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Laparoscopic Cholecystectomy in Acute Gall Bladder Disease

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Summary:

Laparoscopic cholecystectomy is one of the procedures through which gall bladder can be removed. Acute cholecystitis was considered a contraindication for laparoscopic procedure but with time and experience this shortcoming is now overcome. Here is a study of 32 patients who were selected for laparoscopic cholecystectomy. Among them, 29 patients were operated by laparoscopic method and rest three patients were converted. This study showed the appropriate time for surgery, technical difficulties and the complication of surgery. It may be concluded that laparoscopic cholecystectomy is feasible and beneficial to the patient with acute cholecystitis in its early phase, if necessary support and expertise is available.

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Introduction:

Laparoscopic cholecystectomy has been established as the gold standard for symptomatic gall stone disease. Before the advent of the laparoscopic cholecystectomy, open cholecystectomy was the procedure of choice for gall stone disease[1]. The bulk of available evidence attest to the superiority of laparoscopic cholecystectomy with regard to postoperative discomfort, hospital stays and time taken to return to normal activity[2].

In 1985, Muhe performed the first laparoscopic cholecystectomy in Germany[3]. But his initial report was largely ignored. In 1987, Phillipe Mouret, a French gynaecologist, who is now considered as the pioneer. performed a laparoscopic cholecystectomy and few months later showed a videotape of his technique in Paris[4].

Laparoscopic cholecystectomy is now firmly established as the treatment of choice for patients with symptomatic gall stone diseases[5]. After its inception, uncertainty persisted about the application of laparoscopic techniques in the management of patients with acute cholecystitis but this has slowly evaporated as level of experience within the surgical community has increased and as well as arrangement of operating schedule[2].

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Materials and methods:

From July, 1999 to June, 2000 i.e., for a period of one year, a total number of 32 patients of acute cholecystitis were diagnosed. The patients were selected irrespective of their age and sex. Detailed clinical history was recorded, routine and special investigations like complete blood count, serum bilirubin, alkaline phosphatase, SGPT, HBsAg, blood sugar, serum creatinine, etc. were done. All operations were done by the same surgical team. Any problem during operation and conversion to open procedure with their reason were pointed out. Post-operative course and complications, if any, and overall outcome of the study were recorded. All the patients underwent standard four ports (but some of the patients required additional ports) technique. Most of the patients were operated within 2-7 days of acute attack with a few cases after seven days. Among these, three patients were converted to open cholecystectomy.

All the patients received initial management for acute attack followed by laparoscopic cholecystectomy with preliminary counselling about conversion counselling if necessary.

Results:

All the patients (Fig.-1) presented with pain in the right hypochondrium. Most of them (28 patients) had

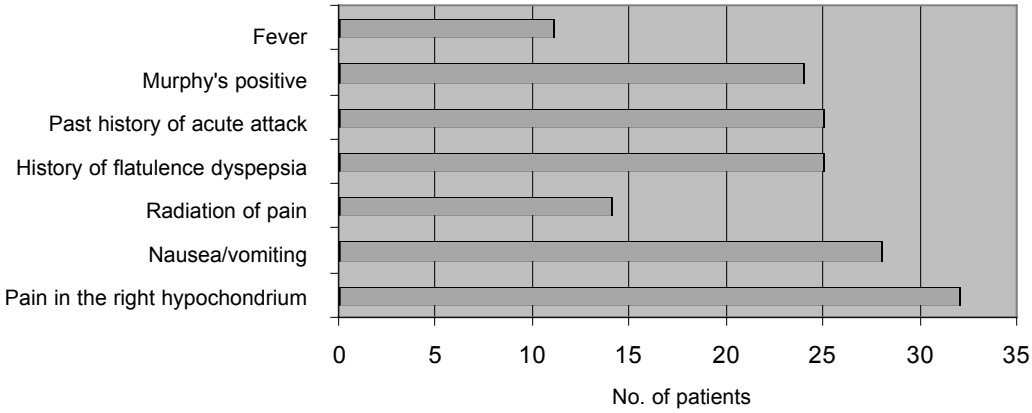

Fig.-1: *Distribution of the patients of acute cholecystitis according to their clinical presentation (N-32).*

nausea/vomiting, with history of flatulence dyspepsia (25 patients) and positive Murphy's sign (24 patients). Fourteen patients showed radiation of pain to right interscapular region. Eleven patients had raised temperature with rigidity and tenderness in right hypochondrium. Past history of acute attack was found in 25 patients (78.12%). No patients gave any past history of jaundice. Ultrasonographic findings (Table-I) showed that all the 32 patients had features of acute cholecystitis i.e. distended tense gallbladder with oedematous wall. In this series, 31 patients had stones in the gall bladder and one patient had only features of acute cholecystitis. Seventeen patients had single stone. None of them had dilated biliary tree or stone in common bile duct. Most of the patients (21 patients, 65.62%) had leucocyte count (Table-II) between 11000-13000/cmm, four (12.50%) had 13000-15000/cmm and rest seven patients had normal leucocyte count.

In most of the patients (27 patients) operation (Table-III) was done within 2-7 days. Only in 5 patients operation was done after seven days with poor result. Three of them needed conversion to open cholecystectomy. Some per operative problem has been encountered (Table-IV). In three patients it was difficult to find plane of dissection. Perforation of the gallbladder during dissection was another problem. Two patients showed short and wide cystic duct. Six patients had excessive oozing from the gall bladder bed.

Table-I

Ultrasonographic (USG) findings of the patients

USG findings	Number of patients	Percentage
Feature of acute cholecystitis without cholelithiasis	01	3.12
Features of acute cholecystitis with cholelithiasis	31	96.88
Acute cholecystitis with dilated CBD or CBD stone	00	00
Total	32	100

CBD = Common bile duct

Table-II

Leucocyte count in patients with acute cholecystitis

Leucocytes count	Number of patients	Percentage
>11000 to 13000/cmm	21	65.62
>7500-9500/cmm	07	28.87
>13000-15000/cmm	04	12.5

Table-III

Time between the onset of acute attack and the surgery (n=32)

Time in days	Number of patients	Percentage
<Three days	19	59.38
>Three days<7 days	08	25.00
> 7 days	05	15.62

Discussion:

Laparoscopic cholecystectomy has been introduced in the era of minimal access surgery as the treatment modality for the management of symptomatic gall bladder diseases. Acute cholecystitis was previously considered to be a contraindication to laparoscopic cholecystectomy. This initial reluctance has slowly evaporated as the level of experience within the surgical community has increased.

In this country, laparoscopic management of gall stone diseases is still mainly confined to the cases of chronic cholecystitis but in acute cholecystitis late laparoscopic cholecystectomy (interval laparoscopic cholecystectomy) is done. In BIRDEM centre laparoscopic cholecystectomy is practised in acute cholecystitis with fairly good result in comparison to open cholecystectomy. The results of this study has statistical value with other published results. Out of 32 cases, one had acalculous variety. In acute cholecystitis, about 95% cases are associated with gallstones and in about 5% they are not[6]. Females were four times more likely to suffer from cholecystitis than the males.

All patients were operated with the history of acute attack but the duration of acute attack just before operation varied. Early laparoscopic operation was done i.e. early operation was rather than interval one was done with consequent reduction in patients anxiety, hospital stay and wastage of health resources.

In this study with the exception of a few, ultrasonographic findings were more or less consistent with the laparoscopic findings. Laparoscopic findings revealed that 12 patients (37.50%) had no adhesion around gall bladder area but 15 patients (46.87%) had mild to moderate and five patients (15.62%) had severe adhesion (which were not mentioned in ultrasonography); three of them were converted to open cholecystectomy after 15-20 minutes of initial laparoscopic try. Twenty-nine patients (90.63%) were found to have impacted stone in the infundibulum where the stone was pushed into the gall bladder or taken out with a distal incision after suction of gall bladder content. Twenty-two patients (68.75%) had distended gallbladder where aspiration was done to facilitate grasping of the gall bladder wall. All patients had mild to severe form of wall thickening due to oedema. No problem was encountered in clipping the cystic duct but some degree of difficulty arose during closure of short and wide variety of cystic duct, and they were ultimately dealt with intracorporeal catgut tie. Three patients had rupture of gall bladder because of fragile wall and were managed by suction, and copious lavage with normal saline and diluted povidone iodine solution, and gallbladder was taken out by putting it in the retrieval bag (improvised by using surgical gloves). Three patients had too big stone that required enlargement of umbilical port during extraction of gall bladder. In six patients-sub-hepatic drain was placed, which persisted for 24-48 hours.

Postoperative complications were also negligible. Only seven patients had some degree of postoperative problems or complications in the form of vomiting (three patients), wound sepsis (two patients) and mild chest infection (two patients).

In this study, the conversion rate was 9%, a much lower incidence compared to the study of Shapiro and Costello who showed a conversion rate of 30% in patients with acute cholecystitis treated by laparoscopic cholecystectomy due to increased wall thickness detected by ultrasonography[7]. There was no biliary leakage in this series, which is consistent with the results of the study where 152 patients underwent laparoscopic cholecystectomy for acute cholecystitis[8]. But there is a reported incidence of bile duct injury in 4% case in another study where 50 patients of acute cholecystitis underwent laparoscopic cholecystectomy[9].

Mean time required for laparoscopic cholecystectomy in this series was 54.54 minutes, which ranged from 45-90 minutes. Patients with severe adhesions required more time to perform the laparoscopic procedure. Duration of operation time varied directly with the duration of acute attack. Earlier the operation from the onset of attacks less the time required for it.

Laparoscopic cholecystectomy is considered as the treatment of choice for patients with acute symptomatic gall bladder disease. Five among 32 patients came after seven days from their onset of attack and three of them underwent conversion to open procedure due to dense adhesion. Therefore, this study suggests that laparoscopic cholecystectomy is

feasible within seven days after the onset of attack and preferably better if it can be done within three days of attack. But adequate training and experience is required to deal with this sort of patients, therefore, it may be suggested that in the early phase of the learning curve, laparoscopic cholecystectomy in acute cholecystitis should be avoided. So, in experienced hands this offers the patients less postoperative pain and disability then open procedure and permits earlier discharge from hospital and rapid return to work. It also offers better scar and less psychological stress[10].

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