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Timing of cholecystectomy in biliary pancreatitis treatment

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ABSTRACT

Objective: Gallstone pancreatitis constitutes 40% of all cases with pancreatitis while it constitutes up to 90% of cases with acute pancreatitis. The treatment modality in this patient population is still controversial. In this study, we aimed to compare the results of early and late cholecystectomy for patients with biliary pancreatitis.

Material and Methods: Patients treated with a diagnosis of acute biliary pancreatitis in our clinics between January 2000 and December 2011 were retrospectively reviewed. Patients were divided into two groups: Group A, patients who underwent cholecystectomy during the first pancreatitis attack, Group B, patients who underwent an interval cholecystectomy at least 8 weeks after the first pancreatitis episode. The demographic characteristics, clinical symptoms, number of episodes, length of hospital stay, morbidity and mortality data were recorded. All data were evaluated with Statistical Package for the Social Sciences (SPSS) 13.0 for windows and $p < 0.05$ was considered as statistically significant.

Results: During the last 12 years, a total of 91 patients with surgical treatment for acute biliary pancreatitis were included into the study. There were 62 female and 29 male patients, with a mean age of 57.9±14.6 years (range: 21-89). A concomitant acute cholecystitis was present in 46.2% of the patients. Group A and B included 48 and 43 patients, respectively. The length of hospital stay was significantly higher in group B (9.4 vs. 6.8 days) ($p<0,05$). More than half of the patients in Group B were readmitted to the hospital for various reasons. No significant difference was observed between the two groups, one patient died due to heart failure in the postoperative period in group B.

Conclusion: In-hospital cholecystectomy after remission of acute pancreatitis is feasible. It will not only result in lower recurrence and complication rates but also shorten length of hospital stay. We recommend performing cholecystectomy during the course of the first episode in patients with acute pancreatitis.

Key Words: Biliary pancreatitis, surgical treatment, cholecystectomy

INTRODUCTION

Gallstone pancreatitis constitutes 35 to 40% of patients with acute pancreatitis worldwide, while it is the most frequent reason in our country (1-4). The pathophysiological mechanism is thought to be obstruction of the ampulla of Vater with migrated stones. The initial treatment may be either conservative or invasive. Indeed, due to high recurrence rates (29-63%) in untreated patients, conventional (5-7), or recently laparoscopic surgery (8-10) is recommended. Nevertheless, the timing of cholecystectomy in patients with biliary pancreatitis is still controversial.

The purpose of this study was to compare early cholecystectomy that is performed during the first episode of acute pancreatitis with interval (late) cholecystectomy, in order to evaluate their effects on mortality and morbidity.

MATERIAL AND METHODS

Patients treated with a diagnosis of acute biliary pancreatitis between January 2000 and December 2011 in Şişli Hamidiye Etfal Training and Research Hospital, General Surgery Clinics were retrospectively reviewed. Patients were divided into two groups according to the treatment method. Group A included patients who underwent early cholecystectomy during the first pancreatitis attack, and Group B was defined as patients who received medical treatment during their first episode and had an elective cholecystectomy (interval cholecystectomy) at least 8 weeks later. Demographic variables, clinical findings, the number of episodes, length of hospital stay, morbidity, and mortality were evaluated.

Diagnosis of acute biliary pancreatitis was based on (1) acute abdominal pain and tenderness, (2) amylase and lipase levels increased up to 3 times the normal limit, (3) detection of calculi in the biliary tract on ultrasonography, (4) exclusion of alcohol, familial hyperlipidemia and other pancreatitis etiology

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reasons. Detection of increased gallbladder wall thickness or presence of pericholecystic fluid in the preoperative imaging tests were accepted as concomitant acute cholecystitis.

Disease severity was assessed by the Ranson score. The mild and moderate patients were classified as ≤3 (11, 12). Clinical improvement was defined as normalization of serum amylase, lipase, and liver function tests (if found to be initially elevated) and regression of abdominal pain.

Statistical Analysis

Statistical Package for Social Sciences for (SPSS) for Windows 13.0 software was used for analysis. Descriptive statistical methods (mean, standard deviation, frequency) as well as Student's t-test were used for comparison between groups that show a normal distribution of quantitative parameters. Categorical data were compared with a contingency table and either Fisher's exact test or chi-square tests were applied. Results were evaluated at 95% confidence interval and significance set at $p<0.05$.

RESULTS

During the two -year period a total of 91 patients (29 male , 62 female) were treated for acute pancreatitis attack. The mean age of patients was 57.9 ± 14.6 years (range = 21-89 years) (Table 1). Group A included 48 patients (16 M / 32 F), and Group B included 43 patients (13M / 30F). Forty-two (46.2%) patients also showed signs of cholecystitis. Sixteen patients in Group A were treated by laparoscopic cholecystectomy, it was converted to open laparoscopy in five patients and the remaining underwent open cholecystectomy. In group B, 24 patients were re-admitted to the hospital for various reasons (16 patients with recurrent pancreatitis, 8 patients with cholecystitis). The surgical operations in this group were elective laparoscopic operations : 32, open surgery: 7, and conversion in 4 patients. Length of hospital stay was significantly higher in Group B as compared to Group A (9.4 to 6.8 days respectively, $p < 0.05$). Complications included atelectasis (n=3), and wound infection (n=3) in Group A, and atelectasis (n=2), and wound infection (n=5) in Group B. There were no significant differences between the two groups in terms of morbidity rates. One patient in Group B was lost due to heart failure that developed in the postoperative period.

Table 1. Demographic data of patients and follow-up period

	Group A (n=48)	Group B (n=43)	p value
Gender (M/F)	16/32	13/30	0,821
Mean age±SD	57.6±14.3	58.2±14.7	0.756
Ranson score (mean; (min-max))	3.1±0.9 (0-8 point)	3.3±1.1 (0-7 point)	0.535
Length of hospital stay (mean days, (min-max))	6.8±SD (4-12)	9.4±SD (5-31)	0,023
Re-admittance (n, %)	--	24 (55,8)*	<0.01
Morbidity, n; (%)	6 (12.5%)	7 (16.2%)	0.155
Mortality, n; (%)	--	1 (2.3%)	0.472

*Underlying reason: Recurrent pancreatitis: 16 patients, A.cholecystitis: 8 patients

DISCUSSION

Early cholecystectomy, especially laparoscopic, is recently proposed in patients with biliary pancreatitis, but conservative treatment including fluid replacement therapy still prevails (13, 14). There is no consensus regarding the timing of surgical treatment and existing guidelines differ on this subject (2, 15-19). In their study including delayed cholecystectomy patients, Ito et al. (20) observed an increase in the frequency of problems associated with gallstones. More than 1/3 of these events occur especially in the first two weeks following the first episode.

The utilization of ERCP in the management of these patients depends on every clinic's own experience and facilities, as well as the guidelines of the region, if present (15, 19, 21, 22). On the other hand, some studies advocate that endoscopic sphincterotomy does not contribute to regression of these events (20). Clayton et al. (23) did not detect a difference between patients who underwent cholecystectomy after ERCP and patients who underwent intraoperative common bile duct exploration during cholecystectomy. In the current study, cases with suspected gallstones in the common bile duct had common bile duct assessment with magnetic resonance imaging and surgical or endoscopic procedures were performed afterwards; thus, patients with cholangitis and who underwent ERCP were excluded from the study.

If gallstones are left untreated, biliary pancreatitis recurrence rate is reported as 32-61% (24). Morbidity and recurrence rates are lower in patients who were operated during the early period (25, 26). Regardless of laboratory findings and pain status, laparoscopic cholecystectomy can be safely performed in patients with gallstone pancreatitis within the first 48 hours (27). Ayten et al. (4) performed laparoscopic cholecystectomy within the first 48 hours in approximately half of their patients with acute pancreatitis of biliary etiology. In addition to gallstone-related recurrent events, significant changes were observed in length of hospital stay. Our study also confirms the shorter length of hospital stay.

The retrospective nature and inclusion of small number of cases are limitations of this study. Again, in this study, only data related to mild and moderate cases of pancreatitis have been submitted, severe necrotizing pancreatitis cases were not included. Thus, it should be taken into consideration that patients who underwent ERCP and necrosectomy and / or drainage in emergency surgery were excluded from the study.

Study Limitation

Patients with acute pancreatitis but only receiving medical therapy (patients who were not operated), patients with emergency palliative interventions [ERCP, laparotomy, ne-

crosectomy (severe necrotizing pancreatitis), drainage etc.)], those with chronic pancreatitis and a history of alcohol abuse were excluded from the study.

CONCLUSION

Although any significant difference in terms of morbidity rates was not detected, re-admission due to gallstone-related causes was significantly higher in patients with interval cholecystectomy. A significant reduction in length of hospital stay was observed in patients who underwent surgery during their first admission. We believe patients with pancreatitis related to biliary causes would benefit from cholecystectomy during their first episode, without significant morbidity.

It was concluded that cholecystectomy can be safely performed after regression of acute pancreatitis, it protects the patient from possible future episodes of acute pancreatitis and from the complications due to these episodes, it decreases the length of hospital stay. We recommend performing cholecystectomy during the first episode in patients with acute pancreatitis.

Ethics Committee Approval: Ethics comitee approval was not needed, as the study was retrospective.

Informed Consent: Informed patient consent form including their treatment protocol was taken from all patients included in this study.

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