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RESEARCH ARTICLE

CHOLECYSTCTOMY DURING LAPAROSCOPIC SLEEVE GASTRECTOMY IN MORBIDLY OBESE PATIENTS.

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Abstract

Laparoscopic cholecystectomy (LC) in bariatric patients may be technically challenging due to suboptimal port placement and difficult body habitus. Often the gallbladder is engulfed by the large liver and is difficult to dissect laparoscopically. The aim of the study is to evaluate Concomitant cholecystectomy and LSG in 18 morbid obese patients with proven gall bladder pathology regarding the intra-operative and early short-term post-operative outcomes. The operative time ranged from 118 to 192 min. with mean duration 151.56 ± 21.11 min. time of cholecystectomy within same operations ranged from 34 to 62 min. with mean duration 47.72 ± 7.87 min. Most of surgeons preferred to start with sleeve gastrectomy leaving cholecystectomy at end of the procedures. One or two additional trocars were placed in the right upper quadrant to complete cholecystectomy during LSG. Concomitant cholecystectomy can be applied to all LSG patients with proven GB pathology. It adds not more than one hour to the operation time without an increase in morbidity or length of hospital stay.

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Introduction: -

In the last decade, bariatric surgery has been widely used in the treatment of morbid obesity. Gallbladder disease, especially gallstones is one of the most common comorbidities related to obesity.⁽¹⁾ Concomitant laparoscopic cholecystectomy (LC) in patients undergo bariatric surgery may be technically challenging due to suboptimal port placement and difficult body decubitus. Often the gallbladder is engulfed by the large liver and is difficult to dissect laparoscopically. Furthermore, it is accompanied by potential risks such as lengthening of operative time, increased morbidity, and prolonged hospitalization.⁽²⁾ Most surgeons perform a cholecystectomy at the time of bariatric surgery only for patients with both pathology and symptoms consistent with biliary disease. The aim of this study was to evaluate Concomitant cholecystectomy and LSG in morbid obese patients with proven gall bladder pathology regarding the intra-operative and early short-term post-operative outcomes.

Materials and Methods: -

This study was carried out on 18 morbidly obese patients in the Gastrointestinal Surgery Unit of The Alexandria Main University Hospital. All operations were performed under general anesthesia. Conventional laparoscopic cholecystectomy was done before or after sleeve gastrectomy in the same session depending on the surgeons' preference. However, most of cases in this study underwent cholecystectomy after sleeve gastrectomy.

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Postoperatively, all the patients were assessed postoperatively as regards the length of postoperative hospital stay, postoperative complications such as hemorrhage, biliary injury, stricture, leakage, Collection formation, intra-abdominal abscess, elevation of white blood cell count, Fever $>38^{\circ}\text{C}$, wound infection, Jaundice. Follow up of all patients for any intraoperative or early postoperative (30 days after the operation) event that altered the clinical course such as complications of laparoscopic cholecystectomy (bile duct lesions, bleeding, and abdominal collection), pneumonia, additional procedures and re-admissions.

Results:-

The mean age of patients was 32.72 ± 6.25 years. Female patients represented the main population of this study (15 out of 18 patients 83.3 %), which is similar to most of the published studies. The distribution cannot be just explained by the higher incidence of obesity and gall stones among females but it seems that female obese patients are more subjected to psychological problems and are more concerned than men about the cosmetic aspects.⁽³⁾ Preoperative BMI ranges from 40.1 to 49.3 kg/m^2 with mean $43.42 \pm 2.57\text{kg/m}^2$. The operative time ranged from 118-192 min. with mean duration 151.56 ± 21.11 min. Time of cholecystectomy within same operations ranged from 34 – 62 min. with mean duration 47.72 ± 7.87 min, while time of sleeve gastrectomy ranged from 82 to 136 min. with mean duration 103.83 ± 15.3 min.

One or two additional trocars were placed in the right upper quadrant to complete cholecystectomy during LSG. Two patients (11.1%) underwent their surgery with standard 5 trocars. 15 patients (83.3%) needed an additional one trocar while one patient (5.6%) needed two trocars. Most of surgeons in our study preferred to start with sleeve gastrectomy [15 out of 18 (83.3%) patients] leaving cholecystectomy at end of the procedures.

Regarding intraoperative mishaps, in our study, three patients had gall bladder rupture, irrigation and suction was done in the surgical field. Two patients had cystic artery haemorrhage, identification of source of bleeding and clipping of cystic artery was done followed by drain insertion. Also, dissection of GB was more difficult in three patients due to intra-hepatic position of the GB. Two cases suffered from staple-line bleeding after removal of the calibration tube. The bleeding was stopped by clipping the staple-line. One case suffered from splenic capsule injury which was solved by application of absorbable hemostat (Surgicel®). No conversions to laparotomy were necessary. There was no mortality in our studied patients.

Regarding early (<30 days) postoperative surgical complications, no major complications happened in the current study. While 9 cases suffered from minor complications, 2 of them had trocar site infection which was treated by antibiotic and dressing. One patient suffered from persistent vomiting after resuming soft diet. She stopped soft diet, returned to fluids for a while, and treated by proton-pump inhibitors and prokinetics drugs until vomiting stopped. Another patient had partially loculated collection in the subhepatic space that resolved completely with conservative treatment. Three patients had elevated WBC, 2 of them due to chest infection. 6 patients suffered from postoperative fever not exceeding 38°C .

Two patients (11.1%) discharged after 3 days of surgery, 9 patients (50%) discharged after 4 days, 6 patients (33.3%) discharged after 5 days and 1 patient (5.6%) stayed for 6 days due to delayed oral intake and drain output more than 100 cc. So, the time of hospital stay ranges from three to six days with mean of 4.33 ± 0.77 days.

Discussion:-

Gallbladder disease, especially gallstones is one of the most common comorbidities related to obesity.⁽¹⁾ As in the general population, biliary colic (symptomatic cholelithiasis), acute and chronic cholecystitis, biliary pancreatitis, choledocholithiasis and stone-related complications can occur.⁽⁴⁾ All health policies aimed at reducing the incidence of obesity worldwide will decrease the incidence of gallstones and gallstone-related complications.⁽⁵⁾

Concomitant laparoscopic cholecystectomy (LC) in patients undergo bariatric surgery may be technically challenging due to suboptimal port placement and difficult body decubitus, Often the gallbladder is engulfed by the large liver and is difficult to dissect laparoscopically.⁽²⁾

Management options of the gallbladder during bariatric surgery is still a matter of debate. Therefore, the timing of cholecystectomy in these patients remains a subject of debate. There are several approaches about the management of GB during bariatric surgery, including selective concomitant cholecystectomy only after, pre- or intra-operatively

detected GB pathologies. Some surgeons prefer prophylactic cholecystectomy for all obese patients. Others prefer conventional cholecystectomy when both gallstones and symptoms develop after the bariatric surgery. Opponents of concomitant cholecystectomy claim that it is associated with longer operation time, prolonged hospital stay and higher complication rates. However, most authors favor, as we do, selective cholecystectomy only after preoperative confirmation of gallstones.^(2,6)

Coşkun et al.⁽⁶⁾ studied 48 patients with mean operative time of Cholecystectomy 49.1 ± 27.9 min (range 15-110 min) and 108.1 ± 33.3 min for sleeve gastrectomy. One additional 5-mm trocar was placed in the right upper quadrant in all patients. At first, retrograde cholecystectomy was performed by using electrocautery. After completion of cholecystectomy, all patients underwent a standard LSG with five or six trocars. There was also no difference in the length of hospital stay by performing concomitant cholecystectomy. The mean length of hospital stay was 3.56 ± 0.9 days. Histopathological analysis of GB revealed chronic cholecystitis and adenomyomatosis in 14 and two patients, respectively.⁽⁶⁾

On the other hand, in the study Raziel et al.⁽²⁾ a total of 2,708 patients underwent LSG. 145 (5.4 %) had a previous cholecystectomy were excluded. Of the remaining 2,563, 180 (7 %) had symptomatic gallbladder disease, underwent LSG with simultaneous cholecystectomy and were the study group. The remaining 2,383 patients had LSG and were the control group. Surgery duration was prolonged by 35 min due to concomitant cholecystectomy and had no effect on hospitalization time. Cholecystectomy was carried out in a routine, anterograde or retrograde approach as deemed safest, after completion of the LSG, utilizing the same ports. An additional 5-mm port was occasionally added for retraction. Median length of hospital stay was 2 days. There were no mortalities in either patient group.⁽²⁾

In another study, Lee et al.⁽¹⁾ studied 38 patients underwent simultaneous cholecystectomy during bariatric surgery. None of the patients had a history of gallbladder-related symptoms. The Glissonian approach was performed in 13 patients (11 during LRYGB and 2 during LSG) and the conventional procedure in 25 patients (16 during LRYGB and 9 during LSG). Operative time in the conventional approach group was slightly longer than in the Glissonian approach group (154.8 ± 35.5 minutes [range 90-220] vs 148.1 ± 36.9 minutes [range, 105-210]). Six trocars were used, and, when necessary, an additional 5-mm trocar was inserted into the right subcostal area, to proceed with conventional cholecystectomy. In contrast, no additional trocar was needed during the Glissonian approach. No significant differences were observed in amount of blood loss, and hospital stay between the 2 groups. The mean length of hospital stay for those who underwent conventional clipping cholecystectomy was 2.8 ± 3.3 days while it was 2.9 ± 1.7 days for those who underwent Glissonian approach.⁽¹⁾

Tarantino et al.⁽⁷⁾ recommended adding one more trocar in all patients at the right upper quadrant and performing cholecystectomy at the beginning of the operation when the level of patience was still high and the surgeon was not exhausted by the highly demanding surgery. Therefore, it is suggested to perform cholecystectomy first and apply at least one more trocar placement during cholecystectomy with LSG.⁽⁷⁾

Conclusions:-

Concomitant cholecystectomy is safe and feasible during LSG, it can be applied to all patients with proven GB pathology. Although an increase in operative time may be an important issue, Concomitant cholecystectomy can be performed during LSG without an increase in morbidity or length of hospital stay.

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