group than in the CMLC group. No significant differences were observed in open conversion, bile duct injury, operative time, estimated blood loss, or postoperative complications. Subgroup analysis in grade I AC (336 patients in each group) revealed that the patients who underwent SILC showed poorer surgical outcomes than those who underwent CMLC, regarding operation time (57.6 vs 52.4 minutes, $p=0.001$) and estimated blood loss (22.9 vs 13.1 mL, $p=0.006$). The subgroup analysis of grade II/III AC (58 patients in each group) showed no significant differences in surgical outcomes between the two groups. Postoperative pain outcomes were also not significantly different in the two groups, regardless of severity.

Conclusions : This study demonstrated that SILC had similar surgical and pain outcomes to CMLC in patients with AC, however subgroup analysis showed that SILC was associated with poor surgical outcomes than CMLC in grade I AC. Therefore, SILC should be carefully performed in patients with AC by experienced hepatobiliary surgeons.

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