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RESEARCH ARTICLE

LAPAROSCOPIC CHOLECYSTECTOMY, ANALYTIC STUDY.

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Abstract

To assess our experience and to compare it with similar series published in literature with emphasis on the safety, the rate of conversion, the morbidity and mortality of the procedure. From April 2010 to December 2013, the results of 445 patients of laparoscopic cholecystectomy were retrospectively analyzed; the technique of surgery as well as the associated co-morbid conditions, the rate of conversion to open cholecystectomy, and the morbidity and mortality was analyzed and compared to other series. Simple descriptive statistics were used. The average age was 51.26 ± 21.71 years (17 - 84), there were 360 (80.89 %) females and 85 (19.1%) males. Of this study, two patients underwent laparoscopic cholecystectomy while pregnant, 178 out of 445 (40 %) had co-morbid conditions. Conversion to open cholecystectomy was required in 3 (0.67 %) cases and 27 (6 %) had complications but no single biliary tract injury was noted. No mortality was recorded. The average hospital stay was (1.5 ± 1) days. With patience and meticulous technique laparoscopic cholecystectomy is safer and quicker than open cholecystectomy. Our study showed similar and sometimes favorable results in comparison to other studies

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Introduction:-

Cholecystectomy is the treatment of choice for symptomatic gall stones because it removes the organ that contributes to both the formation of gall stones the complications ensuing from them (1).

The morbidity associated with cholecystectomy is attributable to injury to the abdominal wall in the process of gaining access to the GB (i.e the incision in the abdominal wall and its closure) or to inadvertent injury to the surrounding structures during dissection of the GB.

Efforts to diminish the morbidity of open cholecystectomy have led to the development of laparoscopic cholecystectomy (lap chole), and made possible by modern optics video technology.

Carl Langenbach performed the 1st cholecystectomy in, Berlin, Germany in 1882. Eric Muhe performed the 1st lap chole in Germany in 1985 (2). In 1992, 90 % of cholecystectomy in the US was being performed laparoscopically.

Compared with open cholecystectomy, the laparoscopic approach has dramatically reduced hospital stay, postoperative pain, and convalescent time. However, rapid adoption of lap chole as the so called gold standard for

the treatment of symptomatic gall stones disease was associated with complications, including increase incidence of major bile duct injury.

Since the early 1990, considerable advances has been made in instrumentation equipment, a great deal of experience with lap chole has been established worldwide. Of particular significance is the miniaturaization and improvement of optics instruments, which has reduced the morbidity of the procedure by making possible ever-small incision. With proper patient selection and preparation, lap chole is being safely performed on an outpatient basis in many centers (3).

The primary goal of lap chole is removal of GB with minimal risk of injury to the bile duct and surrounding structures. Our aim is to maximize the safety of both routine and complicated cholecystectomies.

The aim of this analytic study is to show the outcome of lap chole in terms of safety, pain control, return to normal life postoperatively, morbidity and mortality of lap chole, comparing it with other worldwide studies.

Materials And Methods:-

This is a retrospective chart review .Overall 445 patients who underwent elective lap chole for benign disease of gall bladder at Al-Fallouja Teaching Hospital between April 2010 December 2013 were evaluated. Lap chole was performed using a standard four ports technique, CO2 pneumoperitoneum. ERCP was performed for 3 patients with choledocholithiasis followed by lap chole.

The conservative treatment consisted of IV infusion, antibiotic treatment, analgesia during acute attack of cholecystitis. Those who respond to conservative treatment operated upon by lap chole after 6 to 8 weeks .Those who didn't respond treated with LC or OC, those with OC were excluded from the study.

The following criteria were evaluated Age, sex, comorbidity, conversion to open chole, duration of hospital stay, complications. Statistical analysis was performed using SPSS .The associations among the different criteria were determined by chi-square.

Results:-

Out of 445 patients admitted with gall bladder diseases undergone LC, 360 (80.89 %) were females, 85 (19.1%) were males (table 1). Age range from 17-84 years .Peak incidence is in the 4th and 5th decade (table 2).

Table 1:- Distribution of patients according to sex

Sex	Number of patient	%
Female	360	80.89%
Male	85	19.1%

Table 2:- Distribution of patients according to age.

Age range (years)	Number of patients	Percentage
15-25	3	0.67%
26-35	42	9.4%
36-45	117	26.2%
46-55	133	29.8%
56-65	74	16.6%
66-69	58	13%
> 69	18	4%

178 out of 445 (40 %) patients had comorbidity (mostly in form of diabetes mellitus, hypertension, and asthma). Two patients were pregnant pass smooth surgery postoperative period. Complications encountered range from simple wound infection to slippage of clip (cystic duct clip) with resultant biliary peritonitis (the patient was re-operated upon by laparotomy, drain left, patient pass a smooth postoperative period).

Bile spillage was encountered in 13 cases intra-operatively which were managed by suction irrigation without any squally. Stone spillage occurred in 5 patients stones were extracted, only one patient developed an epigastric incision sinus was treated conservatively (Table 3)

Table 3:- Complications of laparoscopic cholecystectomy.

Complications	No. of patients	Percentage
Bile spillage into peritoneal cavity	13	2.92%
Stone spillage into peritoneal cavity	5	1.12%
Slipped cystic duct clip	1	0.22%
Wound infection	7	1.57%
Wound sinus	1	0.22%
Major bile duct injury	0	0
Total	27	6

Three cases were converted to open. One patient was male with empyema of gall bladder with excessive adhesions and was heavy smoker. Second one got cholecysto-duodenal fistula, GB removed laparoscopically but duodenum was repaired with open technique. Third case was an old age female with previous surgery for duodenal ulcer got excessive adhesions. Duration of the hospital stay a range from 1-7 days (only the patient with slipped cystic duct clip stay for 7 days).

Discussion:-

LC is the procedure of choice for the treatment of symptomatic gall stone disease. In spite of great advantages of laparoscopic surgery in different studies but still there are many concerns about its possible complications. However, in comparison to open surgery, laparoscopic surgery accounts for less morbidity and mortality (4).

In this study we assess the result of LC in 445 patients of symptomatic gall stone disease. In many studies female preponderance found. In our study we found 80.89% females against 19.1 % males. Ghnnam et al (11) found 92% female against 8% male, while Bahsin et al (5) found 84% female against 16 % male. Mean age of the patients was (52) years. Youngest patient was 17 years old, older one was 84 years. Other studies show nearly the same results. However, other studies show a range of 30-40 years (6).

Biliary complications are reported in many studies (7-14).The extrabiliary complications do occur with almost the same frequency and severity but tend to be under reported in literature (15).

In our study the rate of complications was 6% including bile spillage into the peritoneal cavity intra-operatively. Now bile spillage is no more considered as a complication. With exclusion of bile spillage overall complication rate falls to 2%. In different studies, it is reported between 5- 12 % (11, 13, 16, 17).

The prevalence of common bile duct injury following LC is higher than OC and can result in horrible postoperative morbidity and mortality (18). In this study, no single major bile duct injury was reported. The single major complication in our study was slipped cystic duct clip with resultant biliary peritonitis and was treated by laparotomy and drainage only.

There is low risk of surgical site infection in LC, because of small wound size and less tissue trauma. In our study the rate of wound infection was less than 2%. Other studies showed a rate of 2-4 %. (19, 20).

Uncontrolled bleeding, intraoperative bile duct injury, bile leakage, dense adhesions are the main causes for conversion to OC. Large series from Nottingham(18) Scotland (18) reported conversion rate of 15-20% this probably a closer reflection of general surgical practice, while it has been suggested that conversion rate fall with increasing experience.(21). In our study, only three cases (0.6%) were converted to open, two because of dense adhesions and one because of cholecysto-duodenal fistula. In this study 40% of the patients had comorbidity (in form of DM, hypertension, asthma). All were well controlled pass a smooth peri-operative period, two cases were pregnant. Although it is recommended that patients should be followed up for at least one day postoperatively to check for possible complications, some studies show that LC can safely be done as one day outpatient procedure, if

there is no evidence of peri-operative complication (22, 23). In our study the mean length of hospital stay was (1.5 ± 1) days, which is almost similar to other studies (1-4 days) (24, 25, 26-28).

Conclusion:-

This study proved that LC is associated with excellent results for the patient, safe procedure with high success rate, less complications, less postoperative pain, shorter hospital time, better cosmesis and faster return to normal life.

So if the procedure is performed by the most experienced surgeon with appropriate patient selection improved technology, the rate of morbidity and mortality will be decreased dramatically. Our results are comparable with other worldwide studies.

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