

Laparoscopic Cholecystectomy in Cirrhotic Patients with Symptomatic Cholelithiasis

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ABSTRACT

Gallstones are twice as common in cirrhotic patients as in the general population. Laparoscopic cholecystectomy (LC) was originally contraindicated in cirrhotic patients because of the associated portal hypertension and coagulopathy. But nowadays, it is not considered contraindicated. This study examined the safety of LC in Child's class A-B patients. All the cirrhotic patients with gallstones who underwent LC between September 2008-October 2011 have been included in the study. All the cirrhotic patients with Child-Pugh class A and B cirrhosis undergoing LC were included in the study. Demographic characteristics and other parameters including initial presentation, conversion rate, complication rate, mortality, and duration of hospital stay, timing operative were investigated. 21 patients with Child-Pugh A (76.1%) and Child Pugh B (23.8%), liver cirrhosis, (F/M 4/21) underwent LC. The mean age was approximately 61.1±14 years. Two patients (9.5%) developed postoperative wound infection, and mean hospital stay was 3.8 (2-12) days. Of the 21 cases, 2 (9.5%) were converted to open cholecystectomy. The mean operation time was 82.5±15 minutes. Intra-operative and postoperative complications occurred in 3 patients (14.2%) in the form of liver bed bleeding. LC is a safe and effective alternative for the treatment of symptomatic cholelithiasis in patients with well-compensated Child's Class A and Class B cirrhosis. The laparoscopic approach offers advantages of less blood loss, shorter operative time, and shorter length of hospitalization in patients with cirrhosis compared to open cholecystectomy.

Key words: Cirrhosis, cholelithiasis, laparoscopic cholecystectomy.

Semptomatik Safra Kesesi Taşı olan Sirotik Hastalarda Laparoskopik Kolesistektomi

ÖZET

Sirotik hastalarda safra taşları genel popülasyona göre iki kat daha sık görülmektedir. Daha önceleri sirotik hastalarda portal hipertansiyon ve koagülopati varlığı nedeni ile laparoskopik kolesistektomi (LK) kontrendike bir durum olarak kabul edilmekte iken günümüzde uygulanabilir bir prosedür haline gelmiştir. Bu çalışmada Child A ve Child B sirotik olgularda LK'nin güvenilirliğini değerlendirdik. Kasım 2008 ile Ekim 2011 arasında LK yapılan safra kesesi taşı olan sirotik hastalar çalışmaya dahil edildi. Demografik özellikler ve başlangıç başvuru şekli, dönüşüm oranları, komplikasyon oranları, mortalite, hastanede kalış süresi, operasyon süresi gibi diğer parametrede değerlendirildi. Child-Pugh A sirozlu (%76.1) ve Child Pugh B sirozlu (%23.8) toplam 21 hasta'ya (K/E 4/21) LK uygulandı. Hastaların yaş ortalaması 61.1±14. İki hastada (%9.5) postoperatif yara yeri enfeksiyonu gelişirken ortalama hastanede kalış süresi 3.8 (2-12) gündü. 21 olgudan sadece 2'sinde (%9.5) açık kolesistektomiye geçildi. Ortalama operasyon süresi 82.5±15 dakika idi. İntraoperatif ve post operatif dönemde 3 hastada (14.2%) karaciğer parankim kanaması gözlemlendi. Semptomatik safra kesesi taşı olan kompanse sirotik Child A ve Child B'li olgularda LK güvenilir ve etkili alternatif bir tedavi yöntemidir. Laparoskopik yaklaşım daha az kan kaybı, kısa operasyon süresi ve kısa yatış süresi, gibi birçok avantajı olan yaklaşımdır.

Anahtar kelimeler: Siroz, kolelitiazis, laparoskopik kolesistektomi

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INTRODUCTION

Gall stones are most commonly seen in cirrhotic patients due to several factors; including reduced hepatic synthesis and transport of bile salts, high estrogen levels, and impaired gallbladder contraction (1,2). Laparoscopic cholecystectomy is the gold standard therapeutic intervention for the treatment of symptomatic gallbladder stones (3). It was accepted as exact or relative contraindication in patients with cirrhosis until 1995 because of increased mortality and morbidity associated with portal hypertension and liver failure. Years of experience on laparoscopic cholecystectomy and new instruments are now allowing safe and easy implementation, so it is no more regarded as contraindicated (4).

To date, in cirrhotic patients laparoscopic cholecystectomy has found widespread use for the treatment of symptomatic gallstones with low mortality and morbidity rates. In this study, we investigated the applicability, reliability and affectivity of laparoscopic cholecystectomy in Child A-B cirrhotic patients with symptomatic gallbladder stones

MATERIALS AND METHODS

We reviewed retrospectively 727 patients with symptomatic gallbladder stones who underwent laparoscopic cholecystectomy between September 2006 - October 2009. Twenty-one of these patients (F/M 4/17) had Child-Pugh A-B liver cirrhosis. This group constituted 2.8% of all patients who underwent laparoscopic cholecystectomy. For all patients diagnosis was made by history, physical examination, laboratory tests, hepatobiliary ultrasound and intraoperative macroscopic evaluation. Elective laparoscopic cholecystectomy was performed in all patients under general anesthesia. With the help of a Veress needle 12 mmHg pneumo-peritoneum was created. Standard 4-port (2x5mm trocars, 2x10 mm trocars) technique was used. After surgery, a silicone drain was placed in terms of postoperative bleeding, bile leakage and acid control. Following surgery intraoperative liver punch biopsy was taken for histopathological evaluation.

All patients were monitored 24 hours following surgery. Operation time, hospital stay, postoperative and intraoperative complications, conversion rates, Child-Pugh classification and demographic data were recorded. Patients were routinely called for control a week later and the data were reviewed.

Table 1. Demographic and clinical characteristics of the cirrhotic patients.

	n:21
Age (years)	61.1±14
Sex (Male/Female)	17/4
Child Pugh A	76.1%
Child Pugh B	23.8%
Hepatitis B-C	71.4%
Alcoholic	14.2%
Cryptogenic	14.2%

RESULTS

Twenty-one patients [4 women (19%) and 17 men (81%)] were included in the study and the mean age was 61.1±14. Due to excessive fibrosis in 2 of these patients dissection of Callot triangle and identification of anatomical structures could not be made so the procedures were converted to open. Conversion rate was approximately 9.5%. Conversion rate was 4.7% in Child A group and 4.7% in Child B group. Intraoperative 1 and postoperative 1 patient received blood transfusion because of haemorrhage. Liver bed bleeding was seen in one patient in Child A (4.7%) group and in two patient in Child B group (9.5%). Sixteen patients had (76.1%) Child A, 5 patients (23.8%) had Child B class liver cirrhosis; there were no patients with Child C group. The aetiology of liver cirrhosis was viral hepatitis in 15 patients (71.4%), alcohol in 3 patients (14.2%), cryptogenic in 3 patients (Table 1).

The mean duration of surgery was 82.5±15 minutes, hospital stay was 3.8 (2-12) days. Wound infection was seen in 2 patients in Child B group (9.5%) and simply treated with wound care and antibiotic therapy. None of the patients required re-operation. Only one patient in Child B group required Endoscopic Retrograde Cholangiopancreatography (ERCP) due to biliary fistu-

Table 2. Surgical Outcomes after Laparoscopic Cholecystectomy

Laparoscopic Cholecystectomy	n:21
Mean Hospital Stay (day)	3.8 (2-12)
Operation Times (minute)	82.5±15
Conversion Rate	9.5 %
Liver bed bleeding	14.2%
Bile Leakage	4.7%
Wound Infection	9.5%

la and the fistula was treated successfully with ERCP (4.7%) (Table 2).

DISCUSSION

The prevalence and incidence of gallstones in patients with liver cirrhosis are two times more than non-cirrhotic patients (4,5). Asymptomatic gallstones rarely lead to problems. Complications of gallstones may include; biliary colic, acute cholecystitis, choledocholithiasis and acute pancreatitis. The infection which develops in about 20% of cases is the most important complication of acute cholecystitis. In addition some of the cases with acute cholecystitis may require emergent surgery. During the course of cirrhosis infections are highly associated with mortality. On the other hand Mansour et al, reported that the mortality rate in patients with cirrhosis after emergent abdominal surgery was 50%, compare 18% for elective surgery (6). In the light of these results surgeons may prefer elective surgery for gallstones in patients with cirrhosis especially in Child-Pugh A and B.

Open cholecystectomy in cirrhotic patients is an important problem because of high rates of morbidity and mortality. Since the development of laparoscopic techniques; laparoscopic cholecystectomy has become the first choice of treatment for symptomatic gallstone diseases in patients with cirrhosis. Cholecystectomy in patients with cirrhosis is associated with 7% mortality and 5-23% morbidity in the literature (7,8) Due to high mortality and morbidity rates it must be kept in mind that it may be a hard task, some authors advocate that indications for cholecystectomy in patients with cirrhosis should be limited (9,10). Therefore, several clinical trials considered cirrhosis a certain contraindication for laparoscopic cholecystectomy. Despite these views, with increased experience in laparoscopy and availability of more ergonomic tools and intraoperative homeostatic products some studies advocate that laparoscopic cholecystectomy in patients with cirrhosis should be widely used (11-13). In addition, because of the complications of open cholecystectomy (fibrosis, hernias, wound infections, etc.) laparoscopy is the recommended method of treatment (14).

Hepatitis B and C are the most common causes of liver cirrhosis in developing countries. In Western societies alcoholic liver cirrhosis is more common. In our study, viral hepatitis is responsible for 71.4%, alcohol

14.2% and cryptogenic causes 14.2% of cirrhosis cases. Intraoperative, incidentally detected liver cirrhosis cases have been reported in the literature, but no such cases were found in our study (15). In our study, the average operation time was 82.5 minutes; this is lower than the previous reports. During laparoscopic cholecystectomy, conversion rate to open cholecystectomy have been reported in patients with liver cirrhosis ranged from 0 % to 15.7 % (16-18). Our study revealed a similar conversion rate of 9.5%.

Wong and Puggioni found that operative time and hospital stay were significantly decreased compared to open cholecystectomy. In the current literature the average length of hospital stay was approximately 3 to 7 days (19-20). Although in our study hospital stay was similar to those reported in the literature, it was longer than non-cirrhotic patients. Chinnasamy and colleagues reported that bleeding is quite common in the liver and gallbladder bed. In the literature the authors reported that intraoperative bleeding rate of laparoscopic cholecystectomy was 9.8-12% (21,22). This is generally venous bleeding; therefore it can be easily controlled. In our study haemorrhage was seen in 14.2% of the cases, one of them was stopped by intra-operative spongostan, the other 2 were controlled with postoperative transfusion of fresh frozen plasma and red blood cell and did not require reoperation.

As a result, symptomatic gallstones in laparoscopic cholecystectomy in patients with liver cirrhosis in selected Child-Pugh A-B are a safe and effective treatment method. Today, with increasing experience and technological advances laparoscopic cholecystectomy in cirrhotic patients is no more contraindicated. Laparoscopic cholecystectomy is a successful method with a shorter operation time and hospital stay, low conversion rates and acceptable morbidity rates.

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