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LAPAROSCOPIC CHOLECYSTECTOMY: RATE OF AND REASONS FOR CONVERSION TO OPEN CHOLECYSTECTOMY

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ABSTRACT

Objectives: To determine the conversion rate of Laparoscopic Cholecystectomy (LC) and its reasons to open surgery.

Material and Methods: This was a descriptive observational study carried out at Khyber Teaching Hospital, Peshawar from January 2009 to December 2009. Patients were evaluated through standard proforma after detail clinical history, physical examination and necessary investigations. The cases were analyzed in relation to conversion rate to open and its reasons.

Results: A total of 335 patients underwent Laparoscopic Cholecystectomy during the study period. The over all rate of conversion was in 11 (3.28%) patients, with commonest cause being dense adhesions in 6 (54.54%) patients. Bile duct injury and bleeding were the second common reasons for conversion in 2 (18.18%) cases each. The rate of conversion was more 7 (2.089%) in acute emergency cases as compared to elective cases 4 (1.19%). The mean operating time was 46 minutes and the hospital stay was two days.

Conclusion: Our study emphasizes that LC was a safe and preferred method of treatment with acceptable conversion rate even in acute cases in experienced hands.

Key words: Laparoscopic, cholecystectomy, Common bile duct, Gallstones, Conversion.

INTRODUCTION

Gallstones are a major health problem in many parts of the world, and its incidence increases with age.[1] A number of clinical series including current study, emphasize that laparoscopic Cholecystectomy (LC) has revolutionized minimally invasive procedures.[2,3,4,5] LC has proved to be an effective and safe procedure both in elective and emergency conditions. The decreased postoperative pain, earlier oral intake, shorter hospital stay and low cost, early resumption of normal activity, and improved cosmesis have been well recognized after laparoscopic Cholecystectomy.[6,7,8]

However, conversion to open is inevitable in some cases which causes prolongating of hospital stay, increased cost, dissatisfaction of the patients.[9] Despite of increasing expertise and advances in technology, conversion to open procedure is required in a varying proportion of patients, which ranges from 1.5% to 19% in different studies and centers.[6,10,11]

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Laparoscopic Cholecystectomy was first introduced by Muhe in 1986, and replaced the open technique.[12] Recent reports also indicate that LC could be a safe and effective treatment option for patients with acute cholecystitis, although the procedure tends to be more difficult with a higher risk of conversion.[13,14] Laparoscopic Cholecystectomy for the management of acute cholecystitis or complex billiary anatomy is commonly associated with more complications and increased common bile duct injuries.[15,16] This conversion is neither a failure nor a complication, but an attempt to avoid complications.

MATERIAL AND METHODS

Patients who under went Laparoscopic Cholecystectomy in the surgical department Khyber Teaching Hospital, Peshawar, Pakistan from Jan 2009 to Dec 2009 were analyzed. Three thirty-five patients underwent LC, 284 (84.77%) were female and 51 (15.22%) were males patients. Eleven (3.28%) converted patients were included as cases. Pre operative workup included a complete blood count, blood urea and sugar, electrolytes, liver function tests, viral profile, chest X-ray and ultrasound of abdomen. Ultrasound was the main stay for the preoperative diagnosis of gallstones disease. Detailed proforma was developed to record information including

ultrasonographic parameters, previous history of operation, duration of operation, operative findings, reasons for conversion, postoperative complications, cost and stay at hospital. The inclusion criteria was those patients who under went LC for Symptomatic galls stone both elective and emergency cases. Those patients with history of obstructive jaundice, raised alkaline phosphatase with dilated common bile duct and pancreatic duct, CBD stones, gall bladder mass and cardiopulmonary diseases were excluded from the study.

The operation was performed with standard four-ports technique, using careful peritoneal insufflations with 12-15 mmHg pressures. The closed veres needle technique was used to obtain pneumoperitonium. Cystic duct and cystic artery were skeletinized keeping in view the anatomy of Calot's triangle and clamped with metallic liga clips separately. The cases were analyzed in relation to conversion rate to open surgery and its reasons for the conversion.

RESULTS

A total of 335 patients were attempted during the study period. Indications for LC are shown in Table 1. Among these cases, 284(84.7%) were female and 51(15.2%) were male. Out of 335 patients, total 11cases had to be converted to open procedure with conversion rate of (3.28%). The reasons of conversion are shown in Table 2. The two patients with bile duct injury were, one had right hepatic duct clipped due to misidentification as cystic duct (Strassberg type B) and another as direct trauma to CBD. All injuries were identified intraoperatively and were managed at same sitting. It has been our policy to keep drain after LC for 24 hours.

Out of 11 converted cases, 7 (63.63 %) were emergency and 4 (36.36%) were elective cases. Out of 11 converted patients, 8(72.7%) were female and 3(27.3%) were male. The mean age was 46 years (range 24-60) with +1.5 SD for both sexes.

Table 1: Indications for LC (Comparison of Emergency to Elective Cases)

S. No.	Indications for LC	No. of patients and %age
1.	Acute-calculus chole-cystitis (emergency)	75 (22.38%)
2.	Symptomatic-gall stones (elective)	260 (77.61%)

Table 2: Reasons for Conversion

S. No.	Reasons	No. of patients and %age
1	Dense adhesion (inade-quate exposure at calot's triangle)	6 (54.54%)
2	Bile duct injury	2 (18.18%)
3	Bleeding	2 (18.18%)
4	Instrumental failure	1 (9.09%)

DISCUSSION

No operation has exploded upon the surgical scene quite like LC. It has rejuvenated general surgery and has become the gold standard of care for management of patients with symptomatic gallstones. Born in secrecy and developed under skepticism and hospitality, LC triumphed and was ultimately quite acceptable.[17] Despite these advantages, conversion to open procedure is required in varying proportion ranging from 1.5% to 19% in different studies,[1,3,11,12] whereas in our study it was 3.28%. Recent reports also indicate that LC could be a safe and effective treatment option for patients with acute cholecystitis, although the procedure tends to be more difficult with a higher risk of conversion.[13,14] In our experience, the

Table No-3: Comparison of Conversion Rates

S. No.	Study	Place	Year	No. of cases and % age of conversion
1.	Current study	Peshawar Pak	2009	335 (3.28%)
2.	Memon W et al[31]	Hyderabad	2007	216 (4%)
3.	Butt et al[30]	Lahore	2006	300 (4%)
4.	Dholia et al[18]	Larkana	2005	443 (11.5%)
5.	Barut et al[16]	Romania	2005	6985 (3.3 2%)
6.	Tayeb M et al[21]	Karachi	2005	1249 (7.5%)
7.	Guraya et al[29]	Saudi Arabia	2004	549 (2.9%)
8.	Vecchio et al[19]	USA	1998	114005 (2.2%)

over all conversion rate was 11 (3.28%) of the total LC performed which is in accordance with the literature.[18,19] The rate of conversion was high in female (72.7% vs 27.3% male) contradicted to (16.45% male vs 5.9% female) study by Shamim.[20] Out of 11cases, patients with acute attacks had high conversion rate (63.63%) cases vs (36.36%) elective identical to Bhattacharya K & Shamim.[1,20] Since the rate of conversion in patients with acutely inflamed gallbladder was 7(63.63%), we recommend LC in acute cholecystitis where feasible as has been reported in the literature.[32] Rate of conversion to open was less (3.2%) compared to study by Bhattacharya K, Tayeb, Iqbal P. (7.8%, 7.5% and 9.4%) respectively.[1,21,22] However, the rate of conversion is high amongst studies from the Asian countries as compare to western world.[23] Dense adhesions at the triangle of calot's was the most common reason for conversion 6 (54.54%) and CBD injury being the 2nd common which is comparable to study by Changiz G. et al, Tayeb and Memon respectively.[9,21,31] All injuries were identified intraoperatively and were managed at same sitting. Patients having increased bile leak postoperatively were managed conservatively and leak ceased spontaneously with in 7 days. Adhesions are probably the cause of increasing conversion rate in aged patients.[9,21,24,25] History of laparotomy, a predisposing factor for adhesions, was found to an unyielding correlate of conversion in this study in agreement with previous reports.[9,26,27] The uncontrolled bleeding 2 (18.18%), instrumental failure (insufflator) 1(9.09%) were also noted which is comparable to other studies.[28,29]

Jaffary et al[28] has found a conversion rate of 7.53% in their study of 93 patients underwent LC, instrumental failure being the most common cause which was contradicting to our study. Guraya et al[29] in his study of 549 patients under went LC, the conversion rate was 2.9% comparable to our study (3.28%), difficult dissection being the commonest cause due to dense adhesion and bleeding. The identification of the factors that reliably predict to convert LC to open technique would decrease the incidence of intraoperative complication and helps in patients counseling.[30] We still believe from our experience that within 72 hours of symptoms, the tissue planes are edematous and inflamed but are easier to dissect, having minimal adhesions. But after 72 hours, the tissue become more friable and becomes risky to dissect till 3-4 weeks time when inflammation subsides and fibrosis sets in.

CONCLUSION

Our study emphasizes that LC was a safe and preferred method of treatment with acceptable conversion rate even in acute cases in experienced hands.

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