

Complications of Laparoscopic cholecystectomy at Muhammad Medical College**Mirpurkhas: Audit of 100 cases.**

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Abstract:

Introduction: The main objective was to determine the complications of laparoscopic cholecystectomy (LC) and its cause at Muhammad Medical College Mirpurkhas.

Methodology: This is prospective study carried out from February 2008 to January 2016. Data of all patients undergoing elective laparoscopic cholecystectomy during the study period and fulfilling the selection criteria was collected and entered in standard proforma and analyzed on SPSS 10.

Result: A total number of ten patients underwent laparoscopic cholecystectomy with an overwhelming majority of females (87 out of 100). The age ranges from 22-60 years mean age being 38 years. The overall complication rate was 9%. The complication included bleeding (4/100, 4%) from cystic artery and gall bladder bed, port site infection (4/100 4%) One patient developed collection in pouch Morrison and one patient was developed stitch granuloma. There was no bile duct injury and colonic injury. The most common cause of these complications was accidental injury to cystic artery and gross spillage of infected bile.

Conclusion: Bleeding and port site infections were common post-operative complication; the most common cause of bleeding was cystic artery injury whereas the commonest cause port site infection was gross spillage of infected bile.

Key Words: Laparoscopic endoscopy, cholelithiasis, complications

Introduction:

Gall stones are major health problem worldwide in the adult population¹, although the data from within the country is scanty, but the breakthrough of admission date from Karachi shows that it is the 3rd commonest cause of admission according for 16%² and 14%³. Laparoscopic endoscopy is accepted as the procedure of choice for gallstone diseases but like all other procedures it is also not free from unwanted events. Phillip Mouret performed the five video-assisted laparoscopic cholecystectomies in Lyon, France⁴.Laparoscopic Cholecystectomy (LE) has caught the imagination of skepticism to the point where the instrument makers are unable to keep pace with the surgical demand⁵. Laparoscopic cholecystectomy has been generally accepted as the advantages such as reduced hospital stay, earlier recovery, less intra-abdominal adhesions and a better cosmetic outcome⁶. LE can also be performed safely as a day care with a higher incidence of complications^{8,9}. The operation usually requires local anesthesia and is subject to same risks and complications as an open cholecystectomy, in addition to some complications specific to laparoscopic procedure like vascular or visceral injuries, bleeding, common bile duct (CBD) injury etc. The overall frequency of major complications is less than 5%.¹⁰ However, the incidence of complications is strongly related to the experience and recently a decrease in complication rate has been reported.^{11,12} The main aim of this study was to determine the complications of LC and their causes at Muhammad Medical College Mirpurkhas.

Methodology:

Medical records of all patients who underwent LC at Muhammad Medical college Mirpurkhas from February 2008 to January 2016 were reviewed

prospectively. Data recorded included demographic information, medical history, indication for operation, duration of operation, operative findings and reason for conversion, preoperative complications and postoperative complications. Patients having history of jaundice, common bile duct dilatation (>8mm in diameter on ultrasound), cholelithiasis, pancreatitis, bleeding disorders, sepsis, malignancy or hepatitis B or C virus screening test were excluded from the study. Pre-operative work up included a complete blood count, blood urea, blood sugar, liver function test, hepatitis profile, X-ray chest and ultrasound of abdomen. All patients were properly assessed by the anesthetists preoperatively. All patients scheduled for elective cholecystectomy were admitted one day prior to surgery. Informed consent was taken, and patients were fully informed about the nature of procedure, possible risks, complications and possibility of conversion to open procedure depending upon the operative findings. The operation was performed with standard four port technique, using carbon dioxide for peritoneal cavity the verses technique was used to create pneumoperitoneum. Cystic artery and cystic duct were skeletonized and clamped with metallic clips separately. The gall bladder was then dissected from its liver bed and removed through the epigastric port. Irrigation and suction were done in case of bleeding and bile leakage. Drain was placed in sub hepatic space. After decompression of pneumoperitoneum abdominal closure was done with vicryl 2/0 for a rectus sheath and skin closure. Conversion to open procedure was carried with intravenous third generation cephalosporin. Postoperative analgesia was achieved with intramuscular diclofenac sodium 40mg twice a day. All patients had oral liquids in the evening after

operation and were encouraged to proceed with food, provided there was no nausea and vomiting. Any preoperative complications and post-operative complications were noted. Drain was removed after 24 hours of operation, if there was no significant collection. Patients were discharged on after one week if there was problem. Skin sutures were removed on 4th postoperative day. Follow up period were investigated and managed accordingly. The collected data was analyzed with especial reference to the frequencies of the complications and their causes.

Results:

In our study majority 87% patients were female with female to male ratio of 87:13. The mean age was about 38 year with range of 22-60 years. Indications for laparoscopic Cholecystectomy (LC) included acute cholecystitis 20 (20%) demonstrated b ultrasound and symptomatic gallstones 80 (10%). The overall complication rate was 9% whereas the mortality rate was 0%. Bleeding resulted from accidental injury to cystic artery in four patients. Cystic artery injury in three patients were controlled by clipping of cystic artery or pressure by gauze laparoscopically. In remaining one patient with cystic artery injury, bleeding could not be controlled laparoscopically and required conversion to open procedure to control bleeding from damaged cystic artery. One patient was developed abscess in gallbladder bed which was managed conservatively. Four (4%) patient had wound infection of the umbilical port and three had wound infection, had gross spillage of infected bile during extraction of gall bladder. All these patients were managed by antibiotics and local dressings. CBD injury and colonic injury was not observed in our study.

Discussion:

About 10-27% of the adult population of USA has gallstones¹. Complications from LC fall into two categories. Those directly resulting from the laparoscopic intervention like injury from veress needle, trocar injuries etc. and those associated with the operation itself like bile duct injury etc. the rates of complications in LC were much higher during the initial era of laparoscopy, technical limitation being the main reason. Complications can be seen during the creation of pneumoperitoneum especially with veress needle. The incidence of major visceral or vascular injury is rare; but literature does report such injuries. Deziel et al reported⁶ cases of aortic injuries in a study of about 77604 operations. These insertional complications can be further minimized by using open technique for creating pneumoperitoneum. The incidence of CBD injury is strongly related to experience, knowledge and proper of training and a decrease in CBD injury has been reported^{12,13}. Despite the knowledge on mechanism of injury and many

reports which stress the value of preventive measures such as intraoperative cholangiography, the reported incidence still varies between 0-1%¹⁴⁻¹⁵. In this study, the CBD injury was not observed. These injuries can be prevented by adequate surgical experience, careful dissection and proper case selection. However, as surgeon obtains ore experience, the frequency of this complication should decrease. The visceral injury can occur during introduction of veress needle or trocar injuries as well as over judicious dissection of adhesions. Visceral damage may be evident preoperatively or remain unrecognized during operation and later manifest as peritonitis, abscesses or sepsis. In this study, bleeding is a frequently encountered and dangerous complication of laparoscopic cholecystectomy. The bleeding may occur during verses needle insertion, dissection of gall bladder, slippage of clip from cystic artery. In our study, four patients had bleeding. Only one patient needed conversion to open procedure as bleeding was not controlled laparoscopically. Minor bleeding can be controlled by pressure and application of suture or diathermy. Factors contributing to operative site bleeding may include inadequate exposure, acute inflammation, portal hypertension, adhesion, adhesion, coagulopathy and rough technique^{11,12,16} local study^{17,18} has reported bleeding in about 4% of the patients whereas another study by Usal et al¹⁹ reported major vessel injury (aorta, portal vein & inferior vena cava) in about 0.11% of the patients. Wound infection, usually involving the umbilical cannulation site through which the bladder is extracted, occurs in 0.3% -1% of cases.²⁰⁻²¹ in this study. Four patients (4%) developed surgical port site infections, which were managed by simple dressings and oral antibiotics. One of these patients had umbilical stitch granuloma which was managed by opening of the wound, removing subcutaneous stitch and appropriate antibiotics. Wound infection was more common in obese patients. The reported incidence of surgical port site infection varies between 0.5 to 1%.²⁰⁻²² the comparison of complications observed in this study with those observed in literature is mentioned in the Table-I. laparoscopic cholecystectomy is a safe procedure in the hands of a surgeon with adequate exposure. Complications can be reduced to minimum if meticulous principle of dissection is followed. The unwanted events can mostly be managed laparoscopically without conversion. But decision for conversion should be taken early if there is any confusion and thus mortality and morbidity could be reduced. We placed drain in all cases and agreed with the view point of Hawasli²³. We in our series recommend that routine use of drainage of peritoneal cavity in laparoscopic cholecystectomy should be practiced till the learning phase is over and

the surgeon is confident about the intraoperative anatomy and has done minimum possible dissection.

Table: Comparison of Complications

Studies	Bleeding	Port site Infection	CBD Injury	Colonic Injury	Liver Bed collection
Dholia KM24(%)	-	8	4	1	-
Veccho R 26%	0.49	0.25	0.5	0.1	-
Tan JT 27(%)	0.49	-	1.48	-	-
Memon W 18(%)	1.6	1.6	0.9	0.4	-
Current Study (%)	4	4	0	0	1

Conclusions:

The overall complication rate was 9% and these include bleeding and port site infection as the complications. The commonest cause of bleeding was cystic artery injury. The causes of port site infection were gross spillage of infected bile, obesity.

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