

**E03**

The Effectiveness Of Extremely Low-pressure Pneumoperitoneum On Pain Reduction After Robot-assisted Cholecystectomy

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Background : The robot-assisted cholecystectomy could provide a sufficient surgical field with the extremely low-pressure pneumoperitoneum (ELPP; 4 mmHg) by the robot arm lifting the abdominal wall upward. This study aimed to investigate the effect of ELPP on the postoperative outcomes in benign gallbladder disease.

Methods : A retrospective study was designed to compare the postoperative pain in addition with operation time, estimated blood loss, length of hospital stay, and complication of three types of cholecystectomy for benign gallbladder disease: 75 ELPP single site robot-assisted cholecystectomy (SSRC), 114 standard-pressure pneumoperitoneum (SPP) SSRC and 110 SPP conventional laparoscopic cholecystectomy (CLC).

Results : There was no difference in whole operation time between ELPP SSRC and SPP SSRC group ($p = 0.159$). Postoperative pain score was significantly less in ELPP SSRC group as compared to SPP SSRC or SPP CLC group at 6, 12, and 24 hours ($p = 0.004$, $p = 0.004$, and $p = 0.013$ respectively). The incidence of shoulder pain was also significantly lower in ELPP SSRC group ($p < 0.001$). The rate of postoperative complication and length of stay were not different among the three groups.

Conclusions : This study shows that ELPP technique using robot is feasible without increasing postoperative complications in the process of cholecystectomy and the use of the ELPP can reduce postoperative pain and shoulder pain compared to the use of the SPP.

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