



Surgery

A STUDY OF COMPLICATIONS OF LAPAROSCOPIC CHOLECYSTECTOMY AND ITS MANAGEMENT: INSTITUTIONAL EXPERIENCE

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ABSTRACT **BACKGROUND:** Laparoscopic cholecystectomy(LC) is the standard procedure for the treatment of gall stone disease . Laparoscopic- related complications and its management are analysed in our study.
MATERIALS AND METHOD: The study included 110 patients who underwent LC for calculus cholecystitis during the period from November 2015 to April 2017 .
RESULTS: The main intra operative complications were bleeding(12 cases,10.9%), common bile duct(CBD) injury(1 cases,0.9%), and iatrogenic perforation of gall bladder(2 cases,1.8%). The average operative time was 90 minutes. Conversion to open surgery was done in 15 patients(13.6%), mainly due to obscure anatomy as a result of acute inflammation. The main postoperative complications were bile leak (4cases, 3.6%), bleeding(2 cases, 1.8%) and retained bile duct stones(2 cases, 1.8%). The average hospital stay was 3 days and no deaths were recorded.
CONCLUSION: In our experience of 110 patients, most of the post operative complications 7.2% were managed by conservative approach and in 3.6% of cases minimal invasive procedures were carried out: 2 endoscopic sphincteromies for retained bile duct stones and 2 laparoscopic procedure(for subhepatic abscess and port site hernia). Thus laparoscopic cholecystectomy can be performed safely and effectively in appropriate patients with least complications offering the major advantages of this procedures.

KEYWORDS : laparoscopic cholecystectomy, complications, laparoscopy

Introduction

Laparoscopic cholecystectomy(LC) is the procedure of choice in the symptomatic gall stone disease. The widespread acceptance of laparoscopic cholecystectomy all over the world has changed the scenario of complications related to the procedures. This study analysed the various complications during the intraoperative and postoperative period and their successful management.

Materials and Methods

This is a prospective study of 110 patients presented with gall stone disease and cholecystitis underwent Laparoscopic cholecystectomy (LC) between November 2015 and April 2017, performed in IMS & SUM Hospital, Bhubaneswar. Ages ranged between 15 and 70 years, and 89(80.9%) being female and 21(19%) male. North American method of standard four ports laparoscopic cholecystectomy was performed. The operative diagnoses are given in (Table 1). The complications were observed in intra operative, early postoperative and late postoperative periods and their best treatment instituted. The inclusion criteria in our study were symptomatic ultrasonography proven gall stone disease.

Results

A total of 110 patients underwent laparoscopic cholecystectomy between November 2015 to April 2017. The following problems were analysed. The intraoperative complications and their relative incidences are shown in (Table 2). Bleeding from the cystic artery (2 cases) was controlled by clipping the artery between the lesion and its origin. Bleeding from the gall bladder bed (5 cases) was noted in patients with acute cholecystitis. In 3 patients hemostasis was achieved by using a Harmonic scalpel, while in 2 cases conversion was done and hemostasis was achieved by suturing the peritoneum of the gall bladder. Bleeding from the omental vessels (4 cases) encountered while adhesiolysis carried out for patients in acute cholecystitis with gross adhesions. In 2 cases hemostasis was achieved by using Harmonic scalpel, while in 2 cases conversion was required with hemostasis by suture ligation. Common bile duct injury occurred in 1 case with tangential side lesions conversion done a T-tube drain was inserted and the patient recovery was uneventful. Iatrogenic perforation of gall bladder during dissection or extraction with spillage of gall stones was recorded in 4 patients. In 2 patients conversion done as LC was not feasible due to acute cholecystitis with adhesions, while in 2 cases spillage stones in the peritoneal cavity were grasped and

extracted, which prolongs the operation time. Conversion to open surgery was carried in 15(13.6%) patients (Table 3). Dense adhesions due to previous laparotomy 2 cases and CBD stones 1 case was the reason for conversion. Acute cholecystitis with pericholecystitis was noted in 6 patients for the reason for conversion. Early postoperative complications (less than 2 weeks) encountered in 9(8.1%) patients (Table 4). Bile leak 4 patients and postoperative bleeding 2 patients via the subhepatic drain was noted, required conservative treatment and prolong hospitalisation without any sequelae. Endoscopic sphincterotomy was performed in 2 patients with retained bile duct stones. Laparoscopic drainage was done in 1 patient with subhepatic abscess. Late postoperative complications was recorded in 3 patients (Table 5) with port site infection at the umbilicus in 2 cases respond to conservative treatment and 1 case of umbilical port site hernia repaired laparoscopically.

Table 1. Operative Diagnoses

Diagnosis	Number of cases (%)
Chronic Calculous Cholecystitis	72(65.45)
Acalculous Cholecystitis	8(7.27)
Acute Cholecystitis	25(22.72)
Gall Bladder Mucocele	2(1.81)
Gall Bladder+ CBD Stones	3(2.72)

Table 2. Intra Operative Complications(17 cases,15.4%)

Portsite bleed	1
Bleeding from the Cystic Artery	2
Bleeding from the Omental Vessels	4
Bleeding from the Gall Bladder bed	5
Common Bile duct Injury	1
Spillage of Gall Stones	4

Table 3. Conversion to open surgery(15 cases,13.6%)

Bleeding from the Gall Bladder bed	2
Bleeding from the Omental Vessels	1
Pericholecystitis	6
Common Bile duct Injury	1
Iatrogenic Perforation of Gall Bladder	2
Dense Adhesions due to Previous Laparotomy	2
CBD Stones	1

Table 4. Early Post Operative Complications & their management

Complications	Management	Total
Bile leak	Conservative	4
Post operative bleeding	Conservative	2
Retained bile duct Stone	Endoscopic Sphincterotomy	2
Subhepatic abscess	Laparoscopic	1
Total		9

Table 5. Late Post Operative Complications

Port site infection	2
Biliary stricture	0
Port site hernia	1
Total	3

Discussion

Laparoscopy cholecystectomy(LC) by a experienced surgeon gives a better results. Laparoscopy-related complications such as access injuries and procedure-related problems are less pronounced in experience hands. LC entails lower morbidity and mortality rates than open operation[1,2]. Trocar and veress needle insertion injury incidence is about 0.25% of all laparoscopies with a mortality of 10% [3]. Port site bleeding is a frequent but minor complication (1-2% of all laparoscopies) that can be managed by putting compression to the port site by various methods [4], encountered with one case in our series. There is always increased operative risk in acute cholecystitis with pericholecystitis. Identifying the cystic pedicle and CBD is very difficult, retrograde cholecystectomy cause more damage to the liver parenchyma as cleavage plane is lost in the gall bladder bed. Conversion to open surgery is the best option for those patients. However, the postoperative morbidity and mortality rates conclude that obese patients are the better beneficiaries of laparoscopic cholecystectomy. Bile duct injury is more frequently seen in laparoscopy cholecystectomy(1%) of cases[5,6] than in open cholecystectomy(0.5%) of cases[7]. Risk factors for biliary injury during LC are inexperience, aberrant anatomy, dense adhesions and bleeding [8]. The decision for conversion is justified in any patient with obscured anatomy. Haemorrhage mostly due to injury to cystic artery is usually a reason for conversion[1,2] in our series hemostasis was achieved by laparoscopic means. Hemorrhage from the gall bladder bed was encountered in acute cholecystitis, in cirrhosis patients and in patients with a shrunken fibrotic gall bladder. Hemostasis was achieved by using Harmonic scalpel and by conversion suturing the peritoneum of the gall bladder (2 cases). Bile leakage was recorded (4 cases) in our series managed via subhepatic drain without any sequelae. Subhepatic abscess manifest 7-10 days after operation performed for acute cholecystitis, with right upper quadrant pain, fever, leucocytosis and ultrasonography diagnosis. Huang *et al.* reported 3 such complications in a group of 350 LC cases[9]. Laparoscopic drainage was performed in our case with excellent result. Retained bile duct stones were detected in early postoperative period in 2 patients managed by ERCP with sphincterotomy performed 5-7 days after LC. Among the late complications, umbilical port site infection (2 cases) treated conservatively and umbilical port site hernia one case repaired laparoscopically in our series. Laparoscopic port site hernias reported incidence of 0.02% to 5% [10]. There is no mortality in our series but the mortality from LC is reported to be about 0.2%.[11].

Conclusion

LC is one of the most frequently performed laparoscopic operations [12]. Careful selection of patients, management of the procedure-related complications are the key success for a safe laparoscopic cholecystectomy. Thus laparoscopic cholecystectomy can be performed safely and effectively in appropriate patients with least complications offering the major advantages of this procedure.

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