



Laparoscopic Cholecystectomy in Acute Cholecystitis: To Wait Or Operate?

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ABSTRACT

Acute cholecystitis is a common problem encountered by the general surgeon and cholecystectomy more so laparoscopic cholecystectomy has been established as the gold standard for the treatment of cholecystitis. While the need for surgery as a definite treatment in this condition has been established, the timing of surgery following an attack of cholecystitis continues to be a debated question. 168 laparoscopic cholecystectomies that were done either immediately after the first attack of acute cholecystitis or after waiting for a period of 6-8 weeks post the attack were evaluated for the duration of surgery, post operative bile leak, any organ injury, conversion to open surgery and duration of hospital stay. 76 patients underwent laparoscopic cholecystectomy within 24-48 hours of onset of the acute episode (group A) while 92 patients were operated after 6-8 weeks of the attack (group B).

The duration of surgery was significantly shorter in group B, the hospital stay was less in group A while there was no significant difference between the two groups in the other parameters evaluated. Laparoscopic cholecystectomy may be safely performed either immediately post an attack of cholecystitis or after waiting for a gap of 6-8 weeks.

KEYWORDS : Laparoscopic cholecystectomy. Acute cholecystitis. When to operate. Conversion to open cholecystectomy. Biliary leak

Introduction

Acute cholecystitis is a common cause of upper abdominal pain. Laparoscopic cholecystectomy has been accepted as the procedure of choice for the treatment of symptomatic gall stones and chronic cholecystitis (1,2). While there remains little doubt about its use, the ideal time to perform a laparoscopic cholecystectomy after an attack of acute cholecystitis remains a debated topic. Acute cholecystitis was traditionally treated with antibiotics and supportive treatment and cholecystectomy was performed after six weeks of the acute episode (3). The basis of waiting was attributed to the normal anatomy being distorted by the acute inflammation. The potential hazard of severe complications, if surgery is performed in an area of distorted anatomy caused by acute inflammation, is the major concern (4,5). Also if difficult dissection and threat of organ injury in an area of distorted anatomy warrants a significant need for conversion to open surgery, the benefit of the minimally invasive approach would be lost. However recently, laparoscopic cholecystectomy is considered to be the standard of care if the patient is seen within 48h of the attack of acute cholecystitis because adhesions would not have developed so early after the onset of inflammation (2). When patients are seen after 48h from the onset of acute cholecystitis, surgeons however prefer to delay cholecystectomy and prefer conservative treatment followed by an interval cholecystectomy (4).

Aim: To compare the safety and efficacy of laparoscopic cholecystectomy in acute cholecystitis, when done early or after a period of 6-8 weeks from the acute episode.

Materials and Methods : Retrospective as well as prospective data was collected from 168 laparoscopic cholecystectomies performed at the Dept of Surgery, Smt Kashibai Navale Medical College and General Hospital, Pune between October 2013 and November 2015. All patients with clinically detected and sonologically proven acute cholecystitis at the time of presentation were included. For the cases included prospectively, if the attack was not the first, the patient was generally conserved and posted for surgery after a period of 6-8 weeks. Patients having their first attack of cholecystitis were posted for surgery within 48 hours of presentation. Laparoscopic cholecystectomies done for chronic cholecystitis or when coupled with another procedure were excluded. Also excluded were cases where cholecystectomy was a part of another major surgery or patients with associated choledocholithiasis. The patients were categorized into two groups. Those that underwent laparoscopic cholecystectomy within 24- 48 hours of the first attack (group A, n=76) and those that

were operated after 6-8 weeks of the attack (group B, n=92). The parameters of comparison included, duration of surgery, post operative bile leak, any organ injury, conversion to open surgery and duration of hospital stay.

Surgical technique: Standard four port technique for laparoscopic cholecystectomy was used. 10 mm umbilical (telescope) and epigastric (main dissection) ports and 5 mm ports in the right hypochondrium (surgeons left hand instrument) and right iliac fossa (gall bladder retraction). The cystohepatic triangle was dissected to identify the cystic duct and artery. The cystic artery was first clipped and cauterized following which the cystic duct was divided between clips. The gall bladder was dissected off its fossa using a hook cautery. The gall bladder was extracted through the epigastric port. Sub hepatic drainage using a 18Fr Ryle's tube was used in all cases.

Results

Table 1: Operative findings

| | Group A | Group B | χ^2 Value | df | P value |
|-----------------------------|---------|---------|----------------|----|---------|
| Empyema gall bladder | 23 | 17 | 2.57 | 1 | > 0.05 |
| Inflamed/ edematous GB | 48 | 21 | 26.3 | 1 | < 0.05 |
| Adhesions in GB fossa | 59 | 64 | 1.0 | 1 | >0.05 |
| Adhesions with other organs | 11 | 19 | 0.7 | 1 | >0.05 |
| Conversion to open surgery | 4 | 7 | 0.089 | 1 | >0.05 |

Table 2 : Comparison of mean duration of surgery and hospital stay in both groups

| | Group A (n=76) | Group B (n=92) | t Value | P value |
|---------------------------------------|----------------|----------------|---------|---------|
| Mean duration of surgery (min) | 64.5 ± 14.78 | 44.6 ± 11.65 | 9.78 | <0.05 |
| Mean Duration of hospital stay (days) | 4.1 ± 0.42 | 4.4 ± 0.68 | 3.7 | <0.05 |

Table 3: Post-operative findings

| | Group A (n=76) | Group B (n=92) | χ^2 Value | df | P value |
|--------------------------|-------------------|-------------------|-------------------|----|---------|
| Post-operative bile leak | 2 | 3 | 0.047 | 1 | >0.05 |
| Any organ injury | 0 | 0 | 0.33 | 1 | >0.05 |

The data was entered in MS-Excel sheet and analyzed using Epi Info (version 7.1.3.0) software. Chi square test & t test were used. p value less than 0.05 was considered as significant.

There was significant difference in the mean duration of surgery between the two groups with group B having significantly shorter operating time ($p < 0.05$). The mean duration of hospital stay was less in the early group. There was no significant difference in the conversion rates to open surgery, post operative bile leak, any organ injury between the two groups ($p > 0.05$). Significantly more cases of inflamed and edematous gall bladder were encountered in group A.

Discussion

In our study, the mean duration of surgery was longer in the early group (group A) as compared to the late group (group B). This could probably be attributed to more dissection needed due to more adhesions, slower dissection owing to more cases of inflamed, edematous gall bladder in the early group and encountering more cases of empyema gall bladder in group A which needed prior decompression by aspiration to facilitate easy dissection. There was no difference in the conversion rates to open surgery between either groups. Lo et al⁽⁶⁾ compared early (presentation within 120 hours of onset of symptoms) with interval cholecystectomy (surgery 6 weeks after the onset of acute symptoms) and reported a conversion rate of 141.5+55.2 min versus 108.8+47.4 min and post operative stay of 4.6+3.2 days versus 2.5+1.4 days between the two groups. In a randomized trial of early versus delayed laparoscopic cholecystectomy for acute cholecystitis by Lai PB et al⁽⁴⁾, (group 1- laparoscopic cholecystectomy within 24 hrs of randomization; n=53), (group 2- conservative treatment followed by laparoscopic cholecystectomy after 6-8 weeks; n=51), there was no difference in the conversion rates, post operative analgesic requirement or complications between either groups, while the early group had a longer operating time and shorter hospital stay. In our study there was no significant difference in the post operative bile leak or any organ injury between the two groups. The mean duration of hospital stay in our study was lesser for the early group. A meta analysis conducted by Wu XD et al⁽⁷⁾ comparing early (ELC) versus delayed (DLC) laparoscopic cholecystectomy in which sixteen studies reporting on 15 RCTs comprising 1625 patients were included found that for patients with acute cholecystitis, ELC appears as safe and effective as DLC. ELC might be associated with lower hospital costs, fewer work days lost, and greater patient satisfaction. Thus laparoscopic cholecystectomy can be safely performed at any time following an attack of acute cholecystitis. Also patients need not wait for upto or more than 6 weeks for surgery, risking another attack of cholecystitis.

Limitations: The patients were not randomized into either groups as retrospective as well as prospective data was used. This study could not describe the type of adhesions, whether flimsy or adherent or their difficulty of dissection.

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