

EVALUATION OF COMPLICATIONS OF LAPAROSCOPIC CHOLECYSTECTOMIES

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ABSTRACT

Objective: To analyze laparoscopic cholecystectomies and its complications.

Material and Methods: This study was conducted in Surgical Department of Hayatabad Medical Complex, Peshawar from January 2010 to December 2013. This included all patients who underwent elective laparoscopic cholecystectomies. We evaluated the results in terms of intra and post-operative complications including conversion to open cholecystectomy, morbidity, mortality and re-operation rate.

Results: The overall complications were 29%. Intra-operative complications were bleeding in 07%, gallbladder perforation in 4.2%, stone loss in 02%, common bile duct injury in 1.2% and injury to intra-abdominal organs in 0.8% of cases. Regarding postoperative complications there was wound infection in 02%, bile leakage in 2.9%, sub-hepatic collection in 1.2%, residual gall stones in CBD were 1.2%, biliary peritonitis due to leakage in 1.6%, conversion to open cholecystectomy and re-operation were 2.9% and 1.2% respectively. The overall mortality was 0.4%.

Conclusion: The overall rate of complications of laparoscopic cholecystectomies in our unit are comparable to that of the international standards.

Key Words: Laparoscopy, cholecystectomy, complications.

INTRODUCTION

Laparoscopic cholecystectomy is the procedure of choice for symptomatic gallstones now-a-days. It is the most commonly performed minimally invasive procedure all over the world¹. In fact it is now the gold standard. In United States alone 770,000 laparoscopic cholecystectomies are performed annually². Pakistan is lacking in this data however there is shift on the part of surgeons and patients towards laparoscopic removal of gallbladder. The reasons for the tilt of surgeons towards the laparoscopic removal of gallbladder being less post-operative pain, less scar formation and short hospital stay. However this technique is not completely safe and there are various complications which sometimes become grievous if it is not performed by trained personnel.

The first successful laparoscopic cholecystectomy was conducted in France in 1987³. The most widely adopted technique was through four ports. Then the number of ports kept on decreasing until recently that it is performed through a single port with modifications in the instruments used. Indeed it is very advantageous procedure than its counterpart open procedure, nevertheless it has high incidence of injuries to the various

structures. The incidence of bile duct injury is twice as common as that of open cholecystectomy⁴. The biliary complications of laparoscopic cholecystectomy include bile duct obstruction due to accidental CBD ligation, stricturing due to scarring after cauterization of CBD, leakage of bile leading to chemical peritonitis, retained stone in the CBD or dropped stone, accidental ligation of right hepatic duct, subhepatic collection and gallbladder perforation.

The rationale of this study was to share our experience and compare the rate of complications with that reported in literature. This will encourage young surgeons and also increase awareness among population regarding this procedure. This will also lessen the health budgeted cost in terms of less hospital stay.

MATERIAL AND METHODS

This prospective descriptive study was conducted in Surgical Unit, Hayatabad Medical Complex from January 2010 to December 2013. All the patients undergoing laparoscopic cholecystectomy were included who were on elective list admitted through OPD. Base line investigations were carried out to rule out co-morbidities and an expert ultrasound was carried out to exclude CBD stones. The competency level of the operating surgeon was minimum two years of experience after fellowship. Per-operative complications were noted on a structured proforma and post-operative complications on follow up visits on 1st, 10th and 30th post operation day. All the results were analyzed in SPSS 10 version and the results were displayed in a tabulated form.

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RESULTS

A total of 238 patients were operated over a span of three years. We had some interesting results as shown by these various charts.

DISCUSSION

There is a paradigm shift among surgeons towards minimally invasive surgery and laparoscopic cholecystectomy is the first ever procedure done under laparoscopic approach. This has revolutionized the treatment of symptomatic gallstones worldwide. Every year about 770,000 laparoscopic cholecystectomies are performed in the United States and also the trend is changing in developing countries². We currently have no data on this but surely the ratio is less as compared to the developed nations. The reasons being less ratio of laparoscopic cholecystectomies in Pakistan are high cost, less expertise, low awareness, reluctance on part of patients and general practitioners and delay presentation of patients having acute attack of cholecystitis. The aim of this study was to compare our results to that of the international studies and to publish it so that surgeons can be encouraged and to create awareness among patients regarding this standard cholecystectomy procedure.

Table 1: Age distribution

Age in years	No. of patients & percentage
20-30	31 (13%)
31-40	43 (18%)
41-50	69 (29%)
51-60	55 (23%)
61-70	40 (17%)

Table 2: Complications of Laparoscopic Cholecystectomies

Complications	No. of patients & percentage
Bleeding from cystic artery and liver bed	17 (7.1%)
Gall bladder perforation	10 (4.2%)
Stone loss	05 (2.1%)
CBD injury	03 (1.2%)
Visceral damage	02 (0.8%)
Wound infection	05 (2.1%)
Bile leak in drain	07 (2.9%)
Sub-hepatic collection	03 (1.2%)
Residual gall stones in CBD	03 (1.2%)
Biliary peritonitis	04 (1.6%)
Conversion	07 (2.9%)
Re-operation	03 (1.2%)
Mortality	01 (0.4%)
Overall complications	70 (29%)

Sex distribution

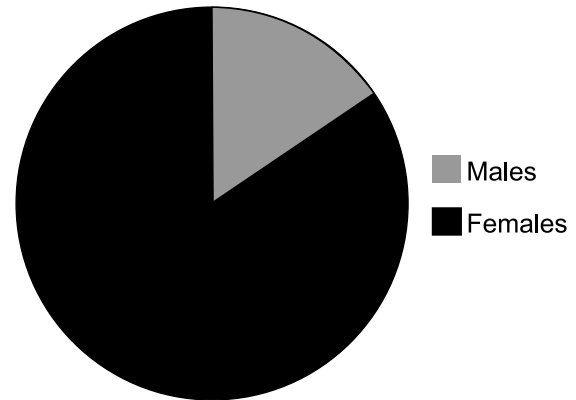


Fig 1:

The most common complications which we faced were difficulty in identifying the correct anatomy, bleeding from injuries to different vessels, injury to the CBD and other ducts, liver injury, visceral injuries and ligature slippage leading to leaking bile in the drain but all the data co-inside with the international data.

A common thought that there is an increase chance of injury to the CBD and other viscera in case of acute cholecystitis patient is not being followed by many surgeons. Though the rate of conversion to open cholecystectomy is higher in case of acute inflammation of gallbladder, this issue is taken into account by many researchers but all are of the opinion that it is not the inflammation but the experience of operating surgeon which matters. In our study all the patients were operated by a properly trained laparoscopic surgeon with minimal 2 years post graduate experience. Conversion rate in our study to open cholecystectomy was in 2.9%. Sakpal et al⁵ has reported 4.5% rate of conversion.

The range of age in our study is 20-70 with mean age of 45 years and majority of patients were in their 4th and 5th decade of life. We know from the literature that female above forty are the common presenters with symptomatic gallstones. In a local study 16% patients were male⁶. In our study 17% were males and 83% were females.

Gold Dueth et al⁷ reported intra operative bleeding in 11 (10.3%) of cases. In our study 17 patients (7.1%) had notable bleeding and this was mainly from cystic artery or liver bed. This bleeding was controlled in most of the cases by re-application of the clips, cauterization and pressure tactics. However 07 patients were converted to open cholecystectomy because of inability to control bleeding. This conversion rate is acceptable all over the world.⁵

Accidental perforation of gallbladder is one of the common complication⁸ and perforation resulted in 10 patients (4.2%) and loss of stone in 5 patients (2%). It was not significant in comparison to many studies^{9,10}.

The most feared complication of CBD injury¹¹ occurred in 03 patients (1.21%). Out of these, 02 patients presented with bile leak and were treated with endoscopic decompression by an expert Gastroenterologist while third patient presented to us with obstructive jaundice who had completely transected CBD and un-

derwent Roux- en- y choledocho-jejunostomy. Bile leak on 1st post-operative day was in 7 patients (2.9%) which gradually decreased afterwards. These leaks were dealt with conservatively and were sent home with drain. All the patients recovered and drain was removed after 1 week.

Regarding residual stones in the CBD, we had 03 patients (1.2%) who presented to us with chronic pain and jaundice in the follow up visits and were referred to gastroenterologist for sphincterotomy and endoscopic retrieval and all were cured. Residual stones in the CBD are reported in well reputed hands^{7,8} and is thought to be missed during ultrasonography.

Biliary peritonitis is also one of the dreadful complication,¹³ occurred in 4 patients (1.6%) who underwent laparotomy through midline incision and the necessary procedure for leak was performed and 03 patients recovered while 01 patient died in ICU from Hepato-renal shutdown. Overall stay of 88% of patients was 24 hour and those patients whose recovery was delayed were keenly observed and dealt accordingly.

CONCLUSION

Laparoscopic cholecystectomy is a safe procedure in expert hands. Young surgeons should be properly trained in order to minimize the rate of complications.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

- Iftikhar M:** Concept and design.
Nasir II: Analysis and data interpretation.
Iqbal Z: Data interpretation, drafting.
Azizullah: Statistical analysis.
Khattak IA: Critical revision.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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