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FREQUENCY OF COMPLICATIONS AFTER APPLICATION OF LAPAROSCOPIC CHOLECYSTECTOMY

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Abstract:

Objective: *The aim of this research work is to find out the occurrence of complications of LC (Laparoscopic Cholecystectomy and reasons of these complications in Sheikh Zayed Hospital Rahim Yar Khan.*

Methodology: *This research study was a retroactive work conducted from May 2016 to April 2019. We collected and analyzed the data of all the patients who were undergoing LC in the duration of this study period and they were present in accordance with the inclusion standard of the research work.*

Results: *Two hundred and sixteen patients underwent LC and female patients outnumbered the males. Overall rate of complication was 5.0%. Different complications were bleeding as 1.80% (n: 4) from cystic blood vessel & bed of gallbladder, the infection of port site was 1.80% (n: 4), injury of bile duct in 0.90% (n: 2) and colonic injury in 0.40% (n: 1) patient. The most frequent reasons of these abnormalities were unintentional injury to cystic blood vessel, gross spillage of the bile with infection & mistaken extraction of common duct of bile.*

Conclusions: *Bleeding & the infections of the port site were most frequent problems and injuries of common bile duct & colonic injuries were following these complications. While most common reason behind the infection of port site was infected bile's gross spillage.*

KEY WORDS: *Gallbladder, Bile, Blood Vessel, Frequent, Outnumbered, Bleeding, Injury, Extraction.*

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INTRODUCTION:

The occurrence of the problem of gall stones is very common in whole world. Phillip Mouret was the first person who performed the LC with the assistance of video in Lyon city located in France [1]. The community of the surgical field showed his interest in LC and now the makers of this instrument are unable to fulfill the demand in medical field [2]. LC is the ideal method for the treatment of the disease of gallstones. Different research works have displayed its effectiveness & procedure's safety as well as benefits like decreased stay in the hospital, fast recovery, less adhesions in the abdomen and better cosmetic results [3]. The performance of LC cab be carry out as a day care method [4]. Unluckily, this negligibly invasive method has association with high occurrence of other complications [5, 6].

There is a need of general anesthesia for this surgery and it has the same dangers and complications as present in the case of open cholecystectomy, additionally to few complications associated with only this method as vascular injuries, bleeding from cystic artery and the injury of the common bile duct. Overall rate of occurrence of the complications are lower than 5.0% [7]. Though, there is strong association of the prevalence of these complications with the experience of the professionals and currently, there are some reports about the reduction in the rate of complications [8, 9]. The aim of this research study is to find out the rate of occurrence of complications after the application of LC and reasons behind these complications in Sheikh Zayed Hospital Rahim Yar Khan.

METHODOLOGY:

We reviewed the clinical records of the patients who underwent laparoscopic cholecystectomy at Sheikh Zayed Hospital Rahim Yar Khan from May 2016 to April 2019. The collected information contained data about demography, previous history of the patient, indications for surgery, total surgery duration, findings of the surgery and causes of conversion, complications before surgery & complications after surgical intervention. Patients available with the history of jaundice, dilatation of the CBD, choledocholithiasis, disorders of bleeding, pancreatitis, infections of HCV or HBV and other serious malignancies were not the part of this research work. Work-up before surgery complete count of blood, uric acid, glucose level, electrolytes, tests for the function of liver, profile of hepatitis, chest X-ray and the abdomen's ultrasound.
Anesthetists assessed all the patients before the surgery. We scheduled every patient for elective cholecystectomy one day before the compliance of surgery. We took the written consent from the patients after explaining them completely about the purpose of the current research study. We used the 4-port method in performing surgery with the utilization of the CO2 for the insufflation of the peritoneal cavity. Conversion of the surgery to open method switched because of the complications in some patients. We sent the resected samples of gallbladder for histopathological assessment. Achievement of after surgery analgesia obtained from intra-muscular diclofenac sodium seventy-five milligrams two times in a day. We gave oral liquid to all patients in the evening and encourage them to eat further. We noted the complications before and after the surgical intervention. We removed the drain after twenty-four hours if there was not much collection. We discharged the patients if there was no complication. We removed the sutures after eight days of surgical intervention. The follow up of the patients carried after regular intervals in the OPD of surgical department. The analysis of the data carried out in accordance with the rate of occurrence of complications and reasons behind these problems.

RESULTS:

Two hundred and sixteen patients in which 183 were females and 33 were males, were the part of this research work. Female patients outnumbered the male patients. The average age of the patients was 35.0 years. The two main indications for LC included the acute cholecystitis in 20.0% (n: 42) & symptomatic gall stones in 80.0% (n: 174) cases. Overall rate of complication was 5.0% while rate of mortality was 0%. The most common complication was bleeding present in 1.80% (n: 4) patients. This complication was the result of unintentional injury to cystic vessel in 3 patients and from the bed of gall bladder in one patient. We use surgical methods to control the occurrence of bleeding in these patients but one patient got conversion to open procedure.

The development of the infection of port site occurred in 1.80% (n: 4) patients. Among these, 1 patient was available with the umbilical port infection of wound & 2 patients were present with infection of the epigastric port. The occurrence was the result of obesity and gross spillage of the infected bile. Use of antibiotics and normal dressing were enough for the management of these complications. The 4th patients got the infection of port site whose management carried out after the opening of wound with the extraction of the subcutaneous and proper usage of antibiotics. Injury of common bile duct occurred in 2 patients and in both patients' re-operation carried out and recovery was not smooth. One patient was available with the colonic injury whose identification carried out after

conversion to open procedure and repair of the colonic wall with injury carried out.

DISCUSSION:

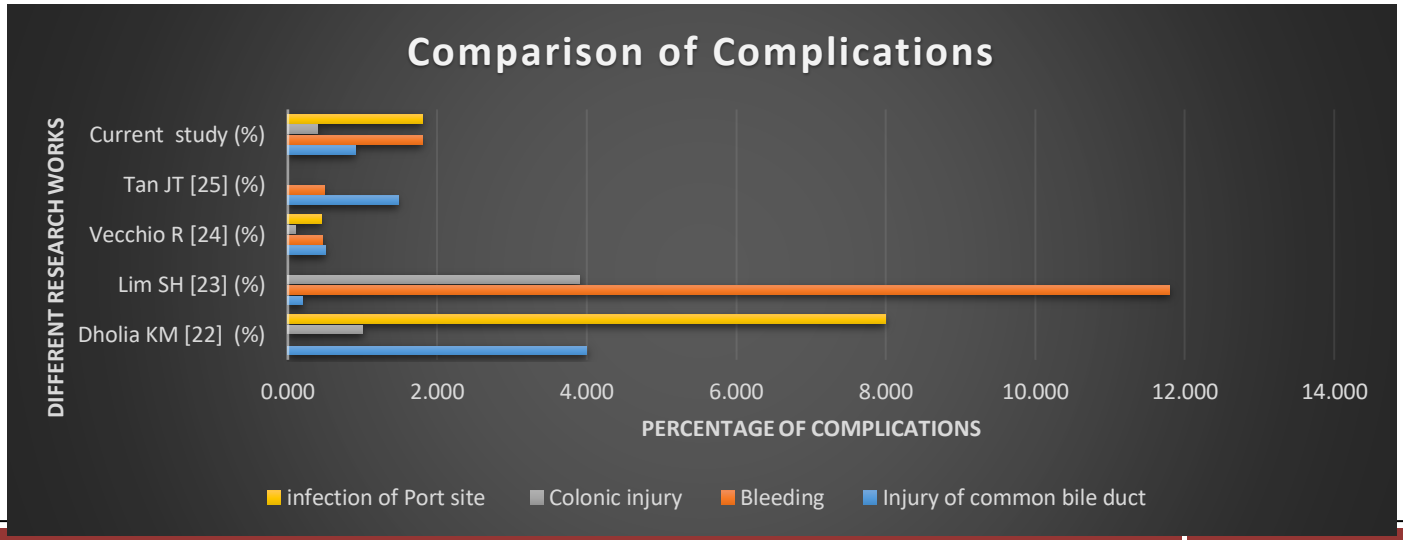
There are 2 categories of the complications due to laparoscopic cholecystectomy, complications because of intervention as injury from needle & trocar injuries and the complication having association with the surgery itself as the injury of the bile duct. The complication rate was much high in the laparoscopic cholecystectomy which decreases with the increase of experience. Deziel [3] stated thirteen patients with the injuries of aorta in his research work of about seventy-seven thousand surgeries. The decrease in this insertional complication is possible with the utilization of the open procedure. The prevalence of the injury of common bile duct has association with the experience and there is a decrease in these injuries [9, 10] according to some reports. Various reports which stress the worth of the preventive procedures as during surgery cholangiography, stated the prevalence still differs between 0 to 1% [11-13]. In current research, we observed the injury of common bile duct in only two patients and recovery of these injuries carried out surgically. With the increase of the experience of the surgeons, the rate of occurrence of this very complication will decrease.

Overall occurrence of the extreme visceral injuries in the process of laparoscopic cholecystectomy was from 0 to 5% in the authentic published reports [3, 7, 9]. Bleeding was the most common complication. Its occurrence is possible during insertion of the veress needle, gallbladder dissection or injury to the cystic blood vessel. In current research, there were four patients with this complication and two patients got conversion to open procedures. Other two patients bleeding stooped after the application of pressure and suture. Different factors causative to bleeding of the surgical site may contain improper exposure, inflammation, rough method, coagulopathy and portal hypertension [8, 9, 14, 15]. One local study [16] reported bleeding in 3.18% patients while one other work by Usal [17] stated the injury of major blood vessels in 0.11% patients. The infection of the wound normally involving the site of umbilical cannulation through which the extraction of the gall bladder carried out, occurs in 0.30% to 1.0% patients [18-20]. The concluded occurrence of the infection of the surgical port site differs from 0.50 to 1.0% [18-21]. The comparison of the rate of complications as concluded by this research work with those stated in the field is present in Table-1.

Table-I: Comparison of Complications

Complication types	Dholia KM [22] (%)	Lim SH [23] (%)	Vecchio R [24] (%)	Tan JT [25] (%)	Current study (%)
Injury of common bile	4.000	0.200	0.500	1.480	0.900
Bleeding	-	11.800	0.470	0.490	1.800
Colonic injury	1.000	3.900	0.100	-	0.400
Infection of Port site	8.000	-	0.450	-	1.800

Chart of Table-1 is well elaborating the comparison of complications as presented by various research works.



CONCLUSION:

Overall rate of complication in this research work was 5.0% and these complications include bleeding & infection of port site as the most common followed by common bile duct & colonic injuries. The most common reason of bleeding was the injury to the cystic artery. Gross spillage of the plague-ridden bile was the cause of infection of port side with obesity.

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