Original Article

FREQUENCY OF CONVERSION TO OPEN CHOLECYSTECTOMY AMONG MALE AND FEMALE PATIENTS UNDERGOING LAPAROSCOPIC CHOLECYSTECTOMY

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ABSTRACT:
OBJECTIVES:

To determine the frequency of conversion to open cholecystectomy among male and female patients undergoing laparoscopic cholecystectomy.

STUDY DESIGN:
cross sectional study

SETTING:

This study was conducted in surgical departments, Allied & DHQ Hospitals Faisalabad.

DURATION OF STUDY:

18 months from 01-01-2010 to 30-06-2011

SAMPLE SIZE:

144 patients (72 in each group i.e. male and female)

METHODS:

Patients between 25 to 60 years of age of either gender with BMI less than 30 subjected to laparoscopic cholecystectomy on elective list. Various parameters (age, sex, duration of surgery, conversion to open cholecystectomy, reason for conversion) were analyzed.

RESULTS:

Statistical analysis revealed overall mean age 44.79 years and the mean duration was 34.98minutes. Mean age for male patients was 46.29 years and for female patients was 43.29years. Mean duration of laparoscopic cholecystectomy in male patients was 41.54 minutes and in female patients was 28.42 minutes. Conversion to open cholecystectomy in male was 11.1% and in female 2.8%. Main reason for conversion to open cholecystectomy was excessive bleeding 62.5% in male and 100% in female patients. Other reasons for conversion seen in male patient were biliary leakage 25% and adhesions 12.5%.

CONCLUSION:

Laparoscopic cholecystectomy can be performed safely in male patients with symptomatic gallstones. The duration of surgery, difficulty in surgery and conversion to open surgery is more in male patients as compared to female patients.

KEY WORDS: Laparoscopic cholecystectomy, conversion to open cholecystectomy

INTRODUCTION:

In this era of minimal invasive surgery laparoscopic cholecystectomy is a demanding procedure, owing to its superior outcome to open cholecystectomy acknowledged as a procedure of choice in modern world to deal with symptomatic gall stone diseases. [1]

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A shorter hospital stay, less postoperative pain, a faster recovery, better cosmesis, and lower cost are some of the advantages of LC over open surgery.

At times, not often enough laparoscopic cholecystectomy desires to be converted to conventional open method for removing gall bladder. Conversion is not considered as a complication rather it would avoid complications and provides a better field for their management if already happened. In literature over all conversion rates to the open procedure ranges from 0 to 20%. [2]

The conversion rate and complications associated with LC depend on the experience of the surgeon and the degree of difficulty faced during surgery, which can be affected by factors such as a history of previous abdominal surgery, recurrent attacks of cholecystitis, and male gender. Other factors include obesity, difficult dissection at Calot's triangle, dense adhesions, uncontrolled haemorrhage, injuries to biliary tree, congenital anomalies and intervention in acute phase. Risk factors for conversion also include intraoperative internal organ trauma, old age, and failure or lack of laparoscopy instruments.

It would be useful to have some reliable predictive factors[3] (male gender, age, acute cholecystitis, obesity, anatomical anomalies, difficult dissection and bleeding) by using those we could predict pre-operatively the need for conversion. Identification of these risk factors has advantage as patient can be prepared psychologically and can be scheduled properly for operation lists to minimize the procedure related cost, which is a significant problem in developing countries.

In Different studies Male gender was found to be the only statistically significant risk factor for conversion. [4, 5, 6] Higher conversion rate among males was attributed it to a greater incidence of gallbladder and biliary tree anatomic difficulties in males.[7] Males pay less attention to their health problems and permit them to advance, and by the time these patients seek treatment the stage has been set for a difficult laparoscopic cholecystectomy. It has been proved that in experienced hands Laparoscopic cholecystectomy decreases post operative pain, reduces hospital stay and has decreased morbidity as compare to OC [8] while conversion increases postoperative morbidity.[9] There is also decreased incidence of wound infection and post operative ileus in patients undergoing LC. Nevertheless LC has some disadvantages of conversion to open but still disguising the advantage of ensuring patient's safety.[10]

In Pakistan LC is one of the most common operations in younger age group in teaching hospitals. But the available reports on safety and efficacy of LC in male patients for symptomatic gallstones in Pakistan are still scanty and conflicting as compare to international data. This study is done to evaluate the reasons for conversion to open cholecystectomy in male patients so that laparoscopic cholecystectomy can be performed safely in male patients.

OBJECTIVE OF STUDY:

The objective of my study is to determine the frequency of conversion to open cholecystectomy among male and female patients undergoing laparoscopic cholecystectomy.

MATERIALS AND METHOD:

It's a Cross sectional study conducted in Surgical Departments Allied & DHQ Hospitals, Faisalabad from. Patients were selected with non probability convenient sampling technique. 144 patients (72 in each group) between 25 to 60 years of age of either gender with BMI less than 30 subjected to LC on elective list.

Inclusion Criteria:

Patients between 25 to 60 years of age of either gender with BMI <30, put on elective list for laparoscopy having symptomatic gallstones disease

Exclusion Criteria:

Patients with previous major abdominal surgery and contraindicated for laparoscopy i.e. Cirrhosis, massive ascites and bleeding diathesis, suspicion of Gall Bladder Ca.

RESULTS:

In this study 144 patients between 25-60 year of age suffering from symptomatic gall stones underwent Laparoscopic cholecystectomy. In 144 patients minimum age was 32 years and maximum was 59 years with mean of 44.79(standard deviation = 6) and minimum duration is 15 minutes and maximum is 79 minutes with mean of 34.79 minutes and the standard deviation is 14. (Table-1) Out of 72 male patients minimum age was 33 years and maximum 59 years with mean of 46.29 years and standard deviation of 6.71. Out of 72 female patients minimum age is 32 years and maximum is 57years and the mean age was 43.29 years and standard deviation of 6.68.(Table-2)

The mean duration of all 72 male patients was 41.54 minutes with standard deviation of 15.83. The mean duration of all 72 female patients was 28.42 minutes with standard deviation is 7.57. (P-value (1-sided) = 0.00005) (Table-3) The conversion to open surgery was done in 8 (11.1%) male patients and 64 (88.9%) underwent laparoscopic cholecystectomy. Out of 72 female patients only 2 (2.8%) patients were converted to open surgery and 70 (97.2%) patients underwent laparoscopic cholecystectomy (table 4). Here the chi-square value is 3.869 and the p-value is 0.0245.Out of 8 male patients in which conversion to open cholecystectomy was done, 5(62.5%) patients were converted due to excessive bleeding, 2 (25%) were due to biliary leakage and 1 (12.5%) was converted due to adhesion. Out of 72 female patients only 2 (100%) were converted to open cholecystectomy due to excessive bleeding.

Table 1: (Descriptive Statistics of age and duration of laparoscopic cholecystectomy)

	n	minimum	maximum	mean	Standard deviation
Age	144	32	59	44.79	6.84
Duration	144	15	79	34.98	14.01

Table 2: Age distribution in Male and Female Patients

Group	N	Minimum	Maximum	Mean	Standard
Male AGE	72	33	59	46.29	6.71
Female AGE	72	32	57	43.29	6.68

Table 3: Descriptive Statistics of distribution of duration in Male and Female Patients

Group	n	mean	Standard deviation
Duration Male	72	41.54	15.83
Female	72	28.42	7.57

p-value (1-sided)= 0.00005

Table 4: Distribution of conversion in male and female patients

Conversion	Male		Female		total
Yes	8	11.1%	2	2.8%	10
No	64	88.9%	70	97.2%	134
Total	72		72		144

Chi-square value = 3.869 Df = 1 p-value (1-sided) = 0.0245

Table 5: Descriptive statistics of distribution of reasons for open surgery

Reason	male		female		
Excessive bleeding	5	62.5%	2	100 %	7
Biliary Leakage	2	25%	0	0	2
Adhesion	1	12.5%	0	0	1
Total	8		2		10

DISCUSSION:

Laparoscopic cholecystectomy is regarded as the gold standard in treating symptomatic cholelithiasis. Its benefits compared to open cholecystectomy are lower morbidity, shorter hospital stay, quicker recovery and decreased postoperative pain. Conversion to open cholecystectomy is, however, still necessary. Conversion will lengthen the procedure and hospital stay, and is associated with increased morbidity .[9]

A range of risk factors has been proposed for this conversion. They are surgical team expertise, patients factors and equipments failure. As for the surgical team has an optimum expertise and equipments are available for smooth running of the procedure, the patients related factors needs to be explored as reason for conversion. The male gender of the patient has been discussed as a risk factor for conversion to open surgery.

In our study the overall rate of conversion was (6.9%) and the mean age of the patients was 44.79 years, this is compare able to study conducted in teaching hospital at Karachi in which conversion rate was 6.5% and mean age was 41.25years.[11] In study conducted at tertiary community hospital conversion rate was (4.9%) and mean age of patients converted to open was 66.1years.[12] In another analytical study Daradkeh[13] reported a conversion rate of (2.6%) from LC to OC, Ishizaki et al[14] reported (7.5%) conversion rate and Ibrahim et al[15] described up to (10.3%).

Regarding the gender the conversion rate was higher in males. In this study conversion rate in male is (11.1%) and (2.8%) in females while in study conducted at a community hospital it was found more in males (9.1%) as compared to females (3.5%).[12] In the study conducted in teaching hospital at Karachi [11] 16.45% males required conversion as compared to 5.09% females, the ratio of male conversion is more again favoring our results. In another study conducted at general teaching hospital conversion rate appeared to be significantly higher for men (20.4%) than women (9.2%) and they declared the male gender as the independent predictive factor for conversion to open.[16]

Reasons for conversion observed in our study were excessive bleeding, biliary leakage and adhesions. The causes of conversion in other studies include the difficult anatomy at Calot's triangle (54.32%), acute inflammation in (52.27%) and adhesions from chronic cholecystitis in (36.36%) in addition to equipment failure in (14.81%) of cases.[11] In contrast to this our study showed common reasons for conversion as bleeding (100%) in female and (62.5%) in male and (25%) of male were converted due to biliary leak in addiction (12.5%) due to adhesions. In the other study adhesions were the most common reason for conversion (40.4%) fallowed by CBD injury (1.8%). [12] Yet in another study the most frequent reasons for conversion found to be fibrosis of Calot's triangle (30%) and adhesions (27%).[16] In another study conversion was due to frozen Calot's triangle in (50%) of cases fallowed by bleeding and difficult anatomy (25%) each.[17]

The reason for the increased risk of conversion for men is not clear. It might be possible that inflammatory process may be more aggressive in male resulting in more dense adhesions. Disease presentation may be delayed in males. More frequent association with severe, acute and chronic disease has also been postulated. It is generally known that men have an up to twofold increase of visceral adipose tissue compared to women, which might explain technical difficulty and increased conversion rate in men.

CONCLUSION:

The results of present study indicate that the duration and conversion rate to open cholecystectomy is more in male than in female patients. This translates into difficult dissections during laparoscopic cholecystectomy in male patients. Early

intervention is suggested in male symptomatic gall stones disease.

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