

Outpatient Laparoscopic Cholecystectomy: A Reality

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ABSTRACT

Background: The author reports on his personal experience with outpatient laparoscopic cholecystectomy (LC), focusing on the main guidelines for preoperative and postoperative care and operating technique.

Methods: From January 1, 2000 to December 31, 2000, 71 laparoscopic cholecystectomies were performed on outpatients. The patients remained in the outpatient surgery center for 36 hours. In 4 cases, the operation was converted into laparotomy. Twenty patients remained in the hospital and were discharged 5 to 7 days later. Twelve were rehospitalized due to pathologies that could not be treated at home.

Results: In all 71 cases, a complete remission of the symptoms occurred, and none of the patients died either during the operation or during the postoperative period. Eighty percent of patients were treated in outpatient surgery centers.

Conclusions: With clear guidelines, LC is a major surgical operation that can be performed in outpatient surgery centers without death or other major complications and with very good remission of symptoms.

Key Words: Calculous cholecystitis, Gallbladder disease, Day Hospital, Outpatient surgery center, Guidelines.

INTRODUCTION

Calculous cholecystitis is now treated with laparoscopic cholecystectomy (LC) as a routine procedure. For 20 years, the changeover from open laparotomy to the laparoscopic surgical approach has been increasingly accepted by the scientific community.

However, the issue regarding simple LC treatment in outpatient surgery centers is becoming increasingly relevant. Laparoscopic cholecystectomy allows considerable savings in operating costs, which have been a crucial issue for health administrations since 1995.^{1,2}

Of course, patients have to be carefully selected and guidelines must be strictly complied with in performing the operation as an outpatient procedure.³⁻⁶

In this paper, I report my experience with a number of LC cases that I performed on an outpatient basis in 2000. Patients spent one night in the ward and were then discharged in good health with optimum remission of symptoms.

MATERIALS AND METHODS

From January 1, 2000 to December 31, 2000, I performed an LC on 71 patients at the Monteverdi Day Clinic, Milan, Italy. The requisite indications for the operation were calculous gallbladder disease, acute and chronic cholecystitis, and biliary colic. The absolute contraindications, excluding surgical treatment in an outpatient surgery center, were (1) gallbladder neoplasia, (2) ASA > 3, and (3) living farther away than 3 hours by car from the surgery center where they were to be operated on. Relative contraindications that led to exclusion were being age 75 or older and debilitation.

Twenty-three men (32.40%) and 48 women (67.60%) whose average age was 52 years were operated on. Preoperative diagnostic examinations included routine blood tests, liver-function tests, and an echographic scan of the liver and the bile ducts. An endoscopic retrograde cholangiopancreatography (ERCP) was performed prior to the operation to detect and remove any choledochus calculi in patients where the choledochus (common bile duct) exceeded 1 cm in diameter. An ERCP was per-

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formed on 12 of the 71 (16.90%) patients.

The operating procedure was the same for all patients: CO₂ pneumoperitoneum was established with a maximum pressure of 15 mm Hg. The camera was placed in the umbilical area. The trocar site to manipulate the liver was placed under the right costal arch in the midclavicular line. The left-hand port site was used to raise the bottom of the gallbladder and to bring the portal triad into view, while the port to the right of the navel, 1 cm above the bisecting line, was used for dissecting Calot's triangle. An ordinary electro-surgical device was used for the dissection. Although diagnostic examination to rule choledochus calculi were typically negative, I always performed an operative cholangiogram (using Kumar's forceps) on a routine basis. The periumbilical port was opened under direct vision. When the intestinal loops were visualized, a trocar was introduced and insufflation was initiated to establish pneumoperitoneum. The remaining trocars were inserted under direct vision.

As far as anesthesia is concerned, no standard procedure was followed because different anesthesiologists were involved and general anesthesia was adapted to suit the cardiovascular circumstance of each patient.

RESULTS

Patients stayed only 1 day in the outpatient surgery center and were discharged within 32 hours of admission. Twelve of the 71 (16.90%) patients were rehospitalized the day after discharge for various reasons.

Eight (11.26%) of the 71 patients were transferred to the hospital for further treatment: 4 for a conversion of the operation into a laparotomy (1 for dissection problems caused by a major fibrosis of the gallbladder involving Calot's triangle and the choledochus, 1 for a vascular malformation of the hepatic artery, and 1 for intrahepatic position of the gallbladder, which was almost completely within the liver) and 4 for complicated retention of urine.

The 8 patients who had to remain in the hospital stayed for 5 to 7 days. None of the patients died either during the operation or immediately afterwards or during their stay in the hospital or at home. Operative cholangiography performed on the 71 patients did not reveal any choledochal stones.

DISCUSSION

LC is by now a largely accepted surgical treatment performed by the majority of surgeons. There is a trend to adopt this technique and reduce hospital costs. Of course, LC should be regarded as a major surgical event rather than a common, simple operation. Therefore, because many patients require laparoscopic cholecystectomy, it is advisable to try to reduce the cost of treatment as much as possible. However, it is important to define which cases should be dealt with in an outpatient center and which require a stay in the hospital.

It is advisable to operate in outpatient surgery centers strictly complying with guidelines as noted above. There should be no hesitancy to transfer the patient to the hospital if necessary. Living more than 3 hours by car from the surgery center, debilitation, being age 75 or older, and ASA > 3 are contraindications to treatment in an outpatient surgery center.

A choledochus with a diameter exceeding 1 cm should always be examined with ERCP to remove any possible calculi of the main bile duct. An operative cholangiography using Kumar's forceps is of the greatest importance to assure that the cystic duct and the choledochus are free from calculi. Heeding these guidelines, we have never found any residual calculus in the choledochus during LC.

Patients were kept 1 day in the outpatient surgery center and stayed there 36 hours for observation after the operation. Most of the patients admitted to the hospital after discharge had uncontrollable symptoms.

No specific, consistent treatment was used to prevent postoperative pain, nausea, and vomiting. Medications were individualized for each patient. Many authors, including myself,⁷⁻¹⁰ do not agree on the efficacy of local anesthesia at the trocar site immediately after the operation or on the cholecystectomy bed. The efficacy of antiemetics administered as a matter of routine is also doubtful.^{11,12} Postoperative therapy in the case of LC should be based exclusively on the symptoms present. Irrigation with copious amounts of sterile water (given the high degree of septic status of bile and the irritation blood may cause in the peritoneum) also reduces postoperative pain to a minimum.¹³

The essential points for a successful outpatient LC are a careful selection of patients to undergo elective chole-

cystectomy (Absolute contraindications excluding surgical treatment in an outpatient surgery center are gallbladder neoplasia, ASA > 3, and living more than 3 hours by car from the surgery center where the operation is to take place. Relative contraindications are being age 75 or older and debilitation) and special care in operative technique and in postoperative follow up.

CONCLUSIONS

Defining precise guidelines for outpatient LC is essential. Correct preparation of patients, a precise and accurate operating technique, and the standardization of postoperative care for 24 to 36 hours after surgery are the essential conditions for success of this operation performed in outpatient surgery centers.

References:

1. Ledet WP. Ambulatory cholecystectomy without disability. *Arch Surg.* 1990;125:1434-1435.
2. Moss G. Discharge within 24 hours of elective cholecystectomy. *Arch Surg.* 1986;121:1159-1161.
3. Farha GJ, Green BP, Beamer RL. Laparoscopic cholecystectomy in a freestanding outpatient surgery center. *J Laparoendosc Surg.* 1994;4:291-294.
4. Lillemoe KD, Lin JW, Eng M, et al. Laparoscopic cholecystectomy as a "true" outpatient procedure: initial experience in 130 consecutive patients. *J Gastrointest Surg.* 1999;3:44-49.
5. McKernan BJ. Laparoscopic cholecystectomy. *Am Surg.* 1991;57:309-312.
6. Mjaland O, Raeder J, Aasboe V, Trondsen E, Buasen T. Outpatient laparoscopic cholecystectomy. *Br J Surg.* 1997;84:958-961.
7. Munoz WA, Gartiez D, Cueto J. Use of subdiaphragmatic bupivacaine instillation to control postoperative pain after laparoscopic surgery. *Surg Laparosc Endosc.* 1997;1:6-8.
8. Sarac AM, Aktan AO, Baykan N, Yegen C, Yalin R. The effect and timing of local anesthesia in laparoscopic cholecystectomy. *Surg Laparosc Endosc.* 1996;5:362-366.
9. Szem JW, Hydo L, Badrie PS. A double-blinded evaluation of intraperitoneal bupivacaine vs. saline for the reduction of postoperative pain and nausea after laparoscopic cholecystectomy. *Surg Endosc.* 1996;10:44-48.
10. Ure BM, Troidl H, Spangenberg W, et al. Precisional local anesthesia with bupivacaine and pain after laparoscopic cholecystectomy: a double-blind randomized clinical trial. *Surg Endosc.* 1993;7:482-488.
11. Koivuranta MK, Laara E, Ryhanen PT. Antiemetic efficacy of prophylactic ondansetron in laparoscopic cholecystectomy: a randomised, double-blind, placebo-controlled trial. *Anaesthesia.* 1996;51:52-55.
12. Bliss A, Lewis IH. Prophylactic antiemetics for laparoscopic cholecystectomy: ondansetron versus droperidol plus metoclopramide. *Anesth Analg.* 1997;84:942-943.
13. Narain PK, DeMaria EJ. Initial results of a prospective trial of outpatient laparoscopic cholecystectomy. *Surg Endosc.* 1997;11:1091-1094.