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Laparoscopic Cholecystectomy: An early experience in Mardan Medical Complex

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Abstract

Objective: The aim of this study was to assess the safety of laparoscopic cholecystectomy surgery performed in Mardan Medical Complex.

Study Design: Prospective clinical practice audit.

Setting and Duration: Surgical Department, Mardan Medical Complex from March 2017 to February 2018.

Methodology: 180 patients presenting with signs and symptoms suggestive of acute or chronic cholecystitis of any age group and of both gender undergoing laparoscopic cholecystectomy were included. All the data was recorded on a standardized performa. Bias and confounders in the study were controlled by strictly following the exclusion criteria. The data collected included patient demographics, operative findings, operative time, conversion rate, length of hospital stay, wound infection and mortality.

Results: 180 patients underwent laparoscopic cholecystectomy during the study period. The mean age of all the patients undergoing LC was 41.32±8.97 years ranging from 20–60years. Females were 92.8% while males were 7.2%. The overall rate of conversion from laparoscopic to open cholecystectomy was 1.1% with dense adhesions making dissection of Calot's triangle difficult, the commonest cause. Bleeding was the commonest complication (15.6%). Gall bladder perforation occurred in 25 cases with spilled gall stones in 15(8.3%) cases. Port site infection was observed in 7 (3.9%) cases. No mortality was observed during the study period. The mean operative time was 45.95±4.7 minutes. 90% of the patients were discharged within 48 hours of surgery.

Conclusion: Laparoscopic cholecystectomy is a safe and effective procedure in most of the patients with less morbidity and mortality.

Keywords: laparoscopic cholecystectomy, conversion to open cholecystectomy, cholecystitis, complications, Calot's triangle, port site bleeding, port site hernia

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Introduction:

Cholelithiasis is the most common disease of the hepatobiliary system with incidence of 10-15% and the lifetime complications of about 35%.[1] Cholelithiasis is a common surgical condition causing significant morbidity to patients, and burden on surgical practices worldwide.[2]

Classically, the standard treatment for symptomatic gall stones was open operation through abdominal incisions to remove the gall bladder. After significant improvements in the design and optics of the laparoscopes in the late 1980s, now laparoscopic cholecystectomy (LC) is one of the most commonly performed procedures in general Surgery with more than 600,000 laparoscopic cholecystectomy performed annually.[3] Presently, more than 80% of cholecystectomies worldwide are carried out laparoscopically.[4]

Laparoscopic cholecystectomy has become the gold standard in the definitive treatment

Table-1: Operative findings during laparoscopic cholecystectomy (n=180)

Operative findings	No. of cases (%)
Normal looking gall bladder containing stones	78 (43.3)
Chronic cholecystitis	66 (36.7)
Acute cholecystitis	34 (18.9)
Mucocoele of gall bladder	2 (1.1)

of symptomatic gall bladder disease.[5] Small incision, reduced post-operative pain, recovery time, duration of hospitalization and improved cosmetic results are proven benefits of laparoscopic cholecystectomy.[6-8] The new technique offers the patient the advantages of minimal invasive surgery (MIS), which has been reported in many series over the past 15 years.[9,10] However, newer, less invasive techniques, such as natural orifice transluminal endoscopic surgery (NOTES) and single incision laparoscopic cholecystectomy (SILC), are currently being investigated as alternatives to the traditional 4-port laparoscopic removal.

Laparoscopic cholecystectomy is a commonlyperformed procedure at Mardan Medical Complex. The aim of this work is to assess the safety of laparoscopic cholecystectomy surgery through an audit performed in Mardan Medical Complex.

Material and methods:

This prospective study was conducted in Surgical Department of Mardan Medical Complex from March 2017 to February 2018. In this study, a total of 180 consecutive patients presenting through outpatient department (OPD) with signs and symptoms suggestive of acute or chronic cholecystitis of any age group, of both gender and American Society of Anesthesiologists (ASA) class I or II were registered. Patients with evidence of common bile duct pathology on clinical, bio-chemical or ultrasound bases, bleeding disorders, previously undergone abdominal operations, ASA grade III or IV or immuno-suppressed were excluded from the study.

All the patients were selected through nonprobability consecutive technique. All the patients who required cholecystectomy were offered laparoscopic cholecystectomy as an alternative to open cholecystetcomy. Patients were included in the study after taking informed and written consent. Complete history, thorough examination, laboratory investigations, abdominal ultrasound and pre anesthetic evaluation was done.

Laparoscopic cholecystectomy was performed using standard four port technique. In all cases, antibiotics were administered at the induction of anaesthesia. The laparoscope was introduced into the peritoneal cavity through an umbilical incision after establishing a pneumo-peritoneum with a Veres needle. Under laparoscopic vision, three working ports were inserted at the upper abdomen. Retrograde dissection was utilized to identify the cystic artery and cystic duct. The structures were individually clipped prior to dissection of the gallbladder from the liver bed. Drain was put through right site port where ooze was suspected in dissection area or in difficult cases.

Three doses of injectable antibiotics were given post-operatively. Parenteral opioid analgesia was administered on demand. Patients were discharged once diet was tolerated and followed up in the outpatient clinic setting.

All the data was recorded on a standardized proforma. Bias and confounders in the study were controlled by strictly following the exclusion criteria. The data collected included patient demographics, operative findings, operative time, conversion rate, length of hospital stay, wound infection and mortality.

The data was analyzed with the help of computer software SPSS for windows version 16.0. For categorical variables, frequencies were calculated while for continuous variables, mean and standard deviation were calculated.

Results:

In this study 180 patients were included. The mean age of all the patients undergoing laparoscopic cholecystectomy was 41.32±8.97 years, ranging from 20 - 60 years of age. Of the entire population under study patients were predominantly female that was 167 patients versus 13

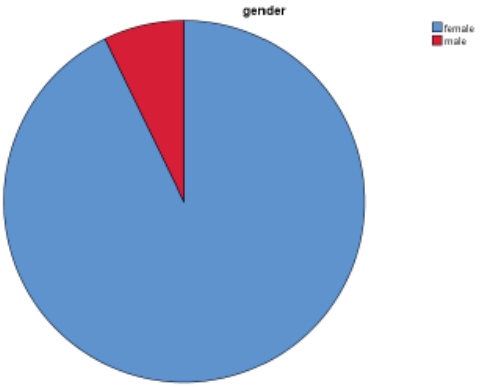

Fig. 1: Gender distribution

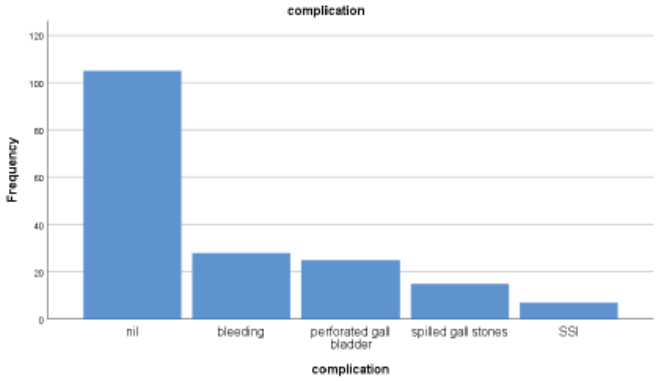

Fig. 2: Complication of laparoscopic cholecystectomy

(Fig-1). patients that were male. Of the 180 cases completing laparoscopic cholecystectomies, 43.3% had a normal looking gall bladder; 36.7% exhibited signs of chronic cholecystitis; 18.9% were acutely inflamed and 1.1% had mucocoele. (table 1) Intra-operatively, 2 cases (1.1%) were converted from laparoscopic cholecystectomy to open cholecystectomy. The most common cause for conversion of the laparoscopic procedure to an open cholecystectomy was dense adhesions making dissection of the triangle of Calot's difficult. The mean operative time was 45.95±4.69 minutes. 90% of the patients were discharged within 48 hours of surgery. Bleeding during the procedure was the commonest complication (15.6%). Gall bladder perforation occurred in 25 cases with spilled gall stones in 15 cases, where maximum number of stones were recovered during the procedure. Port site infection was observed in 7 cases. No mortality was observed during the study period (Fig 2).

Discussion:

LC rapidly replaced open cholecystectomy (OC) 20 yrs ago as the procedure of choice when cholecystectomy is indicated.[11] Laparoscopic cholecystectomy has been rapidly accepted by patients and surgeons as the preferred procedure for the treatment of gall stones.[12-15] Only until late was it considered that acute Cholecystitis was a relative contraindication to the procedure.[16] The application of laparoscopic technique for cholecystectomy is expanding very rapidly and is performed in majority of the tertiary care hospitals of our country. It is imperative that surgical practices be documented and audited for proper comparison with institutions around the world.

In the present cohort, the age range was 20 years to 60 years which was comparable to findings in the published literatute.[17,18] In this study the females were predominant share of all the cases that is evident by the disease process being more frequent in females. These findings were consistent with other authors from the region such as Mohammad et al.[19]

Long operating time is often cited as a drawback of laparoscopic cholecystectomy but despite initial lengthy procedures in stage of learning curve, our average operating time was only 45.95±4.69 minutes, shorter than the average duration reported in literature.[20,21]

An important benefit of laparoscopic cholecystectomy is short post-operative hospital stay and early return to work. In our study, 90% of the patients were discharged within 48 hour of surgery comparable to the earlier conducted studies.[20,21]

The decision to convert laparoscopic cholecystectomy to open cholecystectomy should be considered as a sign of surgical maturity rather than a failure. Most conversions happen after a simple inspection or a minimum dissection. Conversion should be opted for in the beginning and at the time of recognition of a difficult dissection rather than after the occurrence of complication.[22] In the present study, 2 (1.1%) operations required conversion to OC. The most frequent cause of conversions was dense adhesions making dissection in Calot's triangle difficult. This is in accordance with the 2-5% acceptable conversion rates that are reported from

larger series.[23-27]

In this series vascular injury was encountered commonly. These findings are consistent with the studies conducted by Raza et al[28] and Mufti-et al.[29] An important complication encountered during laparoscopic cholecystectomy is gall bladder perforation and spillage of gall stones, converting it into a lengthy procedure as it becomes important to retrieve all stones followed by irrigation to clear the spilled bile so that chances for abscess formation are decreased. In our study, frequency of gall bladder perforation with stone spillage was seen in 15 (8.3 %) cases, where maximum number of stones were retrieved during the procedure and no post-operative complication noted due to spilled gall stones. Whereas in literature the incidence is seen in 1.5 – 17% of cases undergoing laparoscopic cholecystectomy.[20,30]

Port site infection occurred in 7(3.9%) cases and were treated with antibiotics, daily dressings and debridements. Significant reduction in the post-operative infection is one ot the main benefits of minimally invasive surgery as the rates of surgical site infection is 2% versus 8% in open surgery.[31] In another study it is reported as 1.4% in laparoscopic surgeries versus 14.8% in open cases.[32] Mortality rate of 1% has been reported in literature.[33,34] However, in our study, there were no deaths.

Laparoscopic cholecystectomy is in continuous progress for better out come and less complications. The single most important predictor of adverse events in minimal accesssurgery is the experience of the provider with the specific operation. Surgeons must acquire the necessary technical skills and expertise before performing new minimally invasive procedures.

Conclusion:

We conclude that the our study of laparoscopic cholecystectomy has comparable result with the studies carried out at other surgical facilities around the world, in terms of operating time, duration of hospital stay, rate of conversion to open cholecystectomy and frequency of intra- and post-operative complication. Therefore, it would be reasonable to recommend the use of laparoscopic cholecystectomy as the preferred procedure for the treatment of gall stone disease in our surgical settings.

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Role and contribution of authors:

Dr. Asif Imran, collected the references, data and did the initial writeup.

Dr. Tamjeed Gul, critically review the artical and give the useful advices

Dr. Sana Sahar, collected the references and helped in discussion writing.

Dr. Mukhtiar Ali, collected the referenecs, data and helped in the interpretation of the data.

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