VOLUME - 10, ISSUE - 11, NOVEMBER - 2021 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

General Surgery

# DAY-CARE VERSUS ROUTINE LAPAROSCOPIC CHOLECYSTECTOMY

**Dr Rizwanuddin M. Khwaja*** PG Resident General Surgery, MBBS. *Corresponding Author

**Dr Viraj C. Shinde** MBBS, MS, BMB, FMAS, FAGE, FIAGES

**Dr Urvashi Saksensa** PG Resident General Surgery, MBBS

**ABSTRACT** Laparoscopic cholecystectomy has been performed as a day-care procedure for many years. Few studies have been conducted with primary focus on patient acceptance and preferences in terms of quality of life for this practice compared with overnight stay. Data from 100 patients with symptomatic gallstones randomized to laparoscopic cholecystectomy performed either as a day-care procedure or with routine were analyzed. Complications, admissions, and readmissions were assessed. Forty-eight (92 per cent) of 52 patients in day-care group were discharged 4– 8 h after the operation. Forty-two (88 per cent) of 48 in the overnight group went home on routine basis after surgery. The overall conversion rate was 2 per cent. Two patients had complications after surgery, both in the day-care group. No patient in either group was readmitted. There was no significant difference in total quality of life score between the two groups.

**KEYWORDS :** Day Care Surgery, Routine Surgery, Laparoscopic Cholecystectomy

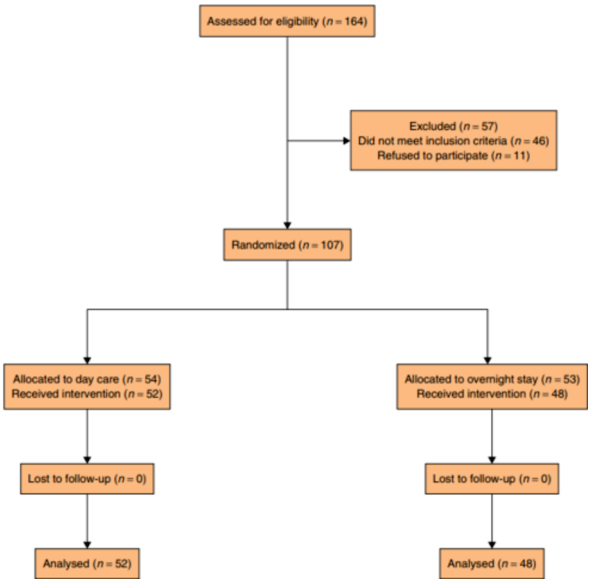


**Fig 1 Trial Flow Chart**

## INTRODUCTION

Since its introduction almost 20 years ago, laparoscopic cholecystectomy (LC) has become the treatment of choice for symptomatic gallstone disease[1–3]. Rapid recovery after LC and improved postoperative management have led to progressively shorter hospital stay. However, economic incentives, and anaesthetic and medical advances have encouraged healthcare providers to explore the option of carrying out a significant proportion of these procedures on an outpatient basis. Many studies have documented the safety and feasibility of outpatient LC in an ambulatory surgery unit in selected patients[4–14]. Most of these studies have focused on outcomes such as complications, conversion rate, admissions, and readmissions. Three randomized clinical trials have compared day-care versus overnight stay for LC[15–17] and demonstrated the feasibility of a day-care protocol. Two of these studies[15,16] included a quality-of-life analysis in the immediate and early postoperative period and showed no major differences between the two strategies.

Various instruments have been developed and refined for assessment of patient quality of life in connection with surgical therapies[18,19]. This randomized clinical trial used such instruments to compare quality of life after LC per- formed as a day-care procedure or with a routine stay.

### Place Of Study

Department of General Surgery, Smt. Kashibai Navale Medical College and General Hospital, Pune - A Tertiary Care Centre.

### Patients and methods

All patients between the ages of 18 and 70 years presenting for gallstone disease surgery were considered for entry into the trial. Patients with an American Society of Anesthesiologists (ASA) score of III or IV, extreme obesity, Downloaded from https://academic.oup.com/bjs/article/93/1/40/6149784 by guest on 11 November 2021those older than 70 years, patients with extensive previous abdominal surgery, and those with a clinical suspicion of common bile duct stones or a history of acute cholecystitis or pancreatitis were considered unsuitable for outpatient surgery and excluded from enrolment. Included patients were required to live less than 50 km from the hospital and the day-care protocol specified that an adult must be available to accompany the patient home and stay there overnight. Randomization was achieved by computer. The study was approved by the ethics committee and informed consent was obtained from all participants.·The LC procedures were performed in the morning by a consultant surgeon. The perioperative and anaesthetic regimens were standardized, as described in a previous Dutch study[15]. Prophylaxis against postoperative pain and nausea was achieved by postoperative administration of 1 g paracetamol, 50 mg diclofenac and 4 mg ondansetron. LC was performed using a standard four-trocar technique with carbon dioxide insufflation. The trocar puncture sites were infiltrated with 20 ml 0 5 per cent bupivacaine with adrenaline before extubating. Induction of anaesthesia was accomplished with propofol and muscle relaxation with rocuronium bromide, and anaesthesia was maintained with sevoflurane. Analgesia was provided by fentanyl. For postoperative pain relief during the first day, 50 mg diclofenac and 1 g paracetamol was administered every 8 and 6 h respectively. Clear verbal and written information on postoperative care was given.

After initial recovery, patients were transferred to the ward, where they were encouraged to mobilize and start oral intake if fully conscious and not nauseous. The operating surgeon reviewed the patients before 18.00 hours. Discharge was allowed if the patient required oral pain medication only,

tolerated oral fluids, had passed urine spontaneously and felt confident of managing at home.

Patients randomized to routine stay were admitted to the ward. After LC, patients were observed in the recovery room until considered fit to return to the ward. The criteria for discharge were the same as those in the day-care group.

The results were analysed based on intention to treat. Outcome measures included hospital stay, complications, conversion rate, admission rate for the day-care group, readmission rate for both groups

## STATISTICAL ANALYSIS

Student's t test and Mann– Whitney U test were used to compare data between the two groups. P < 0 050 was considered statistically significant.

## RESULTS

Between September 2019 to September 2021, 107 patients were randomized to day care (54 patients) or an overnight stay (53 patients) (Fig. 1). Seven patients were excluded after randomization because of acute admissions for acute cholecystitis. All other patients were managed in accordance with the protocol. No patient withdrew from the study. The two study groups were well matched or age, sex.

Forty-eight (92 per cent) of the 52 patients in the day- care group were discharged from hospital 4 – 8 h after the operation and the remaining four patients were admitted.

Forty-two (88 per cent) of 48 patients in the overnight group were discharged on the first day after surgery, and the remaining six patients returned home on the following day.

## DISCUSSION

The present study demonstrated that LC can be performed as a day-care procedure without jeopardizing the safety of the patient, as shown previously[4–17]. In day-care surgery, patient selection criteria have an impact on the admission/ readmission rate. Inclusion criteria were comparatively strict in the present study and perhaps an even larger proportion of patients could be considered for day-care LC. The absence of readmission indicates that this selection was appropriate and that well informed patients can cope with some degree of pain and nausea at home.

Outpatient LC has been demonstrated to be safe even for older and high-risk (ASA grade III) patients undergoing elective operations[23]. On the other hand, in one North American study, a previous diagnosis of acute cholecystitis or biliary pancreatitis was highly predictive of hospital admission and patients with an ASA grade of more than II were more likely to require a postoperative stay of over 12 h[24]. The present authors' policy was to exclude high-risk patients and those with risk factors for difficult surgery and thus a higher risk of conversion.

As postoperative pain, nausea and vomiting have been reported as significant problems in ambulatory surgical patients, several authors have developed strategies to combat these problems during LC[25 - 27]. In the present study an improved anaesthetic regimen was used that did not include nitrous oxide, and ondansetron was added as antiemetic prophylaxis. Postoperative pain was successfully controlled by multimodal analgesia. These measures seemed to be important in achieving a low postoperative admission rate. In three previous randomized trials of day-care versus overnight-stay LC, the admission rate varied appreciably. In one[15] it was like that in the present study (8 per cent), whereas admission rates of 26 and 18 per cent respectively were reported in the other. two trials[16,17] . The most likely reason for these higher rates was that strategies to combat postoperative nausea and pain were suboptimal.

An important aspect of day-care surgery is patient acceptance. In some previous studies of day-case LC, patient satisfaction varied from 60 to 95 per cent[6–10,15].

Over the past decade there has been a push towards performing an increasing number of surgical procedures in the outpatient setting, mainly for economic reasons. This has resulted in a rapid shift from inpatient to outpatient practice once good clinical outcome (a safe procedure with no increased risk) and cost effectiveness have been established. Because hospital charges depend on a multitude of factors it is not surprising that outcome in economic terms differs considerably between reports, depending on variables such as the health insurance system, political and ethnic structure of the country.

In most previous studies, the day-care strategy came out as the cheaper option[15,33,34], and in one randomized trial there was no significant difference in cost[17].

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