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TWO PORT MINI LAPAROSCOPIC CHOLECYSTECTOMY AND ITS OUTCOMES IN 33 PATIENTS.

General Surgery

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ABSTRACT

BACKGROUND: Cholecystectomy is the most common operation of the biliary tract and the second most common operative procedure performed today. Laparoscopic cholecystectomy decreases postoperative pain, allows earlier oral intake, shortens hospital stay, enhances earlier return to normal activity, and improves cosmesis. Several studies have demonstrated that less postoperative pain is associated with a reduction in number of ports.

OBJECTIVE: This is the observational prospective study for presentation of outcomes of two port laparoscopic cholecystectomy in 33 patients admitted in Department of General Surgery, SMIMER HOSPITAL, SURAT from 1 January 2018 to 31 October 2018.

METHODS: It is a prospective randomized study conducted for duration from 1 january 2018 to 31 october 2018. Patients were diagnosed Gallbladder stones who were fullfilling inclusion criteria were included in our study after taking consent. After pre anesthesia fitness, all patients were subjected to laparoscopic cholecystectomy.

RESULTS: The new approach was used in 33 patients. Surgery was performed conveniently and successfully, with smooth and uneventful recovery. The average operating time was 62 minutes. No procedure related complication occurred neither any conversion was required.

KEYWORDS

INTRODUCTION:

Cholecystectomy is the most common operation of the biliary tract and the second most common operative procedure performed today.

Newer modifications include: Reduced port cholecystectomy (2 port) as well as SILS (single incision laparoscopic surgery) / SSMP (single site multiport) using a single umbilical port system have been routinely performed nowadays.

NOW Laparoscopic cholecystectomy is the gold standard care for the treatment of symptomatic gallbladder disease [4,5,57,.]

Several studies have demonstrated that less postoperative pain is associated with a reduction in number of ports. We studied advantage and disadvantage of 2 port laparoscopic cholecystectomy in our setup in regard to intra operative complication, operative time, conversion rate, post operative complication, post operative requirement of analgesia, hospital stay and improved cosmetics.

MATERIALS AND METHODS:

All patients admitted with signs and symptoms of cholelithiasis were subjected to detail history, through clinical examination, abdominal ultrasonography and X–rays, and routine blood investigation. Patients were diagnosed Gallbladder stones who were fulfilling inclusion criteria were included in our study after taking consent.

After pre anesthesia fitness, all patients were subjected to laparoscopic cholecystectomy. Preoperative all patients were catheterised using Foley's catheter and a nasogastric tube was inserted. All patients were operated under general anesthesia.

ENROLLMENT CRITERIA

Inclusion criteria:

- patients age between18 to 70yrs
- Preoperative diagnosis of gall bladder stones
- Patients willing for laparoscopic surgery
- Patients suitable for elective laparoscopic surgery

Exclusion criteria:

- Age <18 years.
- Acute cholecystitis.
- High anaesthetic risk.
- Patient with suspected Mirizzi syndrome.
- Common bile duct stone
- Empyema of gall bladder
- Portal hypertension.
- Malignancy of biliary tree.
- Any medical contraindication for surgery.
- Post ERCP patient
- Patients having diabetes mellitus and other metabolic disorder

Two-Port Mini LC

At first port sites are infiltrated with 2% sensorcaine. Following the placement of 10mm umbilical port by open method, a 10-mm epigastric port was placed. Straight/curve needle of polyamide no-1 is introduced through anterior abdominal wall at just below costal margin/last inter costal space in anterior axillary line (in accordance to intra peritoneal findings of GB and liver) and passed through the fundus of gall bladder and pulled out through anterior abdominal wall just near entry point. Extra corporeal knot is being applied externally to retract the gall bladder. After that straight/curve needle of polyamide no1 is introduced through anterior abdominal wall 5cm above and lateral of epigastric port and passed through Hartman pouch and knot is applied over there and the needle is passed through abdominal wall in mid clavicular line 10 to 12 cm below costal margin. By applying varying traction on both ends of infundibular threads appropriate exposer of Calot's triangle is achieved. Using the standard bipolar Maryland laparoscopic instrument, the cystic duct and artery were dissected. Both cystic duct and artery were clipped and ligated and gallbladder specimen was retrieved through the epigastric port.

At completion, the port site was infiltrated with 1 ml of 0.25% bupivacaine as local anesthetic in both methods. If in any patient, for any reason, there was difficulty in proceeding with two ports, additional port(s) was used or if necessary the procedure was converted to open cholecystectomy by standard open cholecystectomy through sub-hepatic incision depending upon the choice of surgeon & concomitant pathologies present. The patients were followed up for 30 days after discharge.



Instruments for 2 port LC

RESULTS:

1) mean age was 35.81 + 16.1 years .
2) Gender disturbance in the study population-96.97% were female.
3) USG findings

USG finding	2 port	Percent
Single calculus	13	39.40
Multiple calculus	20	60.60
Total	33	100

4) Duration of surgery-Mean time of 62.09+10.6 min
5) CONVERSION RATE

	No OF CASE	PERCENTAGE
2 PORT TO OPEN CHOLECYSTECTOMY	0	0

6) SPECIFIC INTRA OPERATIVE COMPLICATIONS

COMPLICATION	2 PORT	PERCENTAGE
Hemorrhage	1	3.03
Perforation of GB/bile duct injury	0	0
Bowel injury	0	0
Vascular injury	0	0
Lateral port injury	0	0
No complication	32	96.97
Total	33	100

7) The mean postoperative pain (vas) at 24 hours is 5.06±1.5.
8) The mean postoperative pain (vas) at 48 hours is 3.75 ± 2.0.
9) Postoperative analgesia (mean) is 169.69±145.64.
10) All patients were mobilized on day 1.
11) Mean hospital stay is 3.52+1.0 days.
100% patients join work within 5 days.

DISCUSSION:

Age at presentation:

Ayman M. Elwan[5] et al in 2013 performed a study in which, mean age was 33.80 ± 10.26.

S.Sreenivas[6] et al, in 2014 ,performed a study of 116 patients, in which mean age was 37.04±116 .

In our study, mean age was 35.81 ± 16.1 years.

Sex distribution:

Ayman M. Elwan[5] et al in 2013 performed a study in which, group had 11(31.4%) male and 24(68.6%) female.

S.Sreenivas[6]et al, in 2014 ,performed a study of 116 patients, in which group had M:F was 4:51.

Wani M[9] et al in 2014 performed a study in which 200 cases were taken; Out of 200 cases, 39 were males and 161 were females with male to female ratio was 1:4.

In our study, group consisted of 1 male (3.03%) and 32 females (96.97%).

USG Findings:

Wani M[9] et al in 2014 performed a study in which 200 cases were taken; In 55 patients, ultrasonography revealed a single calculus in the gallbladder (22 in the two-port); the rest of the patients had multiple stones (78 in two-port and 67 patients in two port group). As regards the wall thickness, 5 patients had a wall thickness of >4 mm (2 in two-port group).

In our study, 26 patients had a single calculus in gallbladder (13 in two port); rest of patients had multiple stone (20 in two port group). As regards to wall thickness, 14 patients had oedematous GB wall and 19 patients had normal GB wall thickness.

Duration of Surgery:

S H WAQAR[4]et al in 2009 presented a study in which mean operation time was 50 minutes.

Ayman M. Elwan[5] et al in 2013 performed a study in which, the mean operative time 39.142 min.

Wani M[9] et al in 2014 performed a study in which the mean operative time was 46.66 ± 14.47 minutes.

In our study, the mean operative time required, was 62.09 ± 10.6 minutes. In initial period, some cases required more operative time (70 min in one case) due to extensive adhesion and learning curve and in later period with more experience the operative time was reduced to 35 min in one case.

Conversion rate:

S H WAQAR[4]et al in 2009 presented a study, in which all procedures were completed successfully and no extra port or conversion to open procedure was required.

Ayman M. Elwan[5] et al in 2013 performed a study in which no conversions were made so it was concluded that two port LC did not affect the procedure's safety and conversion rate.

S.Sreenivas[6] et al, in 2014 ,performed a study of 116 patients in which One patient required open cholecystectomy (0.18%).

In our study, one patient in two port group was converted to four port Laparoscopic Cholecystectomy whereas no case was converted to open cholecystectomy.

Intra operative Complications:

S.Sreenivas[6] et al, in 2014, performed a study in which the incidence of intra-operative complications such as bleeding from liver bed [3 (5.45%)] and stone spillage [11 (20%)] were documented; however, there was a single event of CBD injury, which was recognised intra-operatively and repaired.

Peter DS Kharoing[8] et al in 2016, performed a study in which intraperitoneal spillage of gall bladder contents was seen in some of the cases. The reason for this may be the saline irrigation that was done in those cases.

In our study, no any intraoperative complications documented.

Postoperative Pain:

Ayman M. Elwan[5] et al in 2013 performed a study in which, the severity of postoperative pain was mild in 22 patients (62.85%), moderate in 12 patients (34.28%), and severe in one patient (2.85%).

S.Sreenivas[6] et al, in 2014 ,performed a study of 116 patients, in which the average pain scores at 24 and 48 hours was 1.64 ±1.095.

Wani M[9] et al in 2014 performed a study in which the mean postoperative pain at 24 hours was 3.71 ± 1.409.

In our study, the mean postoperative pain (vas) is 5.06 ± 1.5 at 24 hours and 3.75 ± 2.0 at 48 hours.

Postoperative need for analgesia:

Ayman M. Elwan[5] et al in 2013 performed a study in which it was concluded that two port Laparoscopic Cholecystectomy needed less analgesia.

S.Sreenivas[6] et al, in 2014 ,performed a study of 116 patients, in which the parenteral analgesic requirement (i.m. diclofenac 75 mg) in the two port mini Laparoscopic Cholecystectomy was significantly lower.

In our study, two port laparoscopic cholecystectomy needed less parenteral analgesia.

Postoperative mobilization:

In our study, all patients were mobilized on day 1.

Postoperative oral feeding:

S H WAQAR[4]et al in 2009 presented a study in which oral feeding was started after 4 hours.

Wani M[9] et al in 2014 performed a study in which oral feeding was started after 6.04 ± 0.7236 hours.

In our study, oral feeding was started on postop day 1 in all patients.

Postoperative complication:

S H WAQAR[4]et al in 2009 presented a study in which no postoperative complication was reported.

Ayman M. Elwan[5] et al in 2013 performed a study in which no postoperative complication was reported.

In our study, no postoperative complication was reported.

Insertion of Abdominal Drain and Removal.

K Rajkhova[7] et al in 2016, performed a study in which no drains were placed.

Wani M[9] et al in 2014 performed a study in which sub-hepatic drains were placed in 5 patients, due to difficult dissection. In view of adhesions and increased wall thickness, the gall bladder perforations during surgery caused spillage of bile and stones. After saline washes and retrieval of stones a drain was left in the sub-hepatic region.

In our study, no any drain was placed in two port laparoscopic cholecystectomy.

Hospital Stay:

S H WAQAR[4] et al in 2009 presented a study in which, Hospital stay was one day.

K Rajkhova[7] et al in 2016, performed a study in which hospital stay was 6 days.

Peter DS Kharoing[8] et al in 2016, performed a study in which the hospital stay was 1.862 days.

Wani M[9] et al in 2014 performed a study in which hospital stay was 1.68 ± 0.7769 days.

In our study, the mean hospital stay is 3.52+1.0 days.

Return to work:

S.Sreenivas[6] et al, in 2014 ,performed a study of 116 patients in which the patients' return to daily activities at home was faster by almost one day and was statistically significant (5.17 days).

In our study, the mean days to return to normal day to day activity is 4.58 + 1.0 days.

CONCLUSIONS

Reduced port cholecystectomy is technically feasible and may further improve the surgical outcomes in terms of postoperative pain, hospital stay and better cosmetic value. Reduced port laparoscopic cholecystectomy has now replaced conventional laproscopic cholecystectomy as the treatment goal for gall stones unless there are contraindications to laparoscopic approach.

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