

Laparoscopic cholecystectomy: clinical analysis

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Abstract

Background: laparoscopic cholecystectomy has revolutionized the surgery for symptomatic cholelithiasis since its introduction in 1987, it became the gold standard procedure for gall bladder disease, this clinical analysis study was carried in Al-Husain general hospital- Karbala.

Objective: our study aims to evaluate the results of laparoscopic cholecystectomy in symptomatic cholelithiasis in our setting.

Patients and Methods: a total of 145 patients with symptomatic gall stones were subjected to laparoscopic cholecystectomy during the period June2005-November2009, cases with common bile duct stone, obstructive jaundice, abnormal liver function tests, high risk cardiovascular cases were excluded from the study.

All cases were analyzed & compared with the results in the international literatures

Results: out of 145 cases operated on 137(94%) were females, 8(6%) were male, age range was 20year-65year,cases with past history of jaundice were 23(16%),cases with history of previous abdominal surgery were 46(32%),cases with iatrogenic perforation of the gall bladder were 23(16%),cases who needed conversion were 5(3%),hospital stay was 1-2 days in 70% of the cases.

Conclusion: laparoscopic cholecystectomy is the gold standard procedure for symptomatic cholelithiasis provided the surgeon performance started through a standard learning curve principles.

Key words: laparoscopic cholecystectomy, conversion, bile duct injury.

الخلاصة

أجريت دراسة سريرية ل(145) عملية جراحية لرفع كيس الصفراء باستخدام ناظور البطن الجراحي خلال الفترة من حزيران 2005- ولغاية تشرين الأول 2009 في مستشفى الحسين- كربلاء.

وكان هدف الدراسة هو لتقييم النتائج التي تم الحصول عليها و مقارنتها بالدراسات المماثلة. كانت نسبة الذكور 6% والإناث 94%، مدى الأعمار كان بين 20-65 عام، ونسبة تمزق كيس المرارة أثناء العملية الجراحية كان 16%، ونسبة تحويل العملية من الناظورية الى فتح البطن 3%، ومدة مكوث المريض في المستشفى تتراوح بين 1-2 يوم ف ي 70% من الحالات. يستنتج من أعلاه أن عملية رفع كيس المرارة بالناظور الجراحي هو شبه مثالية شرط أن يكون الجراح قد اعتمد الأسس القياسية أثناء تدريبه وممارسته للجراحة الناظورية.

Introduction

cholelithiasis is a worldwide disease for which, ^(1,2,5) conventional cholecystectomy was first introduced by Carl August Langenbach of Berlin (1882)⁴. In 1987, Prof. Philippe Mourets, in Lyon, France, performed the first laparoscopic cholecystectomy⁽⁴⁾, creating a new era in the

surgery of gall bladder disease, since then laparoscopic cholecystectomy has awarded the international acceptance among the surgeons in the management of cholelithiasis. It has proved over the last two decades to be a safe, less traumatic, with short hospital stay & early return to ordinary life activity ⁽⁵⁾ provided that the surgeon initially has practiced through

the standard learning curve principles⁽⁶⁾. About 500000 cholecystectomies are done annually in the USA. Our simple study is to through the light on our experience in laparoscopic cholecystectomy in Karbala governate concerning per operative results & post-operative complications.

Patients & Methods

In this study, 145 patients with symptomatic cholelithiasis, [137(94%) female, 8(6%) male] were subjected to laparoscopic cholecystectomy in the dept. of surgery, Al-Hussein general hospital-Karbala, during the period from June 2005 to November 2009. Patients were investigated for by abdominal US, MRCP if needed, patients with dilated CBD, obstructive jaundice, deranged LFT, high risk medical conditions were excluded from the study. Written consent was taken from the patients after explaining to them all possibilities. On the morning of surgery the patient was given one

gram of ceftriaxone IV & continued for another 4 doses, we used 3 ports (epigastric, subumbilical & right subcostal) & if needed another additional fourth port below the subcostal one was added. We use the closed method for CO2 insufflation, open method is used in case of previous abdominal surgery or failure of the closed method.

At the completion of the procedure the operative field was washed with normal saline, tube drain is left in the subhepatic space through the subcostal port for 24-48 hours. Oral clear fluid is started next morning. Most of the patients are discharged on the first or second post-operative day.

Results

out of 145 cases, 137(94%) were female, 8(6%) were male .age range was 20 year-65 year as in table 1, weight range was 45Kg-120Kg as in table 2

Table 1.distribution of patients according to age

Age(year)	No.of patients
20-29	39
30-39	37
40-49	32
50-59	24
60-69	13
total	145

Table 2.distribution of patients according to weight

Weight(kg)	No.of patients
40-49	9
50-59	17
60-69	47
70-79	39
80-89	17
90-99	8
100-109	4
110-119	0
120-129	4
Total	145

23(16%) patients had past history of jaundice. 46(32%) patients had history of previous abdominal surgery. 136(94%) patients on US showed gallbladder wall thickness less than 3 mm, 9(6%) showed wall thickness more than 3 mm. 23(15%) patients had iatrogenic gall bladder perforation with spillage of bile. 47(32%) patients, intraoperatively, showed to have acutely inflamed gall bladder. 8(6%) patients had mucocele of the gallbladder. 2(1.3%) patients were found to have cholecyst-hepatic duct. 1(0.65%) patient was found to have

caterpillar anomaly of the right hepatic artery. 5(3.4%) patients developed port site infection. 98(68%) patients suffered post-operatively from moderate type of pain. while 47(32%) suffered from severe pain which required strong analgesia. Hospital stay in the majority was about 1-2 days, as shown in table 3. Conversion was needed in 5(3.4%) patients as shown in table number 4.

13 patients developed intra & post-operative complications as shown in table 5.

Table 3. distribution of patients according to hospital stay in days

Hospital stay (days)	No. of patients
1	18
2	84
3	11
4	14
More than 4	18
total	145

Table 4. distribution of patients according to the cause of conversion

Causes of conversion	No. of patients
Uncontrolled cystic artery bleeding	1
Distended bowel loops with adhesions	1
Spilled big stone	1
Technical failure in the insufflator	1
Severe dense adhesions at calot triangle & fibrotic gall bladder	1

Table 5. distribution of patients according to the type of complication

Type of complication	No. of patients
Common bile duct injury	2
Anesthetic cerebral damage	1
Subhepatic biliary collection	1
Persistent fistula at the right subcostal port site	1
Acute pancreatitis after one month from discharge	1
Missed common bile duct stone after one month from discharge	1
Epigastric port site infection	5
Intra-operative cystic duct avulsion	1

Discussion

Since 1987 laparoscopic cholecystectomy started to gain popularity ⁽⁷⁾ & replaced in the majority of symptomatic cholelithiasis the conventional cholecystectomy ⁽⁵⁾. It proved to be less traumatic, safe, with

short hospital stay, with less pain & early return to work ^(5,8,9). With this new gold standard procedure ⁽¹⁰⁾, certain problems started to rise in the surgical horizon. It needs a standard learning curve for the new trainee to avoid per operative complications associated with laparoscopic

cholecystectomy. In our study the age range was 20-65 year, compared to other literatures, nearly the same Parvz Iqbal⁽⁵⁾. Female cases were 137(94%), while male cases were 8(6%), it shows higher female incidence as in other literatures Zafar⁽⁹⁾, Parvz⁽⁵⁾, Keith⁽¹¹⁾. History of mild jaundice was found in 23(16%) patients, operation was postponed until liver function tests & US were normal. It goes with normal findings after an acute attack, history of previous abdominal surgery was found in 46(32%) patients, in these cases we used the closed method for CO2 insufflation, the open method was used in case of difficulty, without any complications.

Perforated gall bladder with bile spillage was found in 23(15%) patients which is less than 30% mentioned by Sanjay & Langer⁽¹²⁾ or within the range of(5-40%) as in Kumar⁽¹³⁾. 47(32%) patients were found intra-operatively to have acutely inflamed gall bladder & 8(6%) cases with mucocele, in most of them Calot triangle was easy to dissect. in 2(1.3%) cases we found cholecyst-hepatic duct, in other literature it was 2% Salroo⁽⁸⁾. In One case (0.7%) caterpillar anomaly of the right hepatic artery was found, in the literature it was 1%⁽⁸⁾.

Conversion was necessary in 5(3.4%) cases, conversion in the literatures ranged as follows: 9.4% Parvz⁽⁵⁾, 1.5-19% Saxsena R et.al.⁽¹⁴⁾ 8-14% Zucker KA⁽¹⁵⁾, 9% Salroo⁽⁸⁾, 6.3% Hadad⁽¹⁶⁾, 4% Sanjay & Langer⁽¹²⁾. In one case it was due to uncontrolled cystic artery bleeding, second due to excessive gaseous distension causing technical difficulty, third due to spilled big solitary stone, fourth due to technical failure in the insufflator reading, fifth due to dense adhesions at Calot triangle & fibrotic gall bladder.

Complications: 2 cases (1.3%) of common bile duct injury, which is double that in the literatures^(17,18), it was small side hole which was treated by tangential clip, one did well the other ended with bile leak after 24 hours, treated by T-tube

Hospital stay: it was around 1-2 days in around 70% of the patients, the rest stayed for 3 or more days. In the literature it was mentioned as 3.3 day⁽⁸⁾ & 4.3 day Sanjay & Langer⁽¹²⁾.

Epigastric port infection were 5 cases (3.4%). the rate in the literatures were 2.6% Kheeo Dholia⁽⁷⁾, 1.7% Mufti⁽⁹⁾, 2.2% Oonwala⁽¹⁹⁾, 1.6% Arain GM⁽²⁰⁾.

Post-operative pain, moderate pain needing intermediate analgesia was recorded in 98 cases (68%), 47 cases (32%) needed strong analgesia

Complications: in addition to the above mentioned two cases of CBD injury. One case developed cerebral damage due to anesthetic cause. One developed sub-hepatic biliary collection which drained after mobilization of the tube. One case developed right subcostal fistula due to missed glove finger after trial to extract spilled big stone one case after one month from surgery developed signs & symptoms of common bile duct obstruction by a stone ,she was sent for ERCP. Five cases developed epigastric port infection.

One case presented after one month as acute abdomen with signs and symptoms of acute pancreatitis, proved by CT & US, but, NO common bile stone was detected, patient improved on conservative measures.

Conclusion

laparoscopic cholecystectomy is considered to be a safe, less traumatic procedure, with short hospital stay,

early return to normal activity, low morbidity & mortality, provided the surgeon has practiced through a standard learning curve program, measures to be taken to avoid instrumental & technical failure, conversion must not be delayed when there is no progress during the procedure.

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