ORIGINAL ARTICLE

FREQUENCY OF CONVERSION OF LAP CHOLE WITH OPEN CHOLECYSTECOMY

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ABSTRACT

Objective: To determine the frequency and causes of conversion of laparoscopic cholecystectomy (LC) into open cholecystectomy.

Material and Methods: This cross sectional study was conducted at Khyber Teaching Hospital Peshawar,Pakistan, from January 2016 to June 2016 in the department of surgery. Total 0f 126 patients of symptomatic gallstones disease fulfilling the inclusion criteria were subjected to laparoscopic cholecystectomy and were followed through out the procedure to see for any conversion to open cholecystectomy and its cause..

Results: A total of 126 patients underwent LC during the study period.The mean age was 41.32years± 13.40 SD and age range of 18-68 years. .The total no of cases converted to OC were 12(9.52%).

Conclusion: One disadvantage of LC is the conversion into open procedure. But conversion should not be considered as complication of the procedure rather it is mature decision by the surgeons to avoid unnecessary lengthening the duration of surgery once they encounter any difficulty or intraoperative complication.

Key Words: Laparoscopic,cholecystectomy,gall stones, cholelithiasis.

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INTRODUCTION

Cholelethiasis is a common disease with a prevalence of 10-15% in the USA and about 16% in Pakistan[1,2] mostly remain asymptomatic but symptoms appear when any complication develops[3]. Ultrasonography is most useful investigation for diagnosing the gall stones its complications like cholecystitis[4].

Symptomatic gall stone disease can end up with its complications without prompt surgical intervention. Carl-Langenbuch performed 1st successful cholecystectomy by open technique which remained the goal standard for the management of gall stones for about a century[5]. Then Philippe Moret brought a new advancement in its management by performing first successful cholecystectomy through laparoscopic technique[6].

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Laparoscopic cholecystectomy is preferable over open cholecystectomy for its lesser duration of hospital stay, lesser mortality and morbidity, early return to work and better cosmetic results[7]. It is also considered for management of acute cholecystitis now a days[8]. Laparoscopic cholecystectomy is having certain disadvantages like its conversion into open cholecystectomy. According to some studies its conversion rate is 16-18%[9,10]. Common causes for conversion mentioned in literature are dense adhesions 66.6% common bile dusct injury 22.3% gut injury 11.1%[11] and hemorrhage 50%[11,12].

The rationale of my study is that it will be the first study so for on this topic which will provide local statistical data where adequate expertise is in the phase of development, we will come to know that whether our results are comparable with national and international studies, which will reflect the level of our expertise in the field of laparoscopic surgery and may point out the need for further improvement.

MATERIAL AND METHODS

This descriptive study was performed in the department of Surgery, Khyber Teaching Hospital Pesha-

war, Pakistan, after the approval of ethical committee over 126 patients from January 2016 to June 2016. The cholelithiasis were diagnosed on the basis of episodes of pain and tenderness at right hypochondrium aggravated by taking fatty meal and ultrasound abdomen suggestive of gall bladder stones. All the patients with diagnosis of cholelithiasis fulfilling the inclusion criteria were either through OPD or casualty referral. After taking informed consent for study and surgery, detailed history were taken and clinical examination was performed.

Preoperative investigations include full blood count, random blood sugar, viral serology, blood urea and serum creatinine, chest x ray, ECG, Ultrasound scan abdomen and liver function tests were performed in all cases in order to confirm the diagnoses and rule out associated complications.

Then all the patients were kept nil by mouth from 12:00 mid night before surgery. Preoperative antibiotics were given at the time of induction of anesthesia patients were followed throughout the procedure and were look for conversion if any and its cause such as adhesions, common bile duct injury, hemorrhage & gut injury. All the information and other demographic features of the patients were recorded in a patients predesigned proforma. Laparoscopic cholecystectomy was performed by the same surgeon with 5 years experience of laparoscopic surgery blinded from the details and inclusion of the patients in the study.

Patients with Choledocholithiasis, empyema gall bladder, Cirrhosis liver, previous abdominal surgery and Gall bladder mass were excluded as these were confounder and lead to biased the study results. The control of bias and confounders were done by strictly confining to the exclusion criteria.

RESULTS

A total of 126 patients having cholelithiasis undergoing laparoscopic cholecystectomy were included in the study. Out of 126 patients having cholelithiasis undergoing laparoscopic cholecystectomy, 102 (80.95%) were female and 24 (19.05%) male patients. Female to male ratio was 1.12:1.

The mean age was 41.32 years± 13.40 SD with age range of 18-68 years. Study population largely comprised of female patients of relatively younger age group. There were 45(38.9%) patients have age of 31-45 years followed by 47(37.3%) patients have age of less than or equal to 30 years.

Conversion rate from laparoscopic cholecystectomy to open was observed in 12(9.52%) cases while the rest of patients were go through laparoscopic surgery. The distribution of causes of conversion shows that the commonest cause being adhesions 10(7.9%) converted cases followed by hemorrhage 8(6.3%) conversions Table1. Conversion rate and causes of conversion when stratified over age, it shows that higher age is more prone as that younger ages although it was insignificant statistically Table 2. Moreover conversion were more in male patients 16.7% as compared to 7.8% in females when stratified over gender Table 3.

Table 1: Causes of Conversion

Causes of conversion		No. of patients & %ages
Adhesion	Yes	10(7.9%)
	No	116(92.1%)
Common Bile Duct Injury	Yes	2(1.6%)
	No	124(98.4%)
Hemorrhage	Yes	8(6.3%)
	No	118(93.7%)
Gut Injury	Yes	3(2.4%)
	No	123(97.6%)

Table 2:Age wise stratification of conversion and its causes

Causes of conversion		Age in years			p-value
		<= 30.00	31.00 - 50.00	51.00+	
Conversion	Yes	3(6.4%)	3(6.1%)	6 (20.0%)	.081
	No	44(93.6%)	46 (93.9%)	24 (80.0%)	
Adhesion	Yes	2(4.3%)	3(6.1%)	5 (16.7%)	0.121
	No	45 (95.7%)	46 (93.9%)	25 (83.3%)	
Common Bile Duct Injury	Yes	0 (.0%)	2 (4.1%)	0 (.0%)	0.203
	No	47(100.0%)	47(100.0%)	30(100.0%)	
Hemorrhage	Yes	3(6.4%)	1(2.0%)	4(13.3%)	0.136
	No	44(93.6%)	48(98.0%)	26(86.7%)	
Gut Injury	Yes	0(.0%)	1(2.0%)	2(6.7%)	0.170
	No	47(100.0%)	48(98.0%)	28(93.3%)	

Table 3: Gender wise stratification of conversion and its causes

Causes of conversion		Gender		p-value
		Male	Female	
Conversion	Yes	4(16.7%)	8(7.8%)	0.182
	No	20(83.3%)	94(92.2%)	
Adhesion	Yes	4(16.7%)	6(5.9%)	0.079
	No	20(83.3%)	96(94.1%)	
Common Bile Duct Injury	Yes	1(4.2%)	101(99.0%)	.261
	No	23(95.8%)	1(1.0%)	
Hemorrhage	Yes	2(8.3%)	6(5.9%)	.658
	No	22(91.7%()	96(94.1%)	
Gut Injury	Yes	2(8.3%)	1(1.0%)	0.034
	No	22(91.78%)	101(99.0%)	

DISCUSSION

Cholelethiasis is a common disease with a prevalence of 10-15% in the USA and about 16% in Pakistan[12]. Patients mostly remain asymptomatic but symptoms appear when any complication develops[3]. Symptomatic gall stone diseasecan end up with its complicationswithout prompt surgical intervention[13].

Cholecystectomy was performed by open technique for management of gall stones disease which remained the goal standard for the management of gall stones for about a century[14,15]. But now this is the era of minimally invasive or key hole surgery and performing laparoscopic cholecystectomy for GBS has revolutionized its management.[16,17] LC became an attractive treatment modality for cholelithiasis because of less scarring, shortened hospital stays, earlier returns to usual activities[18]. Despite the fact that laparoscopic cholecystectomy has got many advantages but its conversion into OC is disappointing not only for patient but for surgeon as well. But conversion should not be considered as complication of the procedure rather it is mature decision by the surgeons to avoid unnescessory legthening the duration of surgery once they encounter any difficulty or interoperative complication.

The conversion rate of 3.6% to 13.9% is reported in literature[17]. The frequency of conversion in this study being presented is 9.52%, which is nearer to that mentioned in literature[19]. Our study population was younger, mean age 41.32 years± 13.40 SD. Dohlia KM et al[20] reported mean age of 47.2 years, where as in another study it was 19 40 years[21].

The reported conversion rates for acute cholecystitis range from 12% to 37.5%.[22] However the rate of conversion is high amongst studies from the Asian countries as compared to those from western world[23]. In most cases, dense adhesion around the gall bladder and as uncontrolled bleeding were the main reasons for conversion to the open procedure[24].

Also in this study commonest cause being adhesions10 out of 12 converted cases followed by hemorrhage 8 out of 12 conversions.Moreover conversion were more in male patients. 16.7% as compared to 7.8% in females.This was similar to other studies24,25. Brodsky et al[25] and Al Salamah[26] also found male gender as a most significant determinant for conversion to OC. Memon W et al[11] reported 24% conversion rate in males vs. 4% in females, whereas Gondal M et al[12] reported 16.6% conversions in males vs 8.2% in females.Most conversions happen after a simple inspection or a minimum dissection ,and the decision to convert should be considered as a sign of surgical maturity rather than a failure.Conversion should be opted for in the beginning and at the time of recognition of a difficult dissection rather than after the occurrence of complication[27].

CONCLUSION

Laparoscopic cholecystectomy is the gold standard treatment modality in the management of symptomatic gallstones disease, which can sometimes be converted to open cholecystectomy in order to reduce the operating time.

RECOMMENDATIONS

Open cholecystectomy can be prevented if there is proper case selection, improving hands eye coordination and meticulous dissection.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Naeem M: Concept, idea and operating surgeon

Waheed R: Data collection, statistical analysis & manuscript typing.

Maroof SA: Statistics, operating surgeon

Ahmad M: Bibliography, follow-up

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.