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Araştırma/Research

IS LAPAROSCOPIC CHOLECYSTECTOMY SAFE FOR ACUTE CHOLECYSTITIS?

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ABSTRACT

PURPOSE: Laparoscopic cholecystectomy has become the best treatment method for the patients with symptomatic gallstones. However, "the gold standard" treatment method is still not clear for patients with acute cholecystitis. The aim of our study is to examine the results of early cholecystectomy applied to patients with acute cholecystitis together with the literature review.

METHODS: 106 patients with acute cholecystitis who underwent early laparoscopic cholecystectomy were retrospectively studied between September 2014 and September 2017.

FINDINGS: The total number of the patients was 106, 71 of which were female and 35 of which were male. The average age of the patients was 49.5 (16-83). Laparoscopic cholecystectomy was successfully performed in 92 of 106 acute cholecystitis cases whereas 14 patients underwent open surgery. The average duration of the surgery was determined to be 57.5 minutes. Drains were placed in the subhepatic region at 56 patients (53%). The numbers of the patients with gallbladder perforation, empyema of the gallbladder, and pericholecystic fluid were 9 (8%), 19 (18%), and 3 (3%) respectively. 11 patients (10%) developed postoperative complication.

RESULT: Surgical treatment has come to forefront for the patients with early acute cholecystitis. Considering both the duration of the operation and postoperative morbidity and mortality rates, laparoscopic cholecystectomy has still been the effective treatment method for early acute cholecystitis.

Keywords: Laparoscopy, cholecystitis, cholelithiasis,

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Akut Kolesistitte Laparoskopik Kolesistektomi Güvenli mi?

ÖZET

AMAÇ: Semptomatik safra kesesi taşı olan hastalarda laparoskopik kolesistektomi en iyi tedavi yöntemi haline gelmiştir. Fakat akut kolesistitli hastalarda hala altın standart tedavi yöntemi net değildir. Çalışmamızın amacı, akut kolesistitli hastalara uygulanan erken kolesistektominin sonuçlarını literatür eşliğinde irdelemek olacaktır.

YÖNTEMLER: Eylül 2014 ile Eylül 2017 tarihleri arasında akut kolesistit tanısı alarak erken laparoskopik kolesistektomi uygulanan 106 hasta retrospektif olarak incelendi.

BULGULAR: Hasta sayısı 71 kadın ve 35 erkek olmak üzeri toplam 106 hastadan oluşup yaş ortalaması 49.5 (16-83) yıl idi. 106 akut kolesistitli vakanın 92'inde başarılı laparoskopik kolesistektomi gerçekleştirildi, 14 hastada açık ameliyatla devam edildi. Ameliyat süresi ortalama 57.5 dakika oldu. 56 hastaya (%53) subhepatik alana dren konuldu. 9 hastada (% 8) safra kesesi perforasyonu, 19 hastada (% 18) safra kesesi ampiyemi, 3 hastada (% 3) perikolesistik sıvı vardı. Onbir hastada (%10) postoperatif komplikasyon gelişti.

SONUÇ: Erken dönem akut kolesistitli hastaların tedavisinde cerrahi planlamak düşüncesi ön plana çıkmaktadır. Gerek operasyon süresi ve gerekse postoperatif morbidite ve mortalite oranları ile erken akut kolesistitte laparoskopik kolesistektomi etkin bir tedavi şekli olmaya devam etmektedir.

Anahtar Kelimeler: Laparaskopi, kolesistit, kolelitiazis,

INTRODUCTION

Laparoscopic cholecystectomy is the gold standard method for the treatment of symptomatic gallstones treatment (1.2). In line with the developments in medicine and medical technology, it has also been successfully applied to the patients with acute cholecystitis in many healthcare centers (3).

Today, although laparoscopic cholecystectomy is proposed for the acute cholecystitis cases in the first 72 hours, there are still some schools that consider early surgery in acute cases to be not safe (4,5). One of the major reasons for this idea may be the surgeons' persistence to finish the operation laparoscopically. Therefore, the transition to open surgery should not be considered a failure either by the doctor or by the patient and his/her relatives.

Our aim in this study is to present the laparoscopic cholecystectomy applied for acute cholecystitis in our clinic together with the other studies in the literature.

MATERIALS AND METHODS

The patients who were treated for acute cholecystitis between September 2014 and September 2017 in our clinic were retrospectively assessed. 140 patients were determined to be treated in this period and 106 of them were found to undergo laparoscopic cholecystectomy at the early phase. We carried out our study on this 106 patients who were operated.

The patients were diagnosed with acute cholecystitis by using clinical, physical examination, and radiological findings. [pain in the right upper quadrant and/or epigastric region and temperature >37.8 °C and/or leukocytosis > 10 x 10^9/l (normal, < 10 x 10^9/l), radiological findings (increase in the gallbladder wall thickness, hydropic gallbladder, gallstone, presence of ultrasonographic Murphy signs and pericholecystic fluid collection)].

Patients with concurrent pancreatitis and choledocholithiasis were excluded from the study. The operative intervention was defined as the admission to the hospital at the onset of the acute symptoms and the cholecystectomy operation before discharge.

All preoperative, intraoperative, and postoperative data were collected in the standard forms. Later exploration findings, postoperative morbidity, hospital stay, duration of the operation, the histological features of the gallbladder, the rate of transition to open, and the ultrasound findings were analyzed.

The operation was performed as a standard four-port laparoscopic cholecystectomy under general anesthesia with endotracheal intubation by the general surgeon on duty. Transition to open procedure was performed by using right subcostal incision. The patients without any additional problem started phase 1 diet after 8 postoperative hours.

FINDINGS

There were 106 patients in the patient population and 71 of them were female and 35 of them were male. The average age was 49.5 (16-83) years. The ultrasonographic findings of patients and the operation techniques are shown in Table 1.

Table 1. Findings of the patients (n = 106)

Findings	N	%
Abdominal Pain	100	**94**
Examination Finding	**86**	**81**
Laboratory Finding	82	**77**
Radiological Finding	103	**97**
Pathological Finding	104	**98**
Presence of Gallstones in USG	106	**100**
Presence of Pericholecystic Fluid in USG	33	**31**
Presence of Perforation at Exploration	2	**2**
Using Drains	56	**53**
Rate of Transition to Open Surgery	14	**13**
Complication Rates	**11**	**10**

100 patients (94%) presented with abdominal pain, 56 patients (53%) with fever and 81 patients (76%) had right upper quadrant tenderness. 82 patients (77%) were observed to have an increase in the white blood cell. 92 patients (87%) underwent laparoscopic cholecystectomy successfully. Transition to open was required at 14 patients (13%). Transition to open was required for 9 patients (63%) due to failure in revealing the anatomy and intense inflammation with adhesions, for 3 patients (22%) with gangrene or perforated gallbladder, and for 2 patients (15%) with uncontrolled bleeding (**Figure 1**). Patients over 65 years old were determined to be independently associated with a high conversion rate of gallbladder anatomic variations, non-palpable gallbladder, and acute gangrenous cholecystitis.

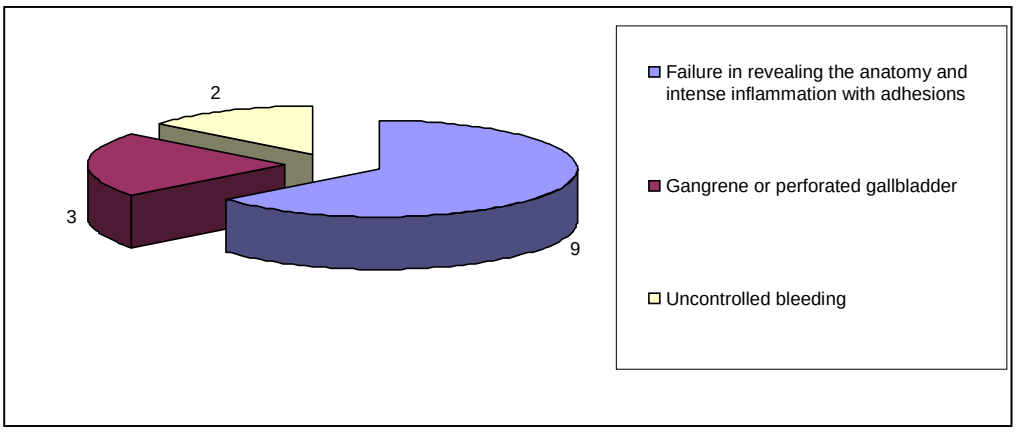

Figure 1. Causes of Transition to Open Surgery (n = 14)

The average duration of the operations was 57.5 minutes. 64 patients (60%) were aspirated before gallbladder cholecystectomy. The drains were placed to 57 (54%) patients. The numbers of the patients with gallbladder perforation, empyema of the gallbladder, and pericholecystic fluid were 9 (8%), 19 (18%), and 3 (3%) respectively.

Complications developed in 11 patients (10%) (**Table 2**). There were no important gallbladder injury and mortality. 3 patients (27%) had a fever and abdominal fluid collection. All of them were treated with antibiotics. 4 patients (36%) developed a wound infection and they responded to conservative treatment. 2 patients (18%) had a postoperative bowel obstruction and recovered with conservative treatment. 2 patients (18%) had cystic duct stump leak. They were treated by using nasobiliary drainage.

Table 3. Postoperative Complications (n = 11)

Wound Site Infection	**4**	**36**
Fever and Intra-abdominal Fluid	3	**27**
Biliary leak	2	**18**
Ileus	**2**	**18**

DISCUSSION

In the early years of laparoscopic surgery, laparoscopic cholecystectomy has also been considered as relatively contraindication in patients with acute cholecystitis (6). In the literature, there are studies revealing a significant increase in operation duration and hospitalization duration, the morbidity rate ranging between 3% and 30% after laparoscopic cholecystectomy in patients with acute cholecystitis (7,8). The complication rate in our series is (10%) which seems parallel to those in the literature.

There are studies in the literature reporting that laparoscopic cholecystectomy can be performed safely by experienced surgeons in acute cholecystitis cases (9,10). However, there is no doubt that the transition to open surgery in patients with acute cholecystitis is more frequent than those with elective cholecystectomy. In a study, the rate of transition to open surgery from early laparoscopic cholecystectomy for acute cholecystitis cases was reported to be 10.3% (11). When seven different studies in the literature were examined, the rate of transition to open surgery from early laparoscopic cholecystectomy in acute cholecystitis cases was reported to be between 7% and 36%. In these seven studies, 69 patients (22%) from a total of 316 patients underwent a transition to open surgery (12-18). The major reason for the high rate of transition to open surgery is the adhesions due to inflammation around the gallbladder and dissection hardening caused by that and the failure to reveal the anatomy clearly. The bleeding and biliary tract injuries are the other common causes. The rate of transition to open surgery in our series was recorded as 13% (14 cases) which is conforming to the literature. In our study, failure in revealing the anatomy and having intense inflammation with adhesions were determined to be the major reasons for the transition to open surgery.

There is a common belief that a conservative treatment approach to cholecystitis will increase the chance of successful laparoscopic cholecystectomy in the future. Since the rate of transition to open surgery was not high in our study, it may not confirm this proposition.

The gallbladder having hydrops and edema are usually observed in the cases with acute cholecystitis. We believe that some key points should be kept in mind while performing laparoscopic surgery in acute cholecystitis cases. For example, gallbladder decompression should be done early in order to determine the Calot triangle well during the operation. In our study, the gallbladder decompression was required for 60% of the patients.

Early laparoscopic surgery offers definitive treatment at first admission and also avoids recurrent symptoms that may develop afterwards. Moreover, the early surgical intervention not only contributes to the patient in terms of shorter hospitalization period but also provides significant economic benefit to the healthcare system. The waiting period for elective cholecystectomy, after being discharged from the hospital ranged between 4 weeks and 12 months. The recurrent gallstone complications, such as acute pancreatitis and clogging at the patients whose surgical intervention is postponed cause increase in the overall health and care costs (19.20.21).

In the current literature, the early laparoscopic treatment for acute cholecystitis (up to 72 hours after the onset of symptoms) has been considered to be among the recommended treatments (22). We believe that laparoscopic cholecystectomy should be done early after the onset of symptoms thus it will reduce the complications that will occur due to cholecystitis and the duration of hospitalization will be shortened.

To conclude, the early cholecystectomy was not accepted as a routine for the acute cholecystitis cases. There is no consensus chart, national or international policy or guidelines for acute cholecystitis management. We believe that laparoscopic cholecystectomy is safe,

effective, and associated with low incidence of complications when routine surgery is performed by experienced surgeons.

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