CODEN [USA] : IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
SJIF Impact Factor: 7.187
http://doi.org/10.5281/zenodo.4008824

Available online at: http://www.iajps.com *Research Article*

OUTCOME OF LAPAROSCOPIC CHOLECYSTECTOMY AS DAY CARE SURGERY IN NISHTAR HOSPITAL MULTAN

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Article Received: June 2020 **Accepted:** July 2020 **Published:** August 2020

Abstract:
Objective: *To share our experience of day hospital laparoscopic cholecystectomy and assess its safety and feasibility in a local setting.*
Place and Duration: *In the Surgical Unit-II of Nishtar Hospital Multan for one-year duration from May 2019 to May 2020.*
Methods: *All patients who underwent day care laparoscopic cholecystectomy after meeting criteria were enrolled in the study. There were 50 patients. Patient demographic data as well as examination of operational and postoperative complications were recorded. Discharge criteria were formulated based on a scoring system for discharges after anesthesia. All patients who were discharged at 9:00 p.m. were considered a daytime case. All patients admitted overnight were recorded. The reasons for the overnight stay were also assessed.*
Results: *Fifty patients were selected for laparoscopic cholecystectomy in the day ward. Out of all fifty patients, 5 (10%) had to stay overnight. The main reason (6%) for the night was post-operative pain and vomiting, while post-operative hemorrhage (2%) and biliary discharge (2%) were other causes of unplanned admissions.*
Conclusion: *Laparoscopic cholecystectomy is a safe, feasible and effective daily procedure in selected patients.*
Key words: *laparoscopic cholecystectomy, outpatient cholecystectomy, day care, gallbladder.*

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Please cite this article in press Arslan Nasir et al, ***Outcome Of Laparoscopic Cholecystectomy As Day Care Surgery In Nishtar Hospital Multan.,*** *Indo Am. J. P. Sci, 2020; 07(08).*

INTRODUCTION:

Laparoscopic cholecystectomy is the gold standard in symptomatic gallstone disease. With the development of technology and advances in surgical technique, this procedure has become one of the most frequently performed. Currently, there is a tendency to perform laparoscopic cholecystctomy (LC) as a day surgery (DS) procedure due to the potential economic benefits. Early experiences with laparoscopic cholecystectomy in one day resulted in very high nighttime admission rates. However, more recent studies have found that the proportion of unplanned overnight admissions is greater than 10%. The primary goal of day surgery is to keep patients comfortable by avoiding hospitalization, but patient safety is a top priority. The reduction in the frequency of overnight admissions to less than 10% is due to rigorous patient selection, admitting only well-motivated patients, and careful anesthesia and surgery techniques. There are centers in Pakistan where laparoscopic cholecystectomy is performed on a daily basis. However, there was a lack of research on local laparoscopic surgery, and the aim of our study is to share our experience and its feasibility in local settings.

MATERIALS AND METHODS:

This was an observational study that was conducted in the Surgical Unit-II of Nishtar Hospital Multan for one-year duration from May 2019 to May 2020. In the analyzed period, the study included all patients who underwent laparoscopic cholecystectomy as part of day care. Inclusion criteria for day hospital laparoscopic cholecystectomy are ASA through II, well-motivated patients and no evidence of mass formation in Callot's triangle. Exclusion criteria included acute cholecystitis, comorbidities, age greater than 60 years, and relative contraindications for laparoscopic cholecystectomy. Accurate case records of all these patients were kept for their age, sex, symptoms, general condition, clinical and radiographic findings. All patients who were discharged at 21:00 were considered a day care case. All patients who stayed overnight were also included in the study. All pre-screening tests such as complete blood count, blood grouping and cross-matching, serum electrolytes, hepatitis and coagulation profile, and abdominal ultrasound were performed on all subjects prior to admission. Data was recorded on pre-designed proforma, listing variables such as age, gender, address, symptoms, imaging tests, intraoperative outcomes, intraoperative complications, postoperative complications, and reasons for overnight stay. Laparoscopic cholecystectomy was performed using the standard three-port technique, using one 5mm instrument port to grasp the umbilical port for the laparoscopic telescope and an epigastric port for preparation and retrieval of the gallbladder. All patients were treated with general anesthesia with endotracheal intubation. The operation was performed by a team led by a surgeon, assistant and camera operator. After surgery, all patients were monitored first in the postoperative ward, and then in the day surgery ward. All patients undergoing LC were monitored every half hour in the recovery room and in the daycare unit. Vital symptoms and the main postoperative symptoms were noticed. One of the operating surgeons visited in the evening and after examining all patients decides to discharge or stay in the hospital based on the discharge scoring system after anesthesia and the general condition of the patient.

RESULTS:

Patient demographics are shown in Table 1.

Table 1: Demographic details of patients

Parameters	**=n**	**%age**
Age in years		
<30	5	10
30-40	10	20
41-50	30	60
51-60	5	10
Male	7	14
Female	43	84
Indication of surgery		
Pain	35	70
Past H/O cholecystitis	10	20
Mucocele/empyema	5	10
ASA		
ASA I	40	
ASA II	10	

The majority of patients were female (n = 43). Maximum number of patients in the age group (40-50 years). The indications for surgery in these patients were recurrent biliary colic in (70%) and previous episodes of acute cholecystitis in (20%). A total of 5 patients were excluded from daytime laparoscopic cholecystectomy due to occlusion of the corpus callosum and acute cholecystitis. Unscheduled admissions were required in 5 patients, accessory duct injury in 1 (2%) patient, bleeding from the hepatic bed in 1 (2%) patient. Three patients (6%) had nausea, vomiting and severe pain that did not resolve the post-operative pain, nausea and vomiting scores shown in Table 2.

Table .2: Early post-operative complications

Complaint	**=n**	**%age**
Vomiting	3	6
Hemorrhage	1	2
Pain Severe(VAS>4)	3	6
Moderate(VAS 3-4)	7	14
Mild(VAS 1-2)	15	30

Post-operative pain was calculated using a visual analog scale. Maximum patients (60%) had mild postoperative pain. Forty-five patients were discharged on the same day 6-8 hours after surgery. Discharge criteria were formulated on the basis of the discharge system after anesthesia. Table 3 shows the scoring system for discharges after anesthesia. In this scoring system, a maximum of 10 points was awarded to patients who were perfectly prepared for discharge. All patients with a score below 7 were admitted overnight to optimize symptoms.

Table 3: PADSS-post anesthesia discharge scoring system

Parameters	**Results**	**Points**
Systolic blood pressure	<20% of preoperative value	2
	20-40% of preoperative value	1
	>40% of preoperative value	0
Ambulation	Walking without vertigo possible	2
	Walking with assistance possible	1
	No walking possible, vertigo	0
Nausea, vomiting	Minor	2
	Moderate	1
	Severe	0
Pain	Minor (VAS 1-2)	
	Moderate (VAS 3-4)	
	Severe (VAS >4)	
Bleeding	Minor	2
	Moderate	1

DISCUSSION:

Laparoscopic cholecystectomy (DCLC) has recently been adopted as a safe and feasible procedure and is rapidly gaining ground for its cost-effectiveness and convenience. Its feasibility as day care has been established in Western countries. The benefits of patient satisfaction and cost effectiveness have been very attractive to surgeons and hospital administrators. The low rate of adverse events or complications in the intraoperative or immediately postoperative period additionally justifies the rapid development of this type of outpatient surgery in developed countries. All this data comes from developed countries where an outpatient or day care system already exists. Well-defined inclusion and exclusion criteria are also adhered to in patient selection. However, data from developing countries such as Pakistan are still limited. Experience in Pakistan shows that it is safe, feasible and acceptable for patients, and has social and economic benefits. Performing DCLC in high-risk patients is a challenge to safe surgical practice, especially in the early postoperative period. Performing DCLC in high-risk patients requires careful evaluation prior to implementation. Before planning, it is necessary to take into account possible limitations of day operations, such as hemorrhage, bile leakage.

Patient choice is critical for knee disease in day care. Previous abdominal surgery, complications related to gallstones in general are a relative contraindication for knee pain. Patient selection criteria are key to the development of safe day-care. Robinsons et al. Were successful in 70% of the unselected patient group and identified ASA classification, duration of surgery, and time to start surgery as a factor associated with outpatient treatment failure. The studies found that the appropriate selection of patients lowers the failure rate, and the patients most likely to meet the DCLC criteria are ASA grade I and II patients, without prior abdominal surgery, no history of acute cholecystitis, and the duration of the procedure shorter than 90 minutes. Most studies use screening criteria to evaluate patients for DCLC. Ali et al. Reported successful DCLC in 92% of selected patients. In our study, only patients meeting our selection criteria underwent DCLC and were successful in 90% of patients. The percentage of unplanned admissions to DCLC is an indicator of quality, as it may indicate insufficient selection criteria for patients who, due to their characteristics, precedents or preoperative results, were not eligible for this type of surgery. A lower admission rate has been reported in specialized outpatient surgical centers, which may be related to stringent patient selection criteria. We do not routinely use a nasogastric tube and a suction tube. Drains and tubes delay recovery. Early mobilization and initiation of sips is also our strategy. The most important reasons for discharge failure in our study were vomiting and postoperative pain. The limitations of this study are that it is a retrospective report with prospective data and no patient satisfaction analysis was performed. Perhaps this aspect can be explored in future research.

CONCLUSION:

The day care treatment is safe, with great success in carefully selected patients with uncomplicated symptomatic gallbladder disease, and has the advantage of being cost effective. Patient selection has a large impact on the success rate. Better management of early postoperative complications could further improve the single-day LC success rate. Laparoscopic cholecystectomy is a feasible, safe and effective daily procedure in selected patients in a local setting.

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