

## Feasibility And Efficacy Of Pure Single-port Robotic Cholecystectomy Using The Da Vinci SP Surgical Platform

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**Background** : Single-incision laparoscopic cholecystectomy, first introduced in 1995, features acceptable cosmetic outcomes and postoperative pain control. The outcomes of single-port cholecystectomy by laparoscopy and robots were recently examined in many studies owing to surgeon and patient preference for minimally invasive surgery. A next-level single-port da Vinci system platform was recently released that features three fully wristed and elbowed instruments and a flexible camera in a single 2.5-cm cannula. This study aimed to evaluate the feasibility and efficacy of robotic cholecystectomy (RC) using the new da Vinci SP system.

**Methods** : In this retrospective observational single-center study, we analyzed the medical records of 304 patients who underwent RC between March 2017 and May 2021.

**Results** : Of the 304 patients, the da Vinci Xi (Xi) was used in 159 and the da Vinci SP (SP) was used in 145. The mean age was 44.9 years in the SP group and 39.8 years in the Xi group. In both groups, the dominant sex was female. Most patients were asymptomatic in both groups, followed by the complaint of abdominal pain. The mean operation time was 45.7 mins in the SP group versus 49.8 mins in the Xi group. The mean docking time of the SP group was shorter than that of the Xi group (5.7 min vs 8.8 min;  $p=0.024$ ). The mean immediate postoperative numerical rating scale (NRS) score was 4.0 in the SP group and 4.3 in the Xi group, showing a significant difference ( $p=0.003$ ). A separate analysis of only patients with acute cholecystitis treated with the da Vinci SP showed that the immediate postoperative NRS score in the acute group was higher than that in the non-acute group, but those for the next 24 hours did not differ significantly between groups.

**Conclusions** : This study demonstrated acceptable results of single-site cholecystectomy using da Vinci SP. Thus, pure single-port RC using the da Vinci SP for various benign gallbladder diseases may be an excellent treatment option.

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