Short Communication

Optimal timing of laparoscopic cholecystectomy after endoscopic retrograde cholangiopancreatography

Rasmiranjan Sahoo¹, Debasis Samal^{1*}, A. Pradhan¹, Rima Sultana¹,
Nabakishore Nayak², Rabindra Nath Padhy²

¹Department of Surgery, Institute of Medical Sciences and Sum Hospital, Siksha 'O' Anusandhan University, Kalinga Nagar, Bhubaneswar - 751003, Odisha, India

²Central Research Laboratory, Institute of Medical Sciences and Sum Hospital, Siksha 'O' Anusandhan University, Kalinga Nagar, Bhubaneswar - 751003, Odisha, India

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*Correspondence:

Dr. Debasis Samal,

E-mail: dr.dsamalindia@gmail.com

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ABSTRACT

Background: Nowadays in patients with cholelithiasis with choledocholithiasis, the ideal treatment is endoscopic retrograde cholangiopancreatographic (ERCP) removal of duct stone and laparoscopic cholecystectomy. But when to do and whether we can do it simultaneously or one after another and what interval should be there, that is always controversial. The purpose was an optimal gap for cholecystectomy after ERCP.

Methods: We have done a comparison study in 60 patients within a duration of 2 year who had already done ERCP. Group 1, those patients who had laparoscopic cholecystectomy within 72 hours compared with group 2 who had laparoscopic cholecystectomy after an interval of 6 week. Primary outcome was the conversion rate from lap to open cholecystectomy. Secondary outcome was duration of operation, intra-operative difficulties, postoperative morbidity and hospital stay.

Results: Of 60 consecutive patients 30 were in group I and 30 were in group II. There is no difference in demographics, laboratory or ultrasonographic findings. The hospital stays in group I is significantly shorter than group II and conversion rate; operative time is higher in group II. No statistically significant difference in post-operative morbidity between both groups.

Conclusions: Early laparoscopic cholecystectomy within 72 hr is better than interval (6 week) cholecystectomy after ERCP with shorter hospital stay and less intraoperative difficulties.

Keywords: Choledocholithiasis, Cholecystectomy, ERCP

INTRODUCTION

Symptomatic cholelithiasis is a common gastrointestinal surgical entity having the complication of accumulation of gall stones. Although, therapeutic options are laparoscopic, endoscopic, percutaneous surgery and open traditional technique either through a combination of any of cited treatments or by conducting those in a step wise

sequence to manage gallstones and common bile duct (CBD) stones, there is no clear consensus on the correct strategy. Obviously, endoscopic retrograde cholangiopancreatography (ERCP) remains the preferred approach for assessing CBD stones in patients. Often, a CBD clearance is carried out by ERCP with the endoscopic sphincterotomy (ES), before laparoscopic cholecystectomy (LC) as the preferred strategy.

Less often a physician would recommend watchful waiting for a patient with CBD to get rid of stones and associated complication, such as, biliary colics from dietary changes on fat consumption. At this option, a patient would be asked to wait on an average of 5 to 10 weeks, after ERCP.¹ If symptoms persist further, the physician recommends surgical redressal. In this stage, open cholecystectomy is less preferable than LC, for several reasons, such as, the later is less invasive with eventual lesser chance of infection or hospitalization.² However, an early elective LC is carried out often to prevent any biliary complications with GB stones. Alternately, an ES or emergency open surgery is comparatively difficult as a procedure with the obvious post-surgical complications. Thus, this study was aimed at the critical analysis between LC within 72 hours of obtaining ERCP report and waiting for a decision to LC or open surgery for cholelithiasis and choledocholithiasis. As it is, patient management could be more effective in a single hospitalization, however.

METHODS

A prospective observational cohort study was conducted in this hospital from September 2013 to 2016, for addressing the problem by LC; and patients who underwent LC following ERCP were included. A total of 60 patients were divided into two groups; group I had patients who underwent LC within 72 hours of ERCP early; while patients with elective surgery beyond 6 weeks of the day of ERCP were included in group II. The exclusion criteria were patients undergoing LC along with other laparoscopic intervention in the same setting, LC with CBD exploration, LC in gall bladder carcinoma and patients with cardiovascular or pulmonary disease, coagulopathy, end-stage liver disease and patients, who underwent previous upper abdominal surgeries. Patients with symptomatic gallstones with suspected choledocholithiasis had been evaluated by ERCP by one of the three specialities and CBD was cleared of stones, followed by stent placement routinely. LC was performed using the standard four port technique. Duration of surgery was calculated from the time of insertion of the first trocar till closure of all the port sites. The patients where ERCP is considered after 6 weeks such patients are put on 3 days course of antibiotics prior to discharge.

RESULTS

A total of 60 patients were included who underwent LC following ERCP; they were in the age group of 20-50 (44%). Of them 30 patients underwent LC within 72 hours of ERCP as the group I and the rest 30 patients underwent the surgery beyond 6 weeks, at the dietary regulation as the group II. There was no increase of complications associated with age variation. However, the extent of several complications was higher in the group II (Table 1). Furthermore, omental adhesions and bowel adhesions to the gallbladder wall were noted in 66% patients. This is same in both the groups (Table 1).

In 26 patients, there was difficulty in Calot's triangle dissection of which, 20 belonged to the second group and 6 from the early group. Wide and short cystic duct leading to difficult clipping has been observed in 30 patients. Among them, 66% were in the first group and 33% were in the second group. Accidental/inadvertent injury to the cystic duct or artery was seen in one instance, all in the second group. A total of 25 (40%) patients needed placement of drain due to excessive dissection. In early group, 10 patients needed the drain whereas 50% (15/30) of the patients in the second group needed a drain. In the second group, 33% patients needed conversion to open procedure. There was 1 conversion rate in early group. The mean operative time in the early group was 65 ± 31 min, in the second group was 120 ± 33 min. The mean postoperative hospital stay in the early group was 3 ± 2 days, in the second group was 7 ± 2 days. Surgical site infection was noted in 8 cases in the second group reason may be secondary to bile contamination as compared to 2 in first group (Table 1).

Table 1: Comparison of selected surgical variables and postoperative outcomes among patients of two groups of LC.

Variables	Group I	Group II
Intraoperative adhesions	3 (10%)	3 (10%)
Difficult calots dissection	6 (20%)	20 (66%)
Wide cystic duct	20 (66%)	10 (33%)
Intraop injury to cystic duct and artery	0	1 (3%)
Open conversion	1 (3%)	10 (33%)
Need for drain insertion	10 (33%)	15 (50%)
Mean surgery time	90 min	120 min
Hospital stay	3-5days	7-8 days
Surgical site infections	2	8

Group I = patients who underwent LC within 72 hours of ERCP; Group II = patients with elective surgery beyond 6 weeks of the day of ERCP.

DISCUSSION

After visualization of the common bile and pancreatic duct by the endoscopy, therapeutic endoscopic sphincterotomy was developed.³ Herein, ERCP with ES and stent placement were followed by LC is routinely performed, whenever choledocholithiasis is suspected, as followed in a previous report, which does not recommend a 'wait and watch' policy for choledocholithiasis; 47% patients, managed conservatively, developed at least one recurrent biliary complication and only 37% needed cholecystectomy at a later date with diet.⁴ Alternately, LC was advocated to follow ERCP in addressing choledocholithiasis to avoid the lingering morbidity and even mortality thereafter.^{5,6} Concomitantly, recurrent biliary complications in the majority of cases could be prevented minimised the postoperative hospital stay.⁷ Earlier laparoscopic cholecystectomy was reported to improve outcomes after endoscopic sphincterotomy for

choledochocystolithiasis.⁸⁻¹⁰ It is cost effective in developing countries.

In this study, the chance of encountering adhesions was noted to significantly increase with age. Increasing age is associated with an increased probability of multiple attacks of cholecystitis and thereby increased incidence of fibrosis and adhesions in the Calot's triangle. For example, patients of age 50 years and more were associated with the same described difficulties, 2 for the obvious reason that the risk of facing a frozen Calot's is ample at longer the intervals between ERCP and LC increase. Herein, the mean operative time in the early group was 65±31 min, in the second group was 120±33 min. the mean operative time in the group I was shorter than that of the group II, corroborating to another study.¹¹

CONCLUSION

Moreover, the operating time was longer in patients who underwent cholecystectomy after 6 weeks, possibly due to scarring and fibrosis of the biliary tree and Calot's triangle, which may promote an error during dissection of the junction among cystic duct, common hepatic duct and CBD. This study shows, a higher degree of complications was noted with group II.

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