Conversion from Laproscopic Cholecystectomy to Open Cholecystectomy when and why?

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In this study 450 patients presented with symptomatic cholelithiasis, under went Laproscopic cholecystectomy from 1-1-2003 to 30-6-2004.Sex ratio showed that 92% were female and 8% male patients. Most of the cases 44% are in the age group 40-49 years. About 74% patients had chronic cholecystitis while 15% had acute cholecystitis. Mucocoele was present in 6%and empyema in 5% of cases. Conversion from laproscopic to open cholecystsectomy was done in 14 patients i.e 3.11%. The reason for conversion among these patients was acute cholecystitsis in 1.33% and anatomy was not clear. Heamorrhage occurred in 0.88%, empyema gall bladder with thickened, odematous gall bladder in 0.66% cases. Hypotention occurred in one patient
Key words: Laparoscopic cholecystectomy, open cholecystectomy, conversion

A conversion is defined as the abandonment of laproscopic cholecystectomy followed by the conventional abdominal incision for the purpose of completing the procedure .

Conversion under these circumstances reflects sound surgical judgment and should not be considered a complication of laparoscopic cholecystectomy[1].

The conversion rate ranges from 3% to 8%[2]. In all large reported series the operation could not be completed laparoscopically in a proportion of patients. During the learning period a high conversion rate is inevitable and should not be regarded as failure. How ever as surgical experience and confidence grow it is likely this rate will fall, surgeon ultimately expects to achieve a conversion rate less than 2%[3]. Conversion is decreased in more experienced hands[4].

Conversion falls in two different groups done for safety those done by necessity. Conversion done by necessity are those that must be restored when a major event occurs during the procedure that cannot be treated laproscopically. There is dense scarring between the liver and the gall bladder because of the previous repeated infections or treated medically Another major event is heavy bleeding that is uncontrollable laparoscopically. Third important event is the injury to the common bile duct or hypotention developed at the time of pneumoperitoneum..

Patients and methods:
In this study patients were seen and admitted through the surgical out patient department Inclusion criteria was all patients with symptomatic cholelithiasis. Exclusion criteria was patients with co morbid diseases like ischaemic heart disease ,morbid obesity and Jaundice .A detailed history was taken and a detailed examination was done. Investigation like routine blood, liver function test and abdominal ultrasound scan was advised. All findings were recorded on a proforma. All patients who had conversion, their video tapes were preserved along with their operative details. The results were tabulated in the end.

Conversion was done by laparotomy by Kochers incision in all cases. Abdomen was opened, explored and dealt accordingly.

Results:
Table .1 shows the distribution of the patients from 20-69 yrs. Most of the cases 44% are in the age group 40-49 years. Table 2 shows about the gender, 92.89% are female and 7.11% are male Table is for the symptoms of the patients 73.80% had chronic cholecystitis, 15.1% had acute cholecystitis.6% were with mucocoele gall bladder while 5.11% had empyema gall bladder. Table 4 shows the reason for conversion. only 14 patients i.e 3.11% were converted to open cholecystectomy. Among these patients 1..33% were converted due to acute cholecystitis. Bleeding occurred in 0.88% patients. Empyema was seen 0.66% of cases .Hypotension occurred in 0.22% patients. Table 5 shows the complications which occurred in only 29 patients. Common bile duct injury in one patient (0.22%), bile leak 0.88%,hemorrhge 1.33%, wound infection 1.77%, biloma 0.88%, pulmonary complications in 1.33% of cases.

Table 1: Age distribution (n=450)

Age in years	n=	%age
20-29	5	1.11
30-39	170	37
40-49	201	44
50-59	64	14
60-69	10	2.22

Table 2: Sex distribution (n=450)

Sex	n=	%age
Female	418	92.8
Male	32	7.11

Table 3: Symptoms of patients (n=450)

Symptoms	N=	%age
Chronic cholecystitis	332	73.80
Acute cholecystitis	68	15.1
Mucocele	27	6
Empyema	23	5.11

Table 4: Conversion (n=450)

Conversion	N=	%age
Acute cholecystitis	6	1.33
Bleeding	4	0.88
Empyema	3	0.66
Hypotension	1	0.22

Table 5: Complications (n=450)

Complications	n=	%age
Injury CBD	1	0.22
Bile leak	4	0.88
Hemorrhage	6	1.33
Wound infection	8	1.77
Biloma	4	0.88
Pulmonary	6	1.33

Table 6: Postoperative study (n=450)

Post operative day	n=	%age
1 day	261	58
2 days	94	20.88
3 days	82	18.22
4days	13	3.11

Table 6 is about the post operative hospital stay, 58% patients had a stay for one day, 19.88% in 2 days, 18.88% for 3 days and 2.22% for 4 days only.

Discussion:

In this study laparoscopic cholecystectomy was successfully completed in96.89% of patients while in 3.11% patients the operation was abandoned and traditional cholecystectomy was performed. The conversion rate is 3.11% According to one study done by Richardso et al[5] the conversion rate was 3%,same as our results but another study by Kamana, Kologlu et al[6] shows a different rate of 48% which is much higher than our study. In our study most of the cases were between 40-49 years i.e 44% and about 92.8% were female patients.

The most common reason for conversion was seen in patients with acute cholecystitis. There were 6 patients in whom we converted to open cholecystectomy i.e1.33%. Severe inflammation and increased vascularity due to acute cholecsytitis resulted in difficult dissection. Adhesions also interfere with good visulization and inability to define the clear anatomy so selection of the patient is very important. Fried et al[7] 1994 and Peters et al[8] have reported that acute cholecsytitis represents a group at risk factor for conversion to open laparptomy. Fried et al[7] also reported that difficult dissection secondary to adhesions and severe inflammation is the most common reason for the conversion.Another study by Habib F.A. Kolechalan[9] in 2001 showed a conversion rate of 32%. In acute cholecystitis even traditional cholecystectomy performed at an optimal period during which surgery can be carried out safely i.e 48-72hrs,later risks of complication is higher, it is better to wait until the inflammation has settled[10].

In 4 patients i.e 0.88% hemorrhage occurred leading to conversion to open cholecystectomy. In 2 patients the bleeding was from the cystic artery stump, control of hemorrhage was tried by diathermy but the procedure was converted for the safety of the patient. In one patient hemorrhage occurred from A-V malformation at porta hepatic leads to profuse hemorrhage, and further manipulation was stopped.

In one patient hemmorrhge occurred from the liver bed. A study by Fried et al reported that 0.66% patients required conversion due to intraoperative hemorrhage. In 3 patients (0.66%) with empyema gall bladder it was difficult to proceed. The thickened gall bladder wall made traction on the gall bladder difficult.

In one patient (0.22%) there was sudden hypotention seen following pneumopertoneum. Procedure was abandoned for the safety of the patient. Fitzgibbons et al[11] reported that massive infusion of CO_2 results in a clinically significant gas embolism in the right atrium or the ventricle, it might serve to block the venous return, resulting in decreased cardiac out put. The condition is best treated by immediate deflation of pneumoperitoneum

Conclusion:

Conversion to traditional cholecystectomy is not a complication of laparoscopic cholecystectomy,rather it is a wise surgical judgment to limit morbidity.despit the good results of laparoscopic cholecystectomy patients undergoing surgery should be informed that there is possibility that they required conversion to traditional cholecystectomy if there is complication.

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