EARLY COMPLICATIONS OF LAPAROSCOPIC CHOLECYSTECTOMY FOR CALCULOUS CHOLECYSTITIS

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ABSTRACT

Background: Gallstones are the most common cause of hospitalization and most common elective procedure being carried out in hospitals. Although laparoscopic cholecystectomy is not as popular in Pakistan as in the west, because people have misconception of its complications.

Objective of Study: Therefore the present study was conducted to assess the early complications of laparoscopic cholecystectomy for calculus cholecystitis.

Place and Duration of Study: This study was conducted at CMH Rawalpindi from January 2003 to July 2003.

Patients and Methods: A total 100 patients with calculus disease were admitted. This comprised of 88 (88%) females, 12 (12%) males, age ranges from 21 to 60 yrs with mean age of 45 yrs. Patients were assessed per-operatively and post-operatively followed at 01 week, 01 month and 03 months for complications.

Results: The overall incidence of complications was 12% with major complication seen in only 4% cases. There was no mortality in our series.

Conclusion: It is concluded that Laparoscopic cholecystectomy is safe with less post-operative morbidity and mortality.

Keywords: Laparoscopic cholecystectomy, calculous cholecystitis.

INTRODUCTION

It is estimated that in United States of America about one million patients having gallstones are newly diagnosed annually. Gallstones are the most common cause of hospitalization and the most costly digestive tact disease, with an annual estimated overall cost of more than five billion US dollars.

Until few years ago, the prevailing treatment of symptomatic gallstones was an open operation through an abdominal incision to remove the gallbladder. The usual course of recovery from this procedure was a five-day hospital stay and a 3-6 weeks period of convalescence [1]. The mortality of the operation was relatively low (about 0.05%) except in older, high-risk individuals.

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Laparoscopic cholecystectomy was first performed in 1987 in France and in 1989 in Pakistan. The operation usually requires general anaesthesia and is subject to the same risks and complications as an open cholecystectomy, in addition to some complications specific to laparoscopic procedure. The major benefit of laparoscopy in upper gastrointestinal surgery results from avoidance of an upper abdominal incision. Less pain and improved pulmonary function tests are proven benefits of Laparoscopic cholecystectomy compared to small incision cholecystectomy [1-3]. Later studies concluded that laparoscopic cholecystectomy reduces hospitalization and promotes earlier recovery and return to normal activity and is not associated with post-Op immuno-suppression, with a more positive post-Op morbidity profile compared to open surgery [4-7]. Patient selection criteria for laparoscopic cholecystectomy are directly proportional to

the morbidity [8,9]. Based on the currently available data it is apparent that complications of laparoscopic cholecystectomy occur infrequently, although evidence indicates that the incidence of bile duct injuries is increased compared with the incidence from Open cholecystectomy an aspect that needs to be reevaluated with the better training and optics now available [10-12].

Purpose of Study:

To asses the early complications of laparoscopic cholecystectomy in calculous cholecystitis.

PATIENTS AND METHODS

Study Design:

This was a descriptive type of study.

Place and Duration of Study:

This study was conducted at Combined Military Hospital Rawalpindi surgical unit III from Jan 2003 to July 2003.

Sampling:

100 patients were included in study. Patients were sampled through non-probability convenient type of sampling, through out patient department for elective laparoscopic cholecystectomy.

Inclusion Criteria:

First hundred patients not having any of the exclusion criteria, who underwent laparoscopic cholecystectomy for symptomatic gallstones, were included in the study.

Exclusion Criteria:

The patients having symptomatic gallstones but having the following disorders were excluded from the study:

- Previous history of upper abdominal surgery
- Clinical, biochemical and ultrasonological parameter showing Common bile duct pathology
- Medical problems such as cardio-respiratory failure, obstructive airway disease or recent myocardial infarction resulting in ASA III rating
- Intra- hepatic gallbladder
- Stones larger than 1.7 cm
- Gallbladder wall thickness > 3 mm
- Bleeding Disorder
- Pregnancy (Third Trimester)
- On -going radiation therapy
- Immuno-suppressed patients
- Hepatitis B and C positive cases

Methods:

A nasogastric tube passed to empty the stomach was removed on extubation. Standard 4 port approach was used. In majority of cases abdomen closure was with vircyl 2/0 for the rectus sheath and for sub cuticular skin apposition. If there was leaking of bile in the peritoneal cavity it was sucked up and peritoneal cavity was washed with saline at the end of the procedure. No drain was placed in any case. Maxolon 10mg was given intravenously on induction and then as required post operatively. Injection Cefuroxime sodium 1.5 gm IV stat and two doses post-operatively was administered to all patients. Diclofenac sodium 75mg was given intramuscularly as required for pain relief. Liquids were provided usually on the night of surgery and a regular diet was resumed the next day. Majority of the patients were discharged on the first postoperative day.

Follow up:

Follow-up examination was performed at 01 week, 01 month and 03 months interval. Follow-up laboratory studies included liver function tests, complete blood count and ultrasound abdomen, if required.

RESULTS

The overall incidence of complications was 12% in our study.

Age Frequency:

The age ranged from 21 years to 60 years. The mean age was 45 years. The peak incidence was seen in fourth and fifth decades of life (table-1).

Sex Distribution:

Female to male ratio was 7.3:1. Females were 88% and males 12% (table-2).

Hospital Stay:

The length of hospitalization before surgery was not more than 12 hours. All patients were discharged on next day except the cases converted to open surgery. One had to be readmitted due to pain five days after discharge.

Complications:

Six of the patients were lost to follow up at 3 months. There was no mortality in the series. Two patients (2%) were converted to open cholecystectomy because there was uncontrollable hemorrhage from cystic artery. Five patients (05%) developed minor wound infection of port site, which were managed by simple antiseptic dressings. Umblical stitch sinus was seen in 02 patients (2%) who were managed with opening up of the wound, removing the sub cutaneous stitch and appropriate antibiotics. In two patients (2%) there was leaking of bile per-operatively which was sucked up and peritoneal cavity was washed with copious saline and tab cefuroxime 250mg b.i.d were continued for 48 hours post-operatively. One patient (1%) presented with pain in right hypochondrium, one week after successful laparoscopic cholecystectomy. His Liver functions were deranged with raised bilirubin levels. On abdominal ultrasound there was a little free fluid in the gallbladder bed, a 1 cm stone was suspected in the lower common bile duct.The patient was referred for ERCP and sphincterotomy following which patient settled. The overall incidence of complications was 12%; however there were no major complications like bile duct injury, bile duct strictures or any visceral injury (table-3&4) (figure).

DISCUSSION

Ever since Philips Mouret performed the first video-laparoscopic cholecystectomy in Lyons, France [13], this procedure is gaining popularity day by day and has become treatment of choice for symptomatic gallstones.

Laparoscopic cholecystectomy has caught the imagination of the surgical community and we have moved from a position of skepticism to the point where the instrument makers are unable to keep pace with the surgical demand [14]. Enthusiasm for laparoscopic cholecystectomy has grown rapidly, as recent reports have detailed the ease, efficacy and safety of this procedure.

Complications from minimal access procedure fall in to two general categories: those directly resulting from the laparoscopic intervention (e.g. Trocar injuries, dissection injuries, insufflation associated, electrosurgical events, dislodgement of clips) 15 and those associated with the operation itself (e.g. bile duct injury with cholecystectomy) [16-18].

In our series of 100 patients who underwent laparoscopic cholecystectomy, there was an overall morbidity of 12% but the major complications were seen in only 4% of the cases. This is comparable to 5% major complications rate described in the literature [8].

We converted two cases to open cholecystectomy because of uncontrolled hemorrhage from cystic artery. Gallbladder perforation and leakage of bile is a known complication during laparoscopic cholecystectomy [19]. We had minor leakage of bile from the gall bladder as a result of diathermy hook perforation in two patients while dissecting gallbladder from its bed. This was managed by applying a clip to the puncture site and sucking the bile followed by irrigation of the area.

Residual stone was present in one patient (1%) in our series. This figure is certainly significantly lower than the

incidence of unsuspected stone in common bile duct of 7% after cholecystectomy [6]. Pre and postoperative ultrasound is of high value in revealing common bile duct stones.

In our series only 07% patients had minor wound infections, 6 of umbilical port and 1 of epigastric port site. The hospital infection control committee implemented necessary remedial procedures. This is certainly greater than the reported incidence of 0.5% - 1% [20]. Wound infection is more common in obese patients.

As with traditional open cholecystectomy, bile duct injury is the most feared complication related to the new procedure. The injury rate is associated with learning curve. Nair and fellow members of Southern Surgeon Club reported that the rate of bile duct injury was 2.2% during a surgeon's first [13] laparoscopic cholecystectomies but it dropped to 0.1% in subsequent cases [21]. However, the overall incidence of bile duct injury is 0.2% in published series [22]. However bile duct injury still occurred with surgeons who had performed more than 100 cases [23]. In a local study carried out at Sir Ganga Ram hospital Lahore the bile duct injury rate was 2.6% [24]. In our series, we had no bile duct injury in laparoscopic cholecystectomy; however, it is of utmost importance that bile duct injuries should be recognized at the time of surgery and repaired accordingly. The likelihood increases in acute cholecystitis.

Hernia through the 10 mm port insertion was reported in 0.1%-0.3% of cases, and to minimize it, it is recommended that facial defect created by 10 mm or larger trocars should be closed whenever possible [25]. However we had no such complication though our follow up was insufficient to comment on this.

There has been a general perception that Laparoscopic surgery has a higher rate of complications. This was possibly so in the infancy of the procedure when every surgeon tried to venture into this field without

Table-1: Age distribution (n=100).

Age	No. of Patients	Percentage
21-40	14	14%
41-50	60	60%
51-60	26	26%

Table-2: Sex distribution (n=100).

Sex	No. of patients	Percentage
Females	88	88%
Males	12	12%

Table-3: Peroperative complications (n=100).

Complications	Patients	%tage
Trocar Induced Vessel Injury	0	0%
Spilled Stone	0	0%
Bile Duct Injury	0	0%
Common Hepatic Duct Injury	0	0%
Trocar Induced Visceral Injury	0	0%
Gall Bladder perforation	2	2%
CBD Clipping	0	0%
Dislodgement of clips	0	0%

Table-4: Postoperative complications (n=100).

Complications	Patients	Percentage
Wound Infection	05	05%
Hypertrophic Scar	0	0%
Missed Stone	1	1%
Port Site Hernia	0	0%
Incisional Hernia	0	0%
Pleural Effusion with Pneumonia	0	0%
Bile Duct Injury & Jaundice	0	0%
Bile Collection & Jaundice	0	0%
Sinus Formation	2	2%
Shoulder Tip Pain	0	0%
Persistent Wound Pain	0	0%

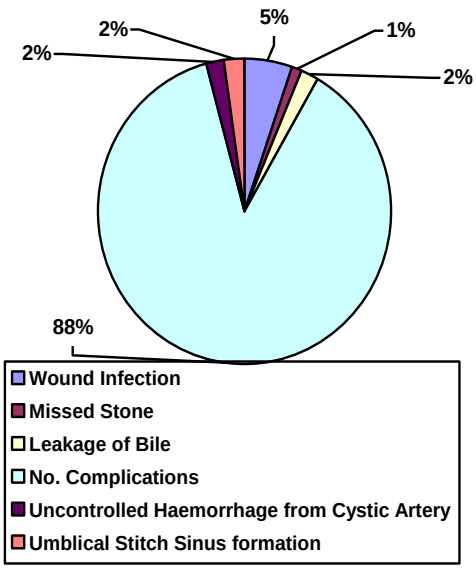

Figure: The morbidity chart.

accreditation. Various studies showed that surgeons who performed procedures without additional training were three times more likely to have at least one complication compared with surgeons who sought additional training. Additionally the presence of skilled associates and development of a surgical team impact favourably on reducing the number of complications [26,27].

CONCLUSION

The laparoscopic cholecystectomy is the treatment of choice in patients presenting with symptomatic gallstones. Laparoscopic cholecystectomy is safe with less post-operative morbidity. It has a low complication rate. Its advantages are faster patient recovery, less analgesic requirements, short hospital stay, negligible scar that is cosmetically more acceptable, earlier return to diet and earlier full mobilization, and ultimately earlier return to work. Patient's selection criteria for laparoscopic cholecystectomy are directly proportional to the morbidity. Conversion to open cholecystectomy may be required if there is a technical difficulty or unclear anatomy. Conversion under these circumstances reflects sound surgical judgment. The training, skill and judgment of the operating surgeon greatly influence the morbidity and there is a strong need for training and accreditation in this field.It is concluded that early complications are less in laparoscopic cholecystectomy and this procedure should be practice in every hospital where this facility is available.

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