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RESEARCH ARTICLE

Laparoscopic Cholecystectomy with and without use of Drain in Selected Cases

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Gall stones and Cholecystitis are very common pathologies in surgical practice, laparoscopic cholecystectomy nowadays is the preferred procedure to remove the gall bladder since established in 1987. This is prospective study done in Al- Imamain-Al-kadhimain medical city/Al-Kadhimiya teaching hospital / department of general surgery where more than 400 laparoscopic Cholecystectomy are done per year.

Objective: to evaluate the real need of draining the site of uncomplicated laparoscopic Cholecystectomy (lap.chole.).

Methodology: this is a comparative prospective study done in department of general surgery /Al –Kadhimiya teaching hospital between January 2010 and December 2011, at this time 400 cases of lap. chole. were Done by a team of four surgeons for patients with gall stones 72 males and 328 females. All these cases were uncomplicated gall stones and the rate of conversion to open surgery was zero. The patients were followed (after divided into 2 groups: group **A** without drain consist of 150 patients and group **B** with drain consist of 250 patients) for mortality, morbidity, infection, post operative pain and intra peritoneal collection.

Results: Male to female ratio was approximately 1:4 . Age ranging between 22 and 73 years (mean: 47.5 year). Hospital stay was 3-4 days including operative day in group **B** patients while it was 2-3 days including operative day in group **A** patients. There was increasing post operative pain and drain site infection in group **B** .there was no mortality in both groups of patients.

Conclusions: there is no need to put a drain at the site of laparoscopic Cholecystectomy routinely unless there is anticipated complication or need to monitor the operative site as it increases post operative pain, wound infection and hospital stay

Introduction

Cholecystitis and gall stones are the commonest biliary tract disease in surgical practice that requires surgical intervention for total cure [1,2]. Conventional cholecystectomy was the treatment of choice for more than 100 years, but laparoscopic cholecystectomy is currently the preferred method of treatment of symptomatic gallstones since its establishment in 1987[3]. Drainage of peritoneal cavity has long remained an important part of both types (open + laparoscopic) to find out any bile leak, blood or exudates resulting from surgical trauma [4,5]. Even if they do not drain these fluids completely, they warn the surgeons about such leakage [6] .on the other side small amounts of fluid

are effectively absorbed by the peritoneum without need for drains, and drain blockage or kinking may make it ineffective even for large amounts of biliary leak or bleeding[7].

Drains have been incriminated in number of complications [8,9]:

1- Infection of sterile collection.
2- Secretion of serous fluid.
3- Pressure effects on surrounding structures
4- Intestinal fistula.

With the view of easier convalescence, shortened hospital stay and lower complication rate (previous believe) many surgeons still use drains routinely after simple elective laparoscopic and open cholecystectomy [10].

Generally speaking opinion and practice of laparoscopic surgeons vary from routine drainage, to drainage in selective cases extending to no drainage at all [11].

The results of recent studies showed no benefit with the routine use of intra abdominal drains, after both open as well as laparoscopic cholecystectomy, instead, the use of drains is found to be associated with increased rate of post-operative pain and wound infection [12].

Patients and methods:

The prospective study was done in the department of general surgery in Al-Imamain Al-kadhimain medical city (formerly al –Kadhmiya teaching hospital) between January 2010 and December 2011 (over period of 2 years including 400 patents, all of them have gall stones (no cases of acute Cholecystitis or empyema or other complications of gall stones), all operations done by expert surgeon, assisted by final year board candidate (expert S.H.O) . the average operative time was 40-60 min[13] . The rate of conversion to open cholecystectomy was zero. Surgical clips used to control cystic duct and artery, drains were left because of:

1- Surgeon preference.
2- Minor bleeding from the bed of gall bladder.
3- Obese patients.

The number of patients with drains was 250 patient and those without drains was 150 patients. The drains used were simple tube drain and some time suction drainage (redi-vac. drains) was used, for no specific reason but availability.

The hospital stay was 2-3 days in group **A** patients and 3-4 days in group **B** patients depending on general condition of patients (patients were usually discharged from hospital after bowel evacuation and removal of drains). During hospitalization the patients were watched for abdominal pain, Wound pain, fever, wound discharge, general health [14].

After discharge from hospital the patient were instructed to come to remove sutures **7** days after operative day, abdominal sonography one month and six months after operative day for evaluation of intra peritoneal complications [15].

Only 234 patients followed the instructions completely (for both 2-steps sonography examination; majority of them from group A)

Results:

Fourhundred cases of laparoscopic cholecystectomy were studied over a period of two years in Al-imamain Al-kadhimain medical city for wound infection, pain in the site of drain, intra-abdominal pain, post operative pyrexia, amount of fluid collected in the drain, hospital stay, early and late post operative intra abdominal complications after dividing them into two groups: group A without drain and group B with intra-abdominal drain:

Four hundred patients were included in this study 72 males (18%) and 328 female (82%). The ratio was approximately 1:4. The age of the patients ranged from 22 to73 years old (mean was 47.5 years).

Group **A**: no drain left, 150 patients.

Group **B**; drain left, 250 patients.

1- Wound Infection found in 3 patients (2 %) of group A while it was 12 patients (4.8 %) of group B .

2- the amount of collection in the collecting bag prior to drain removal was ranging from (50 -70) ml in group B patients.

3- post operative pyrexia : orally placed thermometer measuring (38 -39)˚C.

4-post operative abdominal (intra-peritoneal) collection was monitored in both groups (A and B) by abdominal sonographic examination one month later (stressing on group A) was 0- few milliliters (negligible) .

5- no injury to abdominal viscera was recorded in both groups .

6- leakage of peritoneal fluid from drain site was recorded in 14 cases (5.8 %) of group B. patients.

The range of hospital stay was 2 days in group A and 3 days in group B.
The operative time was ranging between 40 -60 minutes .
Rate of conversion to open cholecystectomy was zero
The summary of results are shown in table 1

Discussion

The use of drain following the operations of cholecystectomy whether it is classical or laparoscopic is a traditional step in these operations used to be done for decades without solid scientific base other than observation for bleeding or biliary leak or visceral injury during these operations [16].

Recent studies reported that there are many complications due to the effect of putting drains during both classic and laparoscopic surgery; these complications were [17]:

1-increase the risk of both intra-abdominal and wound infection wound infection was > in group B due to presence of F.B. specially in diabetic patients.
2-increase of intensity of wound and abdominal pain.
3-risk of injury to abdominal viscera during putting and removal of the drain
4-increased hospital stay.

In this study we notice 1- that drains increase risk of wound infection due to the presence of foreign body, and the movement of the drain through it's site (port) lead to increase the diameter of its original wound ,this may lead to leakage of peritoneal fluid which may be infected and increase the risk of wound infection and pain .2- the pain at site of drain wound (5 mm port) may increase due movement of the drain , stepping by patient or pulling (walk and turning in the bed) and leakage of the peritoneal fluide (irritation or infection) [18].

3- Increase the risk of both intra abdominal. And wound infection due to presence of drain which acting as foreign body , our study agrees with this fact as wound infection (group A :2% , group B: 4.8%).[19]

4-We noticed also that there is increase in abdominal pain in group A unlike other studies, which may be due to incomplete drainage of peritoneal cavity prior to closure , due to irritation of raw surface at gall bladder bed or presence of amount of CO_2 .

5- still there is theoretical risk of injury to abdominal viscera during putting or removal of drain although no cases were reported in this study or similar studies [20] .x

Table (1)

Criteria	Group A/ no drain(150)	Group B /with drain (250)
Wound infection	**3 (2%)**	**12 (4.8%)**
Drain site pain	**0**	**26 (10.4%)**
Amount of collection	**0**	**(50-70)ml**
Post operative pyrexia	**13 (8.7%)**	**22 (8.8%)**
Abdominal collection	**0**	**0**
Upper abd. Pain	**10 (6.7%)**	**12 (4.8%)**
Injury to abd. Viscera	**0**	**0**
Leakage from drain site	**0**	**14 (5.6%)**
Hospital stay	**2 day**	**3 day**

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