



Optimal indication for single-incision laparoscopic cholecystectomy in benign gallbladder diseases

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Laparoscopic cholecystectomy has become a basic procedure for cholecystectomy due to rapid recovery and cosmetic satisfaction after surgery, and it is currently the primary treatment for most benign gallbladder diseases. Thanks to advances in laparoscopic equipment and techniques, single-incision laparoscopic cholecystectomy (SILC) was introduced. Initially, SILC was performed only on highly selected patients due to the high proficiency required and the potential collision of surgical instruments due to the narrow operating space. However, as surgeons gradually accumulated experience with it and various surgical equipment was introduced, the indications were gradually expanded. Nevertheless, clear indications for SILC have not yet been established. If continuous technological development and large-scale SILC clinical results are accumulated, the indications for SILC will be clearer and can be expanded in the future.

Keywords: Laparoscopy, Cholecystitis, Acute cholecystitis, Surgical wound, Gallbladder

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Laparoscopic cholecystectomy was first performed by Moutet and has now become the standard procedure for cholecystectomy [1]. As surgeons' experience with it has accumulated, laparoscopic cholecystectomy has become common even in patients with severe inflammation, such as acute cholecystitis (AC) or gangrene cholecystitis. Currently, laparoscopic cholecystectomy is the first-line treatment for most benign gallbladder diseases.

Due to surgeons' sufficient experience in laparoscopic surgery and the remarkable development of various laparoscopic surgical equipment, single-incision laparoscopic cholecystectomy (SILC), which improved laparoscopic surgery by one step, was introduced in 1997 [2]. The biggest problem with SILC is the poor movement of the laparoscopic instrument. SILC was initially performed only on highly selected patients due to the high proficiency required and the potential collision of surgical instruments due to the narrow operating space. Many studies have

been conducted on the low safety of SILC in the treatment of AC [3–5]. However, as surgeons gradually accumulated experience with it and various surgical equipment was introduced, the indications were gradually expanded [6]. Nevertheless, clear indications for SILC have not yet been established.

This study [7] analyzed the outcomes of SILC performed on patients with benign gallbladder disease based on a retrospective analysis of single-center cases. To determine the optimal indication of SILC, this study analyzed various factors, including operation time, estimated blood loss, adjacent organ injury, postoperative complications, and length of hospital stay, focusing on difficult surgery and poor postoperative outcome.

As a result, SILC is not recommended for patients with grade II/III AC due to difficult surgery and poor postoperative outcome. Furthermore, SILC should be performed cautiously in patients with grade I AC or a body mass index of ≥ 30 kg/m², taking

into account the surgeon's learning curve. This study is a retrospective study conducted at a single center and has limitations in selection bias. However, it provides valuable data on the optimal indications of SILC, with a focus on difficult surgery and poor postoperative outcome.

To overcome the technical difficulties and introduce SILC as a standard treatment in AC surgery, a prospective randomized study with a larger patient group is required, along with continuous technology development.

NOTES

Conflict of interest

The author has no conflicts of interest to declare.

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