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RE-EXAMINING CAUSES FORECASTING CONVERSION IN OPEN CHOLECYSTECTOMY

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Abstract:

Objective: *The objective is to identify the pre-operative risk factors which may be the leading cause to conversion in patients who are about to go under laparoscopic cholecystectomy.*

Study Design: *Observational / descriptive study.*

Place and Duration of Study: *This study was conducted at Jinnah Hospital lahore from january jan2016_March 2017*

Materials and Methods: *All medical records and history of the patients who were admitted to the hospital and were about to undergo Laparoscopic surgery were retrieved & reviewed. All data was collected through designated questionnaire. SPSS v 19.0 was used to analyse statistical data.*

Results: *During the period of three years a total of 36 months, 1281 patients were admitted and they were supposed to undergo cholecystectomies. Out of these total patients 156 subjects were designated to undergo open cholecystectomies they were excluded from the study therefore. Out of the remaining 1125, the subjects underwent laparoscopic cholecystectomies out of which n=45 were converted to open cholecystectomies with the conversion rate of 4%. The gender of the subjects included in our study was, male 20 and female 25. The mean age was 48.20 ± 13.048. 36 subjects were admitted via OPD and the mean of their hospital stay was 8.56 ± 5.294 days. 28 patients bore acute symptoms and 31 patients had normal liver function according to medical report tests at the time of admission in pre-surgery. 33 subjects did not display any evidence of acute cholecystitis in the ultrasound test. All patients underwent operation in direct administration of the consultant having experience of performing more than 500 laparoscopic cholecystectomies as a minimum.*

Intraoperative causes of conversion in 44 patients were:

1) Empyema 17 , 2) Perforated gall- bladder in 5, 3) Bleeding 4 ,4) Instrument failure 1

Per-operative cholangiogram (POC) for deranged LFTS and delineation was required in 17 patients.

Conclusion: *Laparoscopic cholecystectomy has acceptable conversion rates in a tertiary care hospital as compared to local and international standards. Patients with difficult pre-operative anatomy and empyema gallbladder were significant risk factors for conversion in our study.*

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INTRODUCTION:

Laparoscopic Cholecystectomy is the standard care for symptomatic gallstones since 2 decades but open conversion or classical open cholecystectomy can at times be inevitable as required for complicated or difficult gallbladders. Many consider conversion to be morbidity or a failure on part of the surgeon as technical error but should be taken as an accepted surgical practice [1,2]. This is in the best interest of the patient and operating surgeon with the sole intent to do no harm to the patient.

Different studies have shown various predictors and risk factors [3] that can lead to conversions in their setup which include age, gender, presentation [4], surgeons experience [5,6], center volume and timing of surgery [7,8] technical difficulties in terms of identifying biliary anatomy to power breakdowns.

Every centre should have the understanding of its own conversion rate and pre-operative risk factors of conversion. Knowing own conversion will greatly help in patient counselling and comparison of existing practices with the available literature. Incorporating this routine into an audit also helps to control such factors and improve surgical care.

Therefore the purpose of the study is to identify pre-operative risk factors leading to conversion in patients undergoing laparoscopic cholecystectomy.

MATERIALS AND METHODS:

This observational / descriptive study was conducted in January 2016 _March 2017 . All patients admitted with symptomatic gallstones either through outpatient or emergency.

Inclusion Criteria:

1. All adults between the ages of 18-70 years of age
2. ASA ≤ 3
3. Patients having laparoscopic to open conversions

Exclusion Criteria:

1. Patients having planned open cholecystectomies
2. ASA ≥4
3. Consent for laparoscopy not given

The Study was started after formal approval of General Surgery faculty, Jinnah Hospital Lahore . Theater records of all patients who underwent Laparoscopic to open conversion admitted to the department, retrieved &reviewed. All data was entered into a designated questionnaire and SPSS ver 19.0 was used for statistical analysis.

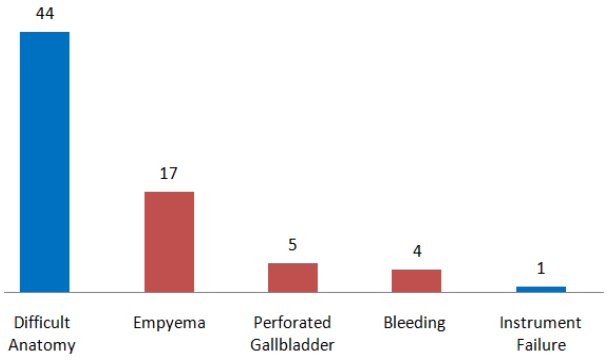
Cases were reviewed in terms of age, gender, total hospital stay, symptoms, ultrasound findings, pre-operative LFTS, and reasons of conversion using descriptive statistics.

RESULTS:

Total 1281 patients admitted for cholecystectomies. Out of which 156 patients had planned open cholecystectomies and were therefore excluded from the study.

Table N o . 1 : Comparison of Patient Volume to Conversion rate.

Ser no.	Study	Patient Volume /year	Conversion rate
1.	Genc V et al 10 CLINICS 2011.	>400 cases	3.16 %
2.	Sakpal, S. et al. JSLS 2010.	>400 cases	4.9 %
3.	Our study	>350 cases	4%
4.	R. Azmi et al, J Postgrad Med 2005.	<300 cases	7.5%
5.	Pervaiz Iqbal et al, Pak J Surg 2008.	<100 cases per year	9.4 %
6.	Rashid T et al[9]. J Ayub Medical College, Abbottabad, 2016	<100 cases per year	7 %



Graph No.1: Intraoperative Causes of Open Conversion

1125 patients underwent laparoscopic cholecystectomies out of which 45 were converted to open with the conversion rate of 4%. In our series, males were 20 and 25 females with the mean age of 48.20 ± 13.048. 36 patients were admitted from OPD and their mean hospital stay was 8.56 ± 5.294 days. Pre-surgery 28 patients had acute symptoms and 31 patients had normal liver function tests at the time of admission. 33 patients had no evidence of acute cholecystitis. Minimum experience of the consultant under the supervision of whom undergo these operations had experience of > 500 laparoscopic cholecystectomies. One of the most common causes of conversion was difficult anatomy (44 patients) which was associated with:

- Empyema in 17
- Perforated gall bladder in 5
- Bleeding in 4
- Instrument failure in 1.

17 patients required pre-operative cholangiogram (POC) for deranged LFTS and difficult anatomy.

DISCUSSION:

Laparoscopic cholecystectomy (LC) is the treatment of choice for symptomatic gallstones, but possibility of unexpected operative findings and complicated preoperative course in some cases induces necessity of conversion10,11. Knowledge of the underlying reasons, the rate and impact of conversion could help surgeons during preoperative assessment and improve the informed consent of patients. The need for conversion is not the failure of operating surgeon but an attempt to avoid complications which might arise if expeditious surgery is performed (12).

The conversion rates according to the studies do show geographical variations from 1-19 %(13-16) and some have shown increased propensities towards male gender. However, in our series, females were predominant with P value 0.106. The main reasons for conversion in our series were difficult pre-operative anatomy, empyema gallbladder, and haemorrhage (17) as shown in graph 1.

In our study, rate of conversion was 4% which is comparable with the international literature and one of the lowest among the local literature. It is also observed that centres with high volume surgeries (>400 cases per year) have a conversion rate of about <5% as opposed to those with lower volume [5]. Hence centres with high volumes are able to maintain a reasonable low level of conversion. Comparison of volume on conversion rate is shown in table 1.

Pervaiz et al [18] in his study showed presence of adhesions as a sequel of repeated previous attacks as the leading cause of conversion among empyema gall bladder and instrument failure.

It was observed that there were no pre-operative significant risk factors leading to conversion in fact majority of the patients did not show any evidence of the acute cholecystitis as evident by peri-cholecystitic fluid, impaction of stone at the neck of gall bladder and increased wall thickness.

In Tayeb et al[19], they evaluated the pre-operative risk factors esp. age and the per-op ultrasound findings in predicting the conversion. In their study by using regression analysis, it was observed that age> 60 years and pre-operative ultrasound findings features suggestive of acute cholecystitis and gall bladder thickness > 3mm were the independent risk factors leading to conversion. In our series, the mean ages of the patients were 48.7 years ±2.7.

In our series, neither the pre-op ultrasound nor the lfts helped in predicting the conversion. In our series, 33.3% of the patients required additional POC to confirm the anatomy. There were no reported bile duct injuries in our series. Kumar et al [20] in his study noted to have <1% of patients had conversion leading to instrument failure while Pervaiz et al had 2.94%.

CONCLUSION:

Laparoscopic cholecystectomy in a tertiary care hospital has acceptable conversion rates as compared to local and international standards. In our series, patients with difficult pre-operative anatomy and empyema gallbladder were significant risk factors for conversion.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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