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Laparoscopic sub total cholecystectomy - Our experience

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ABSTRACT

INTRODUCTION

Laparoscopic cholecystectomy (LC) is considered as a standard procedure for cholelithiasis. But when the anatomy of triangle of Calot is distorted by acute or chronic inflammation, Open Subtotal Cholecystectomy with or without cystic duct ligation is the choice of surgery. Increasing experience in laparoscopic surgery has made laparoscopic Subtotal cholecystectomy (LSTC) as a safer feasible alternative. In the recent years, a few studies have shown good results with LSTC.

MATERIALS AND METHODS

In the present study 590 laparoscopic cholecystectomies performed in Railway Hospital, Secunderabad were analyzed.

RESULTS

Out of the total 590 cases, 125 were difficult gall bladder surgeries. Subtotal cholecystectomy was performed in 25 cases, out of which 23 were completed laparoscopically. Three patients had residual calculi which were managed by ERCP and two patients had cholangitis which were treated with antibiotics. There was no mortality and minimum morbidity amongst the patients.

CONCLUSION

Laparoscopic Subtotal cholecystectomy is a safe, relatively simple and definitive procedure allowing removal of a difficult gallbladder and reducing the need for open conversion or cholecystostomy in the majority of patients..

KEY WORDS: Cholecystectomy, Laparoscopic Subtotal cholecystectomy, Gall bladder.

INTRODUCTION

Laparoscopic cholecystectomy (LC) is considered gold standard for treatment of cholelithiasis in this era. It is accepted as a standard procedure for cholecystectomy for various gallbladder diseases particularly cholelithiasis. When LC began in the early 1990s, acute cholecystitis and cirrhosis were considered comparative contraindications [1].Growing experience has allowed the use of LC in more complex procedures, such as in acute cholecystitis patients[2]. The risk of bleeding and bile duct injury during a standard cholecystectomy is greatly increased while dissecting in Calot's triangle, particularly in the presence of severe inflammation or fibrosis of the gallbladder[3]. As a significant proportion of patients with complicated cholecystitis are converted to open surgeries to complete the procedure, open subtotal cholecystectomy has been

proven to be a safe, simple and definitive procedure in this situation. Increasing laparoscopic experience and techniques have made laparoscopic subtotal cholecystectomy (LSTC) a feasible option. In recent years, few studies with a few cases of LSTC have shown good results in patients with various forms of cholecystitis[4].

MATERIALS & METHODS

A total of 590 laparoscopic cholecystectomies were performed in S.C. Railway Hospital, Secunderabad from March, 2004 to February 2013. Out of these 590, 125 cases were considered as difficult gall bladders due to presence of acute (n=15) or chronic inflammation (n=110). There was no mortality in any of the patients and 12(2.03%) cases were converted to open due to post-operative adhesions due to previous surgery in 8 cases, bleeding in 3 cases and injury to bile ducts in 1 case. Subtotal cholecystectomy was performed in 25(4.23%) cases of which 23(3.89%) cases underwent laparoscopic Subtotal cholecystectomy (LSTC) and 2(0.33%) open subtotal cholecystectomy. In 22 cases where there were dense adhesions near Calot's triangle or near CBD and duodenum and fundus, the first technique was employed. When it was concluded that it was risky/difficult to isolate cystic duct and artery, gall bladder was opened as proximal as possible. All stones, pus and sludge were cleared and thorough irrigation was performed. Utmost care was taken to clear all calculi. In 3 cases where it was possible to dissect cystic duct and cystic artery, they were clipped; when there was difficulty in separating gallbladder from liver bed, that part of gallbladder was left attached to liver and remaining portion was excised. Exposed gall bladder mucosa was cauterized. A 8 or 10F infant feeding tube was left in the reaming part of gall bladder and the wall was sutured. An abdominal drain was kept in sub hepatic space. All cases were followed regularly up to 1 year after surgery with USG and LFT. ERCP was performed when indicated.

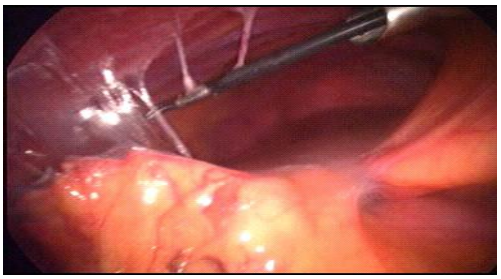
RESULTS

Total 590 patients underwent LC and 125 (22.88%) were difficult gall bladders due to presence of acute (n=15) or chronic inflammation (n=110). There was no mortality and 12(2.03%) cases were converted to open due to post-operative adhesions due to previous surgery in 8 cases, bleeding in 3 case and injury to bile ducts in 1 case. Subtotal cholecystectomy was performed in 25(4.23%) cases of which 23(3.89%) cases underwent Subtotal laparoscopic cholecystectomy (LSTC) and 2(0.33%) open subtotal cholecystectomy. Of the 25 case where subtotal cholecystectomy was done, 20 cases had evidence of chronic inflammation (dense omental adhesions=6, adhesions with duodenum=1, adhesions with common bile duct=1, thick wall gallbladder=6, wide cystic duct=2 and frozen Calot's triangle=4) and 5 cases had evidence of acute inflammation (3 had acute cholecystitis and 2 had empyema).1 case in acute and 1 case in chronic group had moderate to severe bleeding. In 2 cases only subtotal cholecystectomy could be done in spite of conversion to open.

No of Total Laparoscopic Cholecystectomies	No of difficult cases	No of conversions to open	No of Laparoscopic Subtotal cholecystectomies	No of open Subtotal cholecystectomies
590	125	12	23	2

Mean hospital stay in patients who underwent subtotal cholecystectomy (both open and laparoscopic) was 13 days. 3 patients had residual calculi which were successfully removed by ERCP. 2 patients had cholangitis which required higher antibiotics and prolonged hospital stay before complete recovery. 1 case had bilioma which was treated by US guided aspiration and catheter. 8 patients had symptoms of dyspepsia with normal LFT and USG findings and responded to PPIs.

OMENTAL ADHESIONS



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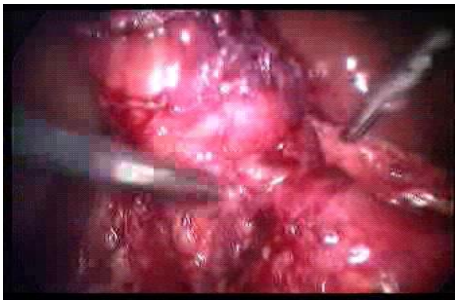
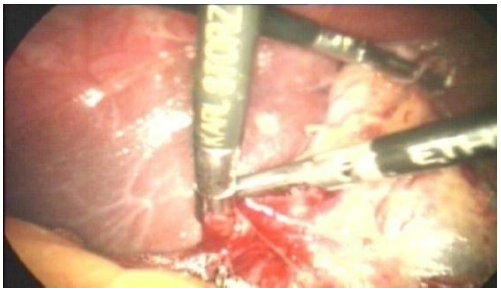
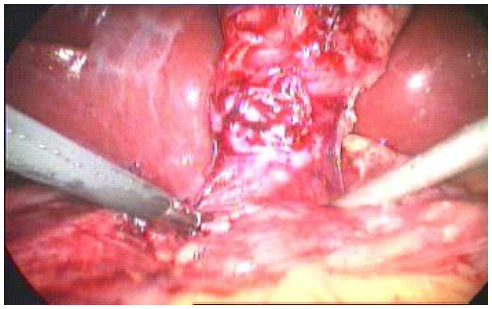


DUO. ADHESIONS



ADHESIONS LEEDING TO BLEEDING

ACUTE CHOLECYSTITIS



ADHESIONS WITH CBD

DISCUSSION

LC was first reported by Mouret in 1987 and was soon accepted as a standard procedure for cholecystectomy for various gallbladder diseases particularly cholelithiasis. However we encounter situations when total cholecystectomy is not feasible or carries risk of bleeding or injury to bile ducts or other vital structures .The difficulties may be due to the severe adhesion of the gallbladder to surrounding organs, fibrosis of the gallbladder bed between the gallbladder and liver, and difficulty in identifying and dissecting structures in Calot's triangle[5]. Open subtotal technique has simplified removal of difficult gall bladder. Open Subtotal cholecystectomy was usually done in such situations without increasing the risk of morbidity and mortality[6]. With increasing experience of laparoscopic surgery laparoscopic subtotal cholecystectomy (LSTC) has become feasible without altering morbidity and mortality. In some respects, the laparoscopic approach may have certain advantages over the open technique[7]. Introduction high resolution HD cameras and better and safe energy sources have made it easier to perform complicated laparoscopic procedures .In 2 cases where we had converted to open; the adhesions were so dense that the final outcome was a sub total cholecystectomy. In case of chronic inflammatory adhesions, further dissection to isolate cystic duct and cystic artery increases the risk of bleeding and injury to bile ducts[8]. However the role of conversion should never be overlooked. In recent reports, conversion

rates during LC ranged from 0 to 9%. The overall rate of conversion in this series was 2.03%, which is comparable with most published data (Table: 2).

Authors	Laparo cholecystectomies	Difficult cases	Conversion to open	LSTC	Open STC
Present Study	590	125	12 (2.03%)	23 (3.9%)	2 (8.7%)
Beldi et al[4]	345	103 (29.9%)	10 (2.9%)	46(13.3%)	9 (19.6%)
Chowbey et al [7]	1680	-	-	56 (3.3%)	2 (3.6%)
Wu Ji et al[14]	3485	-	0.5%	168 (4.8%)	3%
Michalowski et al[15]	340	186 (54.7%)	18 (5.3%)	29 (8.5%)	-

Conversion is not a complication, but a means of preventing more serious problems[9]. Cholecystostomy followed by definitive surgery 3 months latter may be an alternative and is beneficial in acute cholecystitis[10]. However there is no extra advantage of cholecystostomy in chronic inflammatory adhesions. Laparoscopic modified subtotal cholecystectomy may be performed safely as a definitive treatment without increasing the morbidity and mortality

CONCLUSION

LSTC is a relatively simple and safe procedure that allows removal of a difficult gallbladder and reduces the need for open conversion or cholecystostomy in the majority of patients. It is advantageous by having shorter hospital stay, no wound infections or biliary injury.

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