ORIGINAL ARTICLE

Determine the Frequency of Laparoscopic to Open Procedure in Patients Undergoing Cholecystectomy for Thick Walled Gall Bladder

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ABSTRACT

Objective: To determine the frequency of difficult laparoscopic cholecystectomy that needs to open procedure in patients undergoing cholecystectomy for thick walled gall bladder.

Study Design: Retrospective/observational study

Place and Duration of Study: Department of Surgery, Mardan Medical Complex, Mardan from 1st January to 31st December, 2019.

Methodology: One hundred patients of both genders with gall bladder wall thickness more than 3mm were included. Patient's demographics were recorded after taking written consent. All the patients were undergoing laparoscopic cholecystectomy. Per-operative complications, frequency of difficult laparoscopic cholecystectomy which needs conversion to open procedure and post-operative wound infection were examined. Data was analyzed by SPSS 24.0.

Results: Seventy two (72%) were females and 28 (28%) patients were males with mean age 35.27±14.18 years. Mean duration of disease was 4.24±3.98 years. Mean gall bladder thickness was 4.28±1.06 mm. Excessive bleeding was the commonest preoperative complication found in 40 (40%) patients. Difficult laparoscopic cholecystectomy was found in 14 (14%) patients need conversion to open procedure. Post-operative wound infection found in 18 (18%) patients.

Conclusion: Frequency of difficult laparoscopic cholecystectomy which needs conversion to open procedure was high in patients with thick walled gall bladder

Keywords: Cholecystectomy, Laparoscopic, Open procedure, Bleeding, Wound infection

INTRODUCTION

The prevalence of cholelithiasis is high. While cholelithiasis only becomes symptomatic in approximately 50% of the patients, cholecysectomy is a common operation.¹ In Western culture gallstones are one of the greatest causes of morbidity. The prevalence of gallstones in patients ranges between 5 and 22 per cent, whether symptomatic or asymptomatic.² Gallbladder (GB) operations in Iraq constitute a large fraction of the overall hospital operations performed. This demonstrates how significant the disease is in Iraq.³ In recent times, laparoscopic cholecystectomy, leading to lower morbidity, shorter hospital residence, earlier returns to normal day activities, less postoperative pain and a substantial reduction in the occurrence of wounds complications and postoperative ice in LC patients, has become golden norm for care for symptomatic gallstones. Besides several benefits, laparoscopy also has technological drawbacks that raise the risk of undesirable convertion from LC into open chirurgy-when chronic inflammation leads to pericystic adherence and conglutination.⁴⁻⁶ The degree of surgical problem is affected by the severity of acute inflammatory changes. Inflammation markers in patients with acute cholecystitis⁷ are GB wall thickening and Pericholecystic Fluid). A thickened GB wall, past active cholestitis, diabetes mellitus, past gastrointestinal operations, age above 65 years, and male sex^{8,9} are the most common risk factors for transition. A radiological exam (ultrasonography) is important for the patient selection, and the most common method used other than the clinical assessment.² Preoperative classification of patients into a high degree of risk will encourage the choice of a surgeon on future conversion.⁹ A preoperative GB ultrasound recording a large GB wall with calculi (> or = 3 mm) is a clinical alert for a complicated LC that could involve conversion to an open surgery. In a study, the conversion rate was found to be 60% for thickened GB walls, while 12% for standard GB walls respectively.¹⁰ Various results of GB wall thickening as an indicator for operational conversion have been shown in the past regarding the sensitivity, specificity , positive predictive value and precision.⁷

The present study was conducted to examine the frequency of difficult laparoscopic cholecystectomy which needs conversion to open procedure in patients with thick walled gall bladder.

MATERIALS AND METHODS

This prospective study was conducted at Surgical Department of Mardan Medical Complex, Mardan for the duration of one year from 1st January to 31st December, 2019. A total of 100 patients with a gallbladder wall thickness of > 3 mm were included in both sexes ages 20 to 60 years. Following written consent, demographics for patients, including age, sex, length and gallbladder wall thickness were reported. This research has removed patients with an antecedent of abdominal surgery, paral umbilical hernia, obstructive jaundice, empyema gall bladder patients and patients with no consent. All the

patients had received laparoscopic procedure. Peroperative complications, frequency of difficult laparoscopic cholecystectomy which needs conversion to open procedure and post-operative wound infection were examined. Data was analyzed by SPSS 24.0.

RESULTS

Seventy two (72%) were females and 28 (28%) patients were males with mean age 35.27 ± 14.18 years. Mean duration of disease was 4.24 ± 3.98 years. Mean gall bladder thickness was 4.28 ± 1.06 mm (Table 1). Excessive bleeding was the commonest preoperative complication found in 40 (40%) patients followed by adhesion in 32 (32%) patients and perforation in 8 (8%) patients (Table 2). Difficult laparoscopic cholecystectomy was found in 14 (14%) patients need conversion to open procedure due to excessive bleeding during dissection of gall bladder from liver bed (Table 3). We found 18 (18%) patients had developed post-operative wound infection. Among them 8 with conversion to open procedure and 18 with laparoscopic procedure had developed wound infection (Table 4)

According to the neonatal outcome, 4 (8%) and 5 (10%) patients in group 1 and 2 had Apgar score <7 at 5 minutes. In group 1 mean birth weight was 3.46 ± 1.55 kg and in group 2 mean birth weight was 3.28 ± 1.14 kg. In group 1 and 2, 3 (6%) and 5 (10%) patients were admitted to NICU, no significant difference was observed regarding neonatal outcomes between both groups (Table 3).

Table 1: Baseline characteristics of all the patients

Variable	No.	%
Age (years)	35.27 <u>+</u> 14.18	
Gender		
Male	72	72.0
Female	28	28.0
Disease duration (years)	4.24 <u>+</u> 3.98	
Gall bladder thickness (mm)	4.28±1.06	

Table 2: Peropertive complications

Peroperative complications	No.	%
Bleeding during dissection	40	40.0
Adhesion	32	32.0
Perforation	8	8.0
No complication	20	20.0

Table 3: Frequency of difficult laparoscopic cholecystectomy

Conversion to Open	No.	%
Yes	14	14.0
No	86	86.0

Table 4: Frequency of wound infection

Wound Infection	Conversion To Open	Laparoscopic	P-value
Yes	8 (57.14)	10 (11.63)	D <0.05
No	6 (42.86)	76 (88.37)	F<0.05

DISCUSSION

Laparoscopic cholecystectomy was seen as a choice for gallbladder disease treatment. Many studies report laparoscopic cholecystectomy with very low rates of complications are much safer and more effective treatment modality.^{11,12} The conversion rate for open

cholecystectomy of laparoscopic cholecystectomy is very high. Many of previous studies demonstrated that wall thickness of gall bladder was the most important risk factor and was highly associated with difficult laparoscopic cholecystectomy.13 Present study was conducted to determine the frequency of difficult laparoscopic cholecystectomy that needs conversion to open cholecystectomy in patients with thick walled gall bladder. In this regard 100 patients were enrolled. 72 (72%) were females and 28 (28%) patients were males with mean age 35.27±14.18 years. Mean duration of disease was 4.24±3.98 years. Mean gall bladder thickness was 4.28±1.06 mm. Many of previous studies reported female patients had high rate of gall bladder disease 75% as compared to males and majority of patients were ages between 25 to 45 years.^{14,15} A study conducted by Zaman et al¹⁶ reported the median duration of disease was 4.53 years and average wall thickness was 4.07±0.63 years.

In present study excessive bleeding was the commonest peroperative complication found in 40 (40%) patients followed by adhesion in 32 (32%) patients and perforation in 8 (8%) patients. A study conducted by Bhattacharjee et al¹⁷ reported that bleeding from liver bed was found in 14% patients. Some other studies reported that the most common complication was bleeding during separation from Liver bed followed by adhesion and perforation of gall bladder.^{18,16}

In present study difficult laparoscopic cholecystectomy was found in 14 (14%) patients need conversion to open procedure due to excessive bleeding during dissection of gall bladder from liver bed. We found 18 (18%) patients had developed post-operative wound infection. Among them 8 with conversion to open procedure and 18 with laparoscopic procedure had developed wound infection. We found that patients with wall thickness more than 4.5mm had high rate of conversion to open 60%. Several previous studies showed similarity to our findings in which more gall bladder thickness increase the conversion of laparoscopic to open cholecystectomy.^{19,20} A studv involving 536 patients with laparoscopic cholecystectomy was carried out by Kumar et al.²¹ The conversion rate was 7.81 percent in their report. The study of 200 patients receiving laparoscopic cholecystectomy was carried out by Sharma et al²² at Kathmandu Medical University. In their analysis, the conversion rate was 4%.

CONCLUSION

Laparoscopic cholecystectomy is much safer and effective treatment modality for gall bladder disease. We concluded that frequency of difficult laparoscopic cholecystectomy which needs conversion to open procedure was high in patients with thick walled gall bladder.

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