

# Laparoscopic Cholecystectomy as a Day Surgery Procedure: Is it Safe?—An Egyptian Experience

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## ABSTRACT

**Background/Aim:** Major surgery performed as a day surgery procedure is not uncommon. The aim of this study is to evaluate the feasibility of day surgery procedures in laparoscopic cholecystectomy (LC). **Patients and Methods:** A total of 210 patients scheduled for elective LC between 2006 and 2008 were included in our study. The mean age was 40.63 years (range, 25 - 70 years). The indication for surgery was symptomatic cholelithiasis confirmed by ultrasonography without clinical or radiological evidence of acute cholecystitis. All patients were informed about the same-day discharge policy and received the postoperative instruction form on discharge. Preoperative work-up included history taking and physical examination in addition to standard laboratory and radiological tests. Patients above 35 years of age had an ECG done. All patients were examined in the outpatient clinic by a consultant anesthesiologist the night before surgery. Operative time, hospital stay, and complications were recorded. Telephonic feedback, on the morning after surgery was routinely done as an early follow-up. **Results:** Out of the total number of patients, 140 patients were ASA (I) and 70 were ASA (II) (40 patients were controlled hypertensives and 30 were controlled diabetics). Conversion rate was 1.4%. The mean hospital stay was 6.7 hours (range, 6 - 8 hours). The mean operative time was 31.2 minutes (range, 20 - 60 minutes). None of the patients required an abdominal drain. No morbidities or mortalities were reported in this series. **Conclusion:** LC may be done as a day surgery procedure with optimal patient satisfaction and without complications.

**Key words:** Cholecystectomy, day surgery, laparoscopic

Received 04.07.2010, Accepted 10.01.2011

**How to cite this article:** Seleem MI, Gerges SS, Shreif KS, Ahmed AE, Ragab A. Laparoscopic cholecystectomy as a day surgery procedure: Is it safe?—An Egyptian experience. Saudi J Gastroenterol 2011;17:277-9.

Laparoscopic cholecystectomy (LC) was first reported by Mouret in France in 1987 and two years later by Reddick in the United States in 1989.<sup>[1-3]</sup> LC has proven to be a safe procedure with multiple benefits to the patients, including reduced postoperative pain, smaller scars, shorter hospital stay, shorter convalescence period, and decreased risk of selected complications compared with open cholecystectomy.<sup>[2-4]</sup> Currently, the majority of patients undergoing elective LC are observed in the surgical ward or in a short-stay unit overnight.<sup>[5]</sup> Although several authors have documented the feasibility of outpatient management of patients undergoing LC,<sup>[6-8]</sup> wide acceptance of an actual

same-day outpatient management requires a proof that there is no added risk to the patient from early discharge.<sup>[4]</sup> The current study presents the Egyptian experience of doing LC as a day surgery procedure.

## PATIENTS AND METHODS

A total of 210 patients underwent elective LC. The mean age of this group was 40.63 years (range, 25 - 70 years). The indication for surgery was symptomatic cholelithiasis confirmed by ultrasonography, without clinical or radiological evidence of acute cholecystitis.

The exclusion criteria were as follows:

1. Acute cholecystitis.
2. Patient's residence outside Cairo city (50 km from the surgical center).
3. Lack of telephonic contact (personal or caregiver).
4. American Society of Anesthesiologists (ASA) III and higher.
5. Patients who were converted to open technique.

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	DOI: 10.4103/1319-3767.82584

All patients were informed about same-day discharge. Preoperative work-up included history, physical examination, standard laboratory, and radiological tests. Patients above 35 years of age had an electrocardiogram (ECG) done.

All patients were examined by a consultant anesthesiologist in the outpatient clinic the night before surgery. All patients received intravenous prophylactic antibiotic on induction and intravenous ondansetron as an antiemetic. Standard four-port technique was used. Operative time, hospital stay, and any complications were immediately recorded in the postoperative notes after surgery. Patients were kept in the recovery room for four hours for postoperative routine monitoring before being transferred to the discharge unit. On discharge, they received the postoperative instructions form. Telephonic feedback was taken the next morning, as a routine early follow-up.

## RESULTS

There were 140 patients with ASA (I) and 70 patients with ASA (II) (40 patients were controlled hypertensives and 30 patients were controlled diabetics). Three (1.4%) patients were converted to open cholecystectomy; one because of Mirizzi's syndrome with difficulty defining correct anatomy and the other two because of acute edematous anatomy associated with liver cirrhosis. The mean hospital stay was 6.7 hours (range, 6 - 8 hours). The mean operative time was 31.2 minutes (range, 20 - 60 minutes). No patient required an intraoperative drain. All patients were prescribed oral nonsteroidal anti-inflammatory drugs three times a day for postoperative analgesia. Thirty (14.2%) patients received one injection of methadone before they were discharged from the day surgery unit. Neither morbidity nor mortality occurred in this series. All telephone calls on the next postoperative day were answered and patients' satisfaction with their management was rated on a 4-point scale (1 = No satisfaction, 2 = Satisfied, 3 = Good satisfaction, and 4 = Excellent satisfaction) [Table 1]. On the one-week postoperative follow-up visit, three patients showed local bruising at the site of umbilical port which resolved spontaneously. None of the patients developed wound infection.

## DISCUSSION

Nicholls reported his first series of day case patients in 1909.<sup>[8]</sup> Guidelines for Day Case Surgery had been published in 1985 by The Royal College of Surgeon of England, followed by the British Association of Day Surgery in 1989. Royal College of Surgeons of England defined a surgical day case patient as one "who is admitted for investigation or operation on a planned non-resident basis and who nonetheless requires facilities for recovery."<sup>[9]</sup> It is estimated that 60 to 80% of

**Table 1: Patient satisfaction scale**

Scale	Items	Number of patients	Percentage
1	No satisfaction	10	4.8
2	Satisfaction	105	51.2
3	Good satisfaction	90	43.9
4	Excellent satisfaction	5	26.8

surgeries will be performed as day surgery cases in the near future.<sup>[1,10]</sup> The attraction of day surgery to hospitals and purchasers of healthcare is based on the expected financial benefits. It was concluded that selective performance of day surgery LC could result in an average baseline cost saving of more than \$700 for each patient.<sup>[10]</sup> Day surgery is further encouraged by the federal government, businesses, private companies, and insurance providers, which now mandate outpatient management of certain procedures for appropriate patients.<sup>[7]</sup> Patients benefit from increased convenience, faster recovery, and early return to work.<sup>[7]</sup> Day surgery procedures are desired by patients who realize these benefits and want to assume more responsibility for their own health.

LC has largely replaced open cholecystectomy as a routine procedure for symptomatic cholelithiasis. Currently, the majority of patients undergoing elective LC are observed in the hospital or in a short-stay unit overnight.<sup>[4]</sup> As early as 1990, investigators began to evaluate the safety of same-day management of LC. Voitk<sup>[11]</sup> reported that 95% of LCs can be successfully managed in an outpatient setting. Moreover, he proposed that even high-risk patients (ASA III and higher) can usually be managed as day cases without undue complications or the need for admission. In this series, we selected our patients to be in ASA I and ASA II categories. ASA III patients were excluded from this study. Lillemoe *et al.*<sup>[4]</sup> noted that only 4.6% of 130 "true" outpatient LC patients required readmission, mostly for intractable nausea. In this study, the rate of readmission was zero. Curet *et al.*<sup>[12]</sup> concluded that patients who undergo elective LC should be offered early discharge from the hospital as long as they live relatively close to a medical center and have adequate assistance at home. Actually, major complications associated with LC, like bowel injury, are rare and occur in less than 1% of cases.<sup>[13]</sup> Also, when they occur, they tend to remain unrecognized during the primary operative admission.<sup>[14-17]</sup> Fortunately, there was no bowel injury or other major complication in our series; only three patients reported bruising at the site of umbilical port which resolved spontaneously.

## CONCLUSION

We conclude that day surgery LC should continue to be

applied selectively based on the experience of the responsible surgeons and the characteristics of the participating medical environment and patient population. LC can be safely done as a day surgery procedure with optimal patient satisfaction and without serious complications in Egypt.

## ACKNOWLEDGEMENT

We thank Professor M.A. Wali (Consultant Vascular Surgeon), Saudi Arabia, for his invaluable help in reviewing the manuscript.

## REFERENCES

1. Fiorillo MA, Davidson PG, Fiorillo M, D'Anna Jr JA, Sithian N, Silich RJ. 149 ambulatory laparoscopic cholecystomies. *Surg Endosc* 1996;10:52-6 .
2. Narain PK, DeMaria EJ. Initial results of a prospective trial of outpatient laparoscopic cholecystectomy. *Surg Endosc* 1997;11:1091-4.
3. Zegarra RF, Saba AK, Peschiera JL. Outpatient laparoscopic cholecystectomy: Safe and cost effective? *Surg Laparosc Endosc* 1997;7:487-90.
4. Lillemoe KD, Lin JW, Talamini MA, Yeo CJ, Snyder DS, Parker SD. Laparoscopic cholecystectomy as a "true" outpatient procedure: Initial experience in 130 consecutive patients. *J Gastrointest Surg* 1999;3:44-9.
5. Reddick EJ, Olson DO. Outpatient laparoscopic laser cholecystectomy. *Am J Surg* 1990;160:485-7.
6. Arregui MD, Davis CJ, Arkush A, Nagan RF. In selected patients outpatient laparoscopic cholecystectomy is safe and significantly reduces hospitalization charges. *Surg Laparosc Endosc* 1991;1:240-5.
7. Davis JE. The future of major ambulatory surgery. *Surg Clin North Am* 1987;67:893-901.
8. Nicholls J. The surgery of infancy. *BMJ* 1909;ii:753-4.
9. The Royal College of Surgeons of England. Commission on the provision Surgical Services. Report of Working Party on Guidelines for Day Case Surgery. London: The Royal College of Surgeons of England; 1992.
10. Fleisher LA, Yee K, Lillemoe KD, Talamini MA, Yeo CJ, Heath R, *et al.* Is outpatient laparoscopic cholecystectomy safe and cost-effective? *Anesthesiology* 1999; 90: 1746-55.
11. Voitk A. Establishing outpatient cholecystectomy as a hospital routine. *Can J Surg* 1997;40:282-8.
12. Curet MJ, Contreras M, Weber DM, Albrecht R. Laparoscopic cholecystectomy. *Surg Endosc* 2002;16:453-7.
13. Shea JA, Healey MJ, Berlin JA, Clarke JR, Malet PF, Staroscik RN, *et al.* Mortality and complications associated with laparoscopic cholecystectomy. *Ann Surg* 1996;224:609-20.
14. Soper NJ, Brunt LM, Kerbl K. Laparoscopic general surgery. *N Engl J Med* 1994;330:409-19.
15. Mirza DF, Neoptolemos JP. Modern management of gallstones. *Postgraduate Surg* 1996;6:14-8.
16. Tait N, Little JM. The treatment of gall stones. *BMJ* 1995;311:99-105.
17. Lam D, Miranda R, Hom SJ. Laparoscopic cholecystectomy as an outpatient procedure. *J Am Coll Surg* 1997;185:152-5.

**Source of Support:** Nil, **Conflict of Interest:** None declared.