

Outcome of Cholecystectomy in AAMCH

Md. Rafiqul Islam¹
Shanta Islam Annie²
Hriju Mitra³
S.M Saiful Alam⁴

1. Professor (CC) and Head of the Dept of Surgery, Ad-din Akij Medical College & Hospital, Khulna.
2. Assistant Register, Department of Surgery, Ad-din Akij Medical College & Hospital, Khulna.
3. Intern Doctor, Ad-din Akij Medical College & Hospital, Khulna.
4. Intern Doctor, Ad-din Akij Medical College & Hospital, Khulna.

*Correspondence

Prof. Dr. Md. Rafiqul Islam
MBBS, FCPS (Surgery)
Professor (CC),
Department of Surgery,
Ad-din Akij Medical College and
Hospital, Khulna.
email: dr.rafiqrmc@gmail.com
Phone:+88017-11838481

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Abstract

Introduction: Laparoscopic cholecystectomy is the gold standard treatment of Gall stone disease. It is the most used surgical procedure worldwide. The aim of the study was to analyze the outcome of the patients who had undergone cholecystectomy in AAMCH. **Materials and Methods:** This is a retrospective study which was conducted at Ad-din Akij Medical College, Khulna from August 2022 up to July 2023. This study analyzed among 381 patients 20-65 years old diagnosed with gallstone disease undergone laparoscopic cholecystectomy, open cholecystectomy and laparoscopic cholecystectomy converted to open cholecystectomy. This study was focused on the number of patients who were operated each month and their postoperative complications, duration of hospital stay, co-morbidities and prevalence of age and sex. **Result:** We analyzed total number of 381 patients among them 321(83.7%) undergone laparoscopic cholecystectomy, 52(13.5%) of them undergone open cholecystectomy and 10(2.9%) of them undergone laparoscopic cholecystectomy converted to open cholecystectomy. Most of the patients were female 217(56.9%). Highest number of patients 53(12.9%) were operated in July, 2023. lowest number of patients 13(3.4%) were recorded in the month of April, 2023. Patients' comorbidities were hypertension (15%), Diabetes mellitus (5%), hypothyroidism (1.5%), asthma (1%). Laparoscopic cholecystectomy resulted in less postoperative complication (2.3%) than open cholecystectomy (3.2%). Average duration of postoperative hospital stay in laparoscopic cholecystectomy was 3-4 days and 5-7 days in open cholecystectomy. **Conclusion:** Most of the patients of Gall stone disease had undergone Laparoscopic cholecystectomy. Majority of the patient were operated during warmer months and lowest recorded number of patients was in the Holy month of RAMADAN(April,2023). Laparoscopic cholecystectomy showed less complication, shorter hospital stay and earlier feeding compared to open cholecystectomy.

Keywords: Cholecystectomy, Laparoscopy, postoperative complication.

Introduction

Gallstone disease is the most common biliary pathology which affects 10-15% population worldwide. The treatment of choice for the patients with symptomatic gallstone disease is cholecystectomy and the laparoscopic cholecystectomy is the gold standard treatment for Gallstone disease but laparoscopic cholecystectomy is still reported as having a higher complication rate about 9-17% in some published series (1). Laparoscopic cholecystectomy is considered to be unsafe and technically difficult to perform in case of acute cholecystitis (2,3). The broad range of complication and conversion rate should be kept in mind because they depend on variables such as patient age, emergency intervention, acute inflammation (emphyema, gangrene, perforation of GB), patient comorbidities (4). With increasing experience in laparoscopic surgery many surgical services have reported on the use of laparoscopic cholecystectomy for acute cholecystitis suggesting that it is technically feasible but at the expense of a higher conversion rate of 4.9% worldwide (5,6) and common bile duct lesions (7). Routine use of open cholecystectomy might enable more patients to have the operation during the acute phase because most surgeons prefer this approach but the impact of morbidity and hospital stay should also be considered. There is the expectation that open operation is associated with more pain longer duration with hospital stay and delayed postoperative oral feeding (8,9). In some trials successful laparoscopic cholecystectomy is associated with an earlier recovery and shorter hospital stay and early postoperative oral feeding compared to open cholecystectomy (10). The Aim of the study was to analyze the patients who were undergone cholecystectomy in AAMCH and number of operation in each month, complications of the operations, comorbidities of the patients, hospital stay and cost effectiveness.

Aim

To study the outcome of cholecystectomy in AAMCH.

Materials and Methods

All the patients having cholecystectomy in AAMCH, Khulna from August 2022 to July 2023 were retrospectively registered in this study. The operations were performed by consultants of surgery and subordinate doctors participated in surgery under supervision. Patients were eligible to participate in the trial comparing conventional open cholecystectomy and laparoscopic cholecystectomy according to exclusion and inclusion criteria.

We analyzed 381 patients aged 20-65 years diagnosed with gall stone disease randomly assigned to laparoscopic cholecystectomy or open cholecystectomy. Excluded were those with confirmed choledocholithiasis and underwent concomitant surgeries, patients with liver cirrhosis, pregnant women and malignant tumor. Demographic data such as age, sex, elective or emergency procedure, duration of surgery, surgical risks, use of prophylactic heparin, intercurrent diseases and use of prophylactic antibiotics were computed. Surgical site infection, respiratory complications (pneumonia, bronchopneumonia, pleural effusion, and pulmonary embolism), urinary infections, deep vein thrombosis and other complications were recorded from the immediate post operative period until the time of hospital discharge. We evaluated the time to oral feeding ambulation, length of postoperative hospital stay and clinical conditions at time of discharge in AAMCH.

Results

Of the 381 patients 319 (83.7%) underwent laparoscopic surgery, 52 (13.5%) open cholecystectomy, 10 (2.9%) Laparoscopic cholecystectomy converted to open cholecystectomy.

Table 1. Types of cholecystectomy performed in AAMCH.

Type of cholecystectomy	Number	Percentage
Laparoscopic Cholecystectomy	319	83.7%
Open Cholecystectomy	52	13.5%
Laparoscopic converted to Open Cholecystectomy	10	2.9%

There was relation between the numbers of operation each month with the environmental condition. Most of the patients were operated during the warmer months and the number of patients decreased during cold weather mainly in December, January, and February. But the lowest number of patients (3.1%) was operated in the month of April.

Table 2. Number of patient undergone cholecystectomy in each month

Month	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Laparoscopic Cholecystectomy	37	25	28	34	19	18	17	21	12	29	26	42
Open Cholecystectomy	8	4	5	5	4	3	8	4	0	7	8	7
Laparoscopic Cholecystectomy to Open Cholecystectomy	1	0	1	2	1	0	1	0	0	1	1	2
Total	46	29	34	41	24	21	26	25	12	37	35	51
Percentage	12%	7.9%	8.9%	10.2	6.5%	5.6%	6.8%	6.6%	3.1%	9.7%	9.3%	13.4%

Analyzing our data we have found a relation with the previous mentioned type of cholecystectomy by gender and age as shown below in table 2. We have found a relationship man to woman.

Table 3. Prevalence of age and sex

Type of cholecystectomy	Age	Male	Female	M:F Ratio	Total
Laparoscopic	45±11	137	182	1:1.33	319
Open	47±10	22	30	1:1.36	52
Converted	50±10	4	6	1:1.5	10
Total	46.5±10.5	163	218	1:1.33	381

Many of the patients had co-morbidities such as hypertension, Diabetes mellitus, Hypothyroidism, Asthma.

Table 4. Co-morbidities.

Disease	Laparoscopic	Open	Converted	Total
Hypertension	24	12	2	37(9.7%)
Diabetes	13	9	1	23(6%)
Asthma	6	2	0	8(2%)
Hypothyroidism	3	1	1	5(1.3%)

There was no difference in median time to onset of post operative oral feeding. It was earlier in laparoscopic cholecystectomy where most of the patient received oral diet introduced in first 12 hours while in open surgery oral intake was introduced in most of the patients after 24 hours..

Table 5. : Time of postoperative oral feeding.

Operation	5-6hr	12hr	24hr	48hr	72hr
Laparoscopic	10	298	19	2	0
Open	0	7	35	9	2
Converted	0	2	6	1	1

Most of the patients with laparoscopic cholecystectomy leave the hospital within 3-4 days. Patients with open cholecystectomy leave the hospital on 5-7 days.

Table 6. : Duration of hospital stay.

Operation	1-2days	2-3days	3-4days	5-6days	6-7days
Laparoscopic	2	297	13	5	3
Open	0	0	5	38	9
Converted	0	0	3	5	2

Post operative complications resulting in from laparoscopic cholecystectomy occurred in 2.5% patients whereas postoperative complications in open cholecystectomy occurred in 5.8% patients.

Table 7. : Post-operative complications occurring in patients undergoing cholecystectomy

Complication	Laparoscopic Cholecystectomy	Open Cholecystectomy
Wound infection	1	2
Urinary infection	0	0
Bile duct injury	3	0
Internal hemorrhage	1	0
Port site hemorrhage	1	0
Deep vein thrombosis	0	0
Respiratory Infection	1	1
Subcutaneous emphysema	0	0
Total	8(2.5%)	3(5.8%)

Discussion

In AAMCH Laparoscopic cholecystectomy surpassed open cholecystectomy. This is because the benefits of Laparoscopic cholecystectomy in respect of shorter duration of post operative hospital stay, early recovery, having less complications etc. Most of the patients were operated during warmer months of the year from the month of March to November. The number of patients decreased in the colder month of December to February. The lowest number of patients 3.9% was operated in April because it was the holy month of Ramadan. In this study the duration of post operative hospital stay for laparoscopic surgery was 3-4 days and in open cholecystectomy was 5-7 days. The hospital stay was more in open cholecystectomy than in laparoscopic cholecystectomy. Other study showed

the mean postoperative stay for an open cholecystectomy has been 8 days compared with the three days recorded for laparoscopy (11). Both preoperative and postoperative complications are thoroughly dealt with in most studies that have compared open and laparoscopic cholecystectomy (12, 13). Usually the complications are classified as bile duct injury, vascular, bowel injury, residual stone, wound, urinary tract infection, urinary retention and ileus (14). Bile duct injury has been more common after laparoscopic cholecystectomy (15). In this present study we had three cases of bile duct injury. Patients were reported and the injury was successfully treated. The conversion rate of laparoscopic cholecystectomy in to open is 4.9% worldwide (16). Conversion rate in AAMCH is 2.9%. It is due to better patient selection criteria and satisfactory investigation reports.

Conclusion

Majority of the cholecystectomy in AAMCH was done laparoscopically. Laparoscopic cholecystectomy offers the greatest benefits to patients; it was associated with the lower rate of post operative complications, feeding earlier, shorter hospital stay than open cholecystectomy. Although the cost of laparoscopic cholecystectomy is higher than open cholecystectomy but considering duration of hospital stay, cost of medicine and the duration by which patient can return to work, laparoscopic cholecystectomy has shown more cost effectiveness than that of open cholecystectomy.

Conflict of interest: None.

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