

## Is Single-port Laparoscopic Cholecystectomy Safe? Results of a Systematic Review and Meta-Analysis

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### Objective

To compare short-term results after single-port laparoscopic cholecystectomy (SPLC) and conventional multi-port laparoscopic cholecystectomy (MPLC) reported in RCTs.

### Summary Background Data

Single-port access laparoscopy has recently been proposed to reduce skin incisions and related pain and morbidity.

### Methods

A systematic review of RCTs published as of 31 December 2011 and comparing SPLC versus MPLC was performed (PROSPERO Registration number: CRD42011001880). The primary endpoint was overall morbidity. A fixed-effect model was applied to summate the study outcomes in the meta-analysis, and a random-effect model was used in the sensitivity analysis. The outcome measures were relative risk (RR) and mean difference (MD): a RR <1.0 or a negative MD indicated a more favorable outcome after SPLC. Publication bias was assessed by funnel plot and heterogeneity was tested by the  $I^2$  measure and subgroup analyses.

### Results

A total of 12 RCTs (996 patients) met the inclusion criteria. Mortality was nil in both treatment groups; the overall RR for morbidity was 1.36 (P=0.098); the RR for intraoperative complications was 1.35 (P=0.361); the RR for postoperative complications was 1.36 (P=0.184). The mean operating time was 47.2 min for MPLC and 58.1 min for SPLC (MD 9.47 min; P<0.001). The visual analogue scale (VAS) pain score at 24 h after surgery was 2.96 in patients undergoing MPLC and 2.34 in those undergoing SPLC (MD -0.64; P=0.058).

## Conclusions

Analysis of the 12 RCTs showed no difference in RR for morbidity; the operating time was slightly but significantly longer for SPLC, with a slight but not statistically significant reduction in postoperative pain.