Original Article

To Observe the Outcomes of Early versus Delayed Laparoscopic Cholecystectomy in Patients Presented with Acute Cholecystitis

Samina Karim[1], Ahmad Shah[2] and Mohammad Ishaq Durani[2]

ABSTRACT

Objective: To compare the outcomes between early versus delayed laparoscopic cholecystectomy in patients with acute cholecystitis.

Study Design: Observational study

Place and Duration of Study: This study was conducted at the Department of Surgery, Unit-1, Sandeman Provincial Civil Hospital, Quetta from 1st January 2017 to 31st December 2018.

Materials and Methods: One hundred and forty patients of both genders presented with acute cholecystitis were included in this study. Patient ages were ranging from 15 to 60 years. Patients were divided into two groups Group I received early cholecystectomy within <6 days after diagnosis and Group II received delayed cholecystectomy after 4 to 6 weeks of diagnosis. Outcomes were recorded such as operative and post operative complications, conversion to open surgery, hospital stay and return to routine activity.

Results: Ninety eight (70%) patients were females while 42 (30%) were males. 52 (37.14%) patients were ages between 15 to 30 years, 58 (41.43%) had ages 31 to 45 years and 30 (21.43%) patients were ages 46 to 60 years. Conversion to open cholecystectomy, preoperative complications and post-operative complications, length of hospital stay were significantly less in early cholecystectomy than delayed cholecystectomy p-value <0.05.

Conclusion: Early laparoscopic cholecystectomy shows better results as compared to delayed laparoscopic cholecystectomy.

Key Words: Acute cholecystitis, Early laparoscopic cholecystectomy, Delayed cholecystectomy, Post-operative complications

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INTRODUCTION

A variety of treatments have been offered from time to time for gall bladder (GB) diseases. Cholecystectomy has stayed as one of the best and most accepted treatment modalities for GB diseases. Every year, about 500,000 people all over the world have to remove their gall bladders. Acute cholecystitis was traditionally treated with antibiotics and supportive treatment and cholecystectomy was performed after 6 weeks of the acute episode.[1-4] The potential hazard of severe complications, if surgery is performed in an area of distorted anatomy caused by acute inflammation was the major concern.[5]

[1.] Department of General Surgery, BMC, Quetta.
[2.] Department of Surgery, Sandeman Provincial Civil Hospital Quetta.

Correspondence: Dr. Samina Karim, Assistant Professor of General Surgery, Bolan Medical College Quetta.
Contact No: 03458319813
Email: samenakarim05@gmail.com

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Till date laparoscopic cholecystectomy is considered the 'gold standard' in the treatment of cholelithiasis/ cholecystitis and highlights all theadvantages of laparoscopy as minimally invasive surgical aid.[6] Initially laparoscopic cholecystectomy used to be performed in selected cases, but with advances in instrumentation, better visualisation because of new generation cameras, optics, increasing knowledge about the anatomy of the hepato-biliary tree and the surrounding structures with improved surgical skills.[7,8] Surgeons started performing laparoscopic cholecystectomy even in acute cholecystitis, which was initially considered a relative contraindication. After 48 hours it is now the procedure of choice for patient presenting with acute cholecystitis unless it is contraindicated for technical reason or safety.[9,10] The present study was undertaken to compare the outcome and postoperative complications of early versus delayed laparoscopic cholecystectomy in acute cholecystitis.

MATERIALS AND METHODS

This observational study was conducted at Department of Surgery, Unit-1, Sandeman Provincial Civil Hospital, Quetta from 1st January 2017 to 31st

December 2018. A total OF 140 of both genders presented with acute cholecystitis were included in this study. Patient ages were ranging from 15 to 60 years. Patient's detailed medical history including age, sex were examined after taking informed consent from all the patients. Patients with coagulopathy, severe chronic obstructive pulmonary disease, end stage liver disease, congestive cardiac failure, obstructive jaundice and pregnant women were excluded from this prospective, observational study. All the patients received laparoscopic cholecystectomy. Patients were equally divided into two groups Group I received early cholecystectomy within less than 6 days after diagnosis and Group II received delayed cholecystectomy after 5 to 7 days up to 6 weeks of diagnosis. Peroperative and post-operative complications, hospital stay, duration of surgery, conversion to open surgery and back to routine activity were examined and compare these variables between early and delayed cholecystectomy. All the statistical data was analyzed by SPSS 20.0. P-value <0.05 was considered as significant.

RESULTS

There were 98 (70%) female patients in which 50 patients in Group I and 48 patients in Group II while 42 (30%) were males in which 20 in Group I and 22 in Group II. 52 (37.14%) (28 in Group I, 24 in Group II) patients were ages between 15 to 30 years, 58 (41.43%) (28 in Group I, 30 in Group II) had ages 31 to 45 years and 30 (21.43%) (14 in Group I, 16 in Group II) patients were ages 46 to 60 years (Table 1)

Mean operative time in Group I was 51.5±12.4 minutes while in Group II it was 64.7±11.6 minutes. Per-operative complications such as haemorrhage, bile duct trauma, conversion to open surgery in Group I and II was noted in 4 and 10 patients, 0 and 1 patient, 1 and 6 patients respectively. Post-operative complications such as surgical site infection, nausea vomiting, bile leakage were recorded and compared in both groups as 2 in Group I and 16 in Group II, 4 in Group I and 8 in Group II, 1 and 5 patients respectively. The mean hospital stay in Group I was 4.26±2.3 and in Group II it was 7.69±2.4 days. The mean duration of back to routine activity in Group I was 12.42±4.68 days and in Group II it was 16.34±5.62 days (Table 2).

Table No.1: Gender and age wise distribution in both groups

Variable	Group I	Group II	Total (%)
Gender			
Female	50	48	98 (70%)
Male	20	22	42 (30%)
Age (years)			
15 – 30	28	24	52 (37.14%)
31 – 45	28	30	58 (41.43%)
46 – 60	14	16	30 (21.43%)

P-value >0.05

Table No. 2: Comparison of outcomes in both groups (N=140)

Variable	Group I	Group II	P value
Mean operative time (min)	51.5±12.4	64.7±11.6	0.002
Per-operative complication			
Hemorrhage	4 (5.71%)	10 (14.29%0	0.04
Bile duct injury	-	1 (1.43%)	0.01
Conversion to open	1 (1.43%)	6 (8.57%)	0.03
Post-operative complications			
SSI	2 (2.86%)	16 (22.86%)	0.007
Nausea/vomiting	4 (5.71%)	8 (11.43%)	0.004
Bile leakage	1 (1.43%)	5 (7.14%)	0.007
Mean hospital stay (days)	4.26±2.3	7.69±2.4	0.005
Mean time to routine activity	12.42±4.68	16.34±5.62	0.002

DISCUSSION

In present study, mean operative time in Group I was 51.5±12.4 minutes while in Group II it was 64.7±11.6 minutes. A study conducted by Memon et al[11] reported that the mean operative time was 53.8±11.2 minute in early cholecystectomy group and 62.68±12.38 minutes in delayed group. In our study we found that per-operative complications such as hemorrhage found in 5.71% in Group I and 14.29% patients in Group II. Rate of conversion to open surgery was high in delayed cholecystectomy group than early cholecystectomy group 8.57% and 1.43%. These results shows similarity to some other studies in which conversion to open surgery rate was high in delayed cholecystectomy as compared to early.[12,13] In our study post-operative complications such as surgical site infection, nausea vomiting, bile leakage were recorded and compare in both groups and observed early cholecystectomy had less prevalence of post-operative complications as compared to delayed cholecystectomy 10% and above 30%. These results shows similarity to other studies conducted regarding acute cholecystitis and reported that rate of post-operative complications were high in delay cholecystectomy as compared to early cholecystectomy group.[14,15] In this study we observed that the mean hospital stay in Group I was 4.26±2.3 and in Group II it was 7.69±2.4 days. The mean duration of back to routine activity in Group I was 12.42±4.68 days and in Group II it was 16.34±5.62 days. These results were similar to some other studies.[16,17] Overall we found that patients who received early cholecystectomy had less post-operative complication than the patients

received delayed cholecystectomy. We found no mortality during the study period and at follow-up.

CONCLUSION

Acute cholecystitis is the most common disorder and laparoscopic cholecystectomy is the most common performing procedure in surgical department. It is concluded from this study that patients who received early laparoscopic cholecystectomy had less complication rate as compared to delayed laparoscopic cholecystectomy. Early laparoscopic cholecystectome was safe and cost effective procedure with less hospital stay and less time to back to routine activity.

Author's Contribution:

Concept & Design of Study:	Samina Karim
Drafting:	Ahmad Shah
Data Analysis:	Mohammad Ishaq Durani
Revisiting Critically:	Samina Karim, Ahmad Shah
Final Approval of version:	Samina Karim

Conflict of Interest: The study has no conflict of interest to declare by any author.

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