LAPAROSCOPIC VERSUS OPEN CHOLECYSTECTOMY FOR ACUTE CALCULOUS CHOLECYSTITIS;WHICH IS BETTER?

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ABSTRACT:

Background: Laparoscopic cholecystectomy (LC) has become the treatment of choice for elective cholecystectomy, but controversy persists over use of this approach in the treatment of acute calculous cholecystitis.

Aim of the study: To assess the feasibility, safety, and outcome of laparoscopy in management of patients with acute calculous cholecystitis and to determine whether it is a boon or bust in comparison with open cholecystectomy (OC).

Patients and Methods: This study included 84 patients (38 males and 46 females) who met criteria for acute calculous cholecystitis. Their age ranged from 19 to 65 year with average of 47 years. They were randomized to be treated by LC (40 patients) or OC (44 patients). Operation time, postoperative pain, length of hospital stay, intraoperative and postoperative complications were the main outcome measures used to compare the two studied groups. In LC group, the rate and reasons for conversion to OC were also studied.

Results: The two randomized groups were similar in demographic, physical, and clinical characteristics. There was no significant difference in the operation time between LC and OC (89.9 min±19.9 vs. 83.9 min±18.2, *P:* 0.2). Postoperative analgesia was better in the LC than in the OC with median score (VAS) of 2 points vs. 4 points in the two groups respectively and the mean analgesic requirements was 160mg±40 vs. 240mg±60 in the two groups respectively (*P:* 0.0004). The length of hospital stay for patients who underwent successful LC was significantly shorter than the open group (2.2 days±0.82 vs. 6.4 days±1.6, P*:* 0.0001). Operative complications were higher in the LC group than in the OC group. By far the commonest was gallbladder perforation with spillage of bile and or stones (25%). Bleeding occurred in five patients in the LC group (12.5%) and in two patients in the OC group (4.5%). There were no deaths or bile duct injuries in either group. Postoperative complications were higher in the OC than in the LC. By far the commonest were wound related complications (11.4%). Wound sepsis occurred in five cases in OC group (11.4%) and in two cases in LC group (7.7%). Incisional hernia and intestinal obstruction each occurred in one case in the OC (2.3%). In LC group, 14 patients required conversion to OC (35%), in 10 of them (71%) the cause was obscure anatomy and dense adhesions of inflammation. Male gender represents the majority of converted cases (64%).

Conclusion: LC is feasible and safe method for treatment of patients with acute calculous cholecystitis,. However it is not without risks and might not be suitable for every patient.

KEY WORDS:

Laparoscopic cholecystectomy Acute cholecystitis.

INTRODUCTION:

Acute cholecystitis is one of the most frequent emergency admissions to general surgical services with 50% to 70% of cases occurring in elderly patients[1, 2].

Surgical treatment of symptomatic gall stones has completely changed since the successful advent of laparoscopic surgery[3].

Acute cholecystitis was initially considered a relative contraindication for laparoscopic cholecystectomy (LC)[4,5]. Many clinicians felt that the inflammation, edema, and adhesions associated with acute cholecystitis made laparoscopic surgery unsafe. However, as more experience was gained in the field of laparoscopy in general, many patients with acute cholecystitis have been successfully managed using the laparoscopic technique[6, 7]. Subsequent reports have documented the safety of LC in acute cholecystitis[8, 9].

The main purpose of this study is to assess the feasibility, safety, and outcome of laparoscopy in management of patients with acute calculous cholecystitis in comparison with open cholecystectomy (OC).

PATIENTS AND METHODS:

From January 2002 to April 2004, 84 out of 98 patients (38 males and 46 females) with a clinical diagnosis of acute cholecystitis who were admitted to General Surgery Department, Sohag University Hospital, South Valley University were recruited in this study. Their age ranged from 19 to 65 years with average of 47 years.

Exclusion criteria:

The following patients were excluded from the study:

- Patients with common bile duct stones or dilatation.
- Patients with acute non calcular cholecystitis.

The diagnosis was based on history of acute onset of right upper abdominal pain, tenderness and fever, leucocytosis, increased C reactive protein level and a positive ultrasonographic finding (evidence of gall stones, thickened gallbladder wall, peri-cholecystic fluid collection, and positive Murphy's sign). Computerized tomography (CT scan) and technitium-99 iminodiacetic acid (HIDA scan) were done in selected cases.

Patients were randomly assigned (sealed envelop) into two groups:

Group (1): included 40 patients underwent attempted laparoscopic cholecystectomy (LC).

Group (2): included 44 patients underwent conventional open cholecystectomy (OC).

An informed consent has been obtained from all patients who were eligible for the study.

All patients in both groups were given preoperative 3rd generation cephalosporin that continued for at least 1-3 days postoperatively. General endotracheal anesthesia was used in both groups

Operative technique:

Laparoscopic Cholecystectomy (group 1):

Attempted LC was performed using the standard four-trocar technique described by Reddick and Olsen with the use of diathermy for coagulation[10]. Exploration of the abdomen was done initially. Dissection was then started at the Callot's triangle, identification of the cystic duct and the cystic artery, exposure and division between clips. The gallbladder was carefully

mobilized from the liver bed using electrocautery. A drain was inserted into the liver bed before removal of the trocars. Fascial defects more than 10 mm were closed, with closure of the skin ports using 3/0 prolene suture. (fig 3, 4 & 7).

A number of operative modifications were necessary to successfully complete the procedure. These included aspiration of the gallbladder if it was found to be distended and tense, widening of the epigastric port for easy extraction of the gallbladder, copious irrigation of the peritoneal cavity if perforation of the gall bladder occurred (fig.2).

Open cholecystectomy (group 2):

Open cholecystectomy was either performed through a right subcostal or a midline incision. After exploration of the abdomen and decompression of the gallbladder, the dissection was started to identify the cystic duct and cystic artery which was ligated and divided. The gallbladder was then removed from the liver bed with good hemostasis. A drain was left in the liver bed. The abdominal wall was closed in layers with absorbable sutures. The skin was closed with 3/0 prolene suture.

In cases of advanced local inflammatory reaction and obscure anatomy, the dissection was performed from the fundus of the gallbladder towards the Callot's triangle (fundus first). Subtotal cholecystectomy and cholecystostomy were other alternatives in very difficult cases.

Histopathological examination:

All the removed specimens in both groups were sent for histopathological examination. The formalin fixed received specimens were trimmed and embedded in paraffin after orienting the tissue piece with the mucosa at one side of cutting and the serosa at the other end. The paraffin blocks were cut to five micron tissue sections, mounted on glass slides, stained with H&E (Haematoxylin and Eosin) stain, and microscopically examined. The severity of acute cholecystitis was then[11] categorized by the pathologist as:

- Type I: inflammation confined to the mucosa only (fig. 8&9).
- Type II: inflammation confined to mucosa and submucosa (fig.10)
- Type III: whole thickness (necrotizing and gangrenous gall bladder) (fig.11)

Outcome measures:

- Operation time in minutes was calculated from the time of skin incision to the end of the last suture.
- Postoperative pain and analgesic requirements: the pain experienced in the postoperative period was assessed at 2, 4, 6, 12, 18, 24, 36, and 48 hours by visual analogue scale (VAS). Analgesia started after complete recovery by 10 mg morphine IM and supplemented by NSAID (Tenoxicam, 20mg) on demand or small shots of morphine 2 mg/ dose if VAS was higher than 5 points. The total amount of opioids and NSAID were calculated allover the 48 hours postoperatively.
- Conversion rate in laparoscopic group and its reasons.
- Intraoperative and postoperative complications.
- Postoperative stay was calculated as postoperative number of nights spent in hospital.

Statistical analysis:

Data were analyzed using the SPSS software package. The data will be expressed as means and SD (if normally distributed) and as median (if not normally distributed). Students test

and one way analysis of variance (AVOVA) was used for comparison of means. Proportions were compared using the Chi square test or fishers exact test where appropriate. A *p*-value of 0.05 was considered significant.

RESULTS:

Characterization of patients:

Patient's characteristics are presented in table (1). Both groups were comparable in demographic data with no statistically significant difference.

Preoperative findings (Table 2):

Clinical presentation:

The most common presenting symptoms in both groups were acute right hypochondiral pain (95% and 95.5% respectively), followed by nausea and vomiting (37.5% and 38.6%) and mild fever (25% and 34%). A history of previous attacks was reported in 82.5% of patients of the lap group and 90.9% of patients of the open group. The most consistent sign in both groups was tenderness in the right hypochondrium (100% and 95.5% respectively).

Laboratory findings:

The mean leucocytic count was (11.7±3.6) $x10^3$/CC and (14.4±7.5) $x10^3$/CC in both groups respectively while the mean CRP level was 124±78.3 mg/L and 141±89.4 mg/L in both groups respectively. Liver enzymes were elevated in 25%and 29.5% of patients in both groups respectively.

Ultrasonographic findings:

By ultrasonography, the gall bladder wall was thickened and edematous in all cases in both groups, containing single stone in 75% and 72.5% and multiple stones in 25% and 27.3% of cases in both groups respectively (Table 2).

Conversion to open cholecystectomy: (Table 3, 4, 5)

Conversion to OC was necessary in 14 patients (35%); 10 patients (71%) due to obscure anatomy and dense adhesions at the Callot's triangle, 3 patients (21.4%) due to uncontrolled hemorrhage, and one patient due to suspected malig-nancy in the gallbladder.

Early decision for conversion was made within15 to 20 minutes in 6 out of 14 cases (42.9 %) due to severely distorted anatomy and cemented adhesions.

Conversion to OC was necessary in 50% of the male patients (9 out of 18) and in 22.7% of the female patients (5 out of 22).

Patients with late presentation (≥ 72 hours) showed higher conversion rate than those presented early (11 vs. 3).

Type III inflammation of the gallbladder showed higher conversion rate than type I and II (6 vs.2 vs.5 respectively).

Outcome measures (Table 6):

Operation time:

The mean operation time in the successfully completed cases in the laparoscopic group was 89.9±19.9 minutes, while mean operation time in the open group was 83.9±18.2 minutes, with no statistical significance between the two groups (p 0.21).

Postoperative pain:

Analgesia was better in the lap group with median score of 2 points with significantly less analgesic requir-ements. (Table 6 and figure1)

Postoperative hospital stay:

Postoperative hospital stay was ranged from 1-4 days (mean and SD of 2.2±0.82 days) for patients with successful laparoscopy while post-operative stay in open cases ranged

from 4 -10 days (mean and SD of 6.4 ±1.6 days). The mean hospital stay was significantly increased after OC (*P* 0.0001)

Operative complications (Table 7):

There was no mortality in the series. Bleeding occurred in 5 cases in the lap group (12.5%), in 4 of them the source of bleeding was the cystic artery and in the fifth case the source was the liver bed in a patient with cirrhosis. Conversion to OC was necessary in 3 cases due to uncontro-llable hemorrhage while in the remaining 2 cases; the bleeding was controlled by diathermy in one case and packing the liver bed in one case. In these two cases the operation was completed laparoscopically. Bleeding occurred in 2 patients in the open group (4.5%) (Cystic artery and liver bed) which was controlled by ligation and sutures.

In the lap group, gall bladder perforation occurred in 10 cases (25%), five cases during grasping the fundus and infundibulum and the remaining five cases during extraction of the gall bladder from the epigastric port because we didn't use bags during extraction. Spilled stones occurred in 7 cases (17.5%) during extraction of the gall bladder. In 4 of them the stones were retrieved while in the remaining 3 cases, the stones were left inside the abdomen (multiple, small, friable and fragmented). No complications were detected from these unretrieved stones (fig.6). In the open group this complication was encountered in 2 cases only (4.5%).

No common bile duct (CBD) or bowel injuries occurred in either group. Pneumato-omentocele occurred in one case in the LC and was managed by laparoscopic rupture.

Postoperative complications (Table 8):

Excessive bile leakage occurred in 3 cases (two in OC group and one case in LC group) which stopped spontaneously 10 days postoperatively without intervention.Wound sepsis occurred in 5 cases in OC group (11.4%) and 2 cases in LC group (7.6%). Incisional hernia occurred in one case (2.3%) after 6 months in the OC group. Also one patient in OC group (2.3%) developed intestinal obstruction after 11 month from the operation and was admitted to emergency department who was treated by laparoscopic adhesiolysis.

Table (1): Demographic data

	LC (n= 40)	OC (n= 44)	*P*-value
Age (years)			0.817 (NS)
Range	19-65	35-62	
Average	47.5	46.2	
Sex			0.967 (NS)
Male	18	20	
Female	22	24	
BMI (Kg/m^2)	27.5±0.8	26.9±0.7	0.821 (NS)
ASA classification			0.711 (NS)
ASA I	30	35	
ASA II	9	7	
ASA III	1	2	

ASA: American Society of anesthesiologists (grade of operative risk)
BMI: body mass index (Kg/m^2)
Chi-Square test: used to assess the difference between the two groups.
P value: significant if < 0.05
NS: not significant.

Table (2): Pre-operative findings

	LC (n=40)		OC (n=44)		*P*-value
Duration of symptoms before surgery:	***No.***	***%***	***No.***	***%***	
24-48 hours	5	12.5	7	15.9	
48-72 hours	15	37.5	18	40.9	
> 72 hours	20	50	19	43.2	
Presenting symptom:					
Right hypochondiral pain	38	95	42	95.5	0.67(NS)
Nausea and vomiting	15	37.5	17	38.6	
Mild fever	10	25	15	34.1	
History of previous attacks:	33	82.5	40	90.9	
Signs:					
Tenderness in the right hypochondrium	40	100	42	95.5	0.94 (NS)
Palpable gall bladder	4	10	5	11.4	
Mild jaundice	2	5	3	6.8	
Ultrasonographic findings:					
Thickened and edematous gall bladder wall	40	100	44	100	0.86 (NS)
Single stone	30	75	32	72.7	
Multiple stones	10	25	12	27.3	
Distended gall bladder	5	12.5	7	15.9	
Peri-cholecystic collection	2	5	2	4.5	
Laboratory findings:					
Range WBC count in $x10^9$/L	6-20.4		4.5-20.1		*0.32 (NS)*
Mean WBC count in $x10^9$/L	11.7±3.6		14.4±7.5		
Range CRP in mg/L	4-297		10-350		*0.36 (NS)*
Mean CRP in mg/L	124±78.3		141±89.4		

CRP= C-reactive protein (normal range = <3mg/L)
WBCs count (normal range= 3-5 $x10^9$/L)
Two-sample T test and confidence interval were used.
NS (not significant)

Table (3): Causes of conversion to open cholecystectomy

Cause	Number	Percentage
Obscure anatomy	10	71.44 %
Uncontrolled hemorrhage (Cystic artery)	3	21.42%
Suspected malignancy in the gallbladder	1	7.14%

Table (4): Conversion in relation to duration of the symptoms and surgical intervention

Interval between symptoms and surgery	LC (n=40)		OC (n=44)	
	Completed (n=26)	Converted (n=14)	Completed (n=40)	Not completed (n=4)
24 -48 hours	5	0	30	0
48-72 hours	12	3	8	0
>72 hours	9	11	2	4 *

*** Subtotal cholecystectomy (3 cases) and cholecystostomy (1 case)**

Table (5): Conversion in relation to the histopathological type

Type	LC (n= 40)		OC (n= 44)
	Completed	Converted*	
Type I	10	2	10
Type II	13	5	19
Type III	3	6	15

* One case proved to be squamous cell carcinoma of the gallbladder treated by cholecystectomy and referred to oncology department for completion of treatment **(fig. 5).**

Table (6): Outcome measures

Outcome measures	LC (n=40)	OC (n=44)	P-value
Operation time (minutes)	89.9 ±19.9	83.9±18.2	0.21 (NS)
Analgesic requirements			
Opioids (morphine) mg	14 ± 3	22 ± 5	0.001*
NSAID (Tenoxicam 20mg)	160 ± 40	240 ± 60	
Mean hospital stay (days)	2.2±0.82	6.4±1.6	0.0001 *

* P value < 0.05 is considered significant

Figure (1): Visual Analogue scale

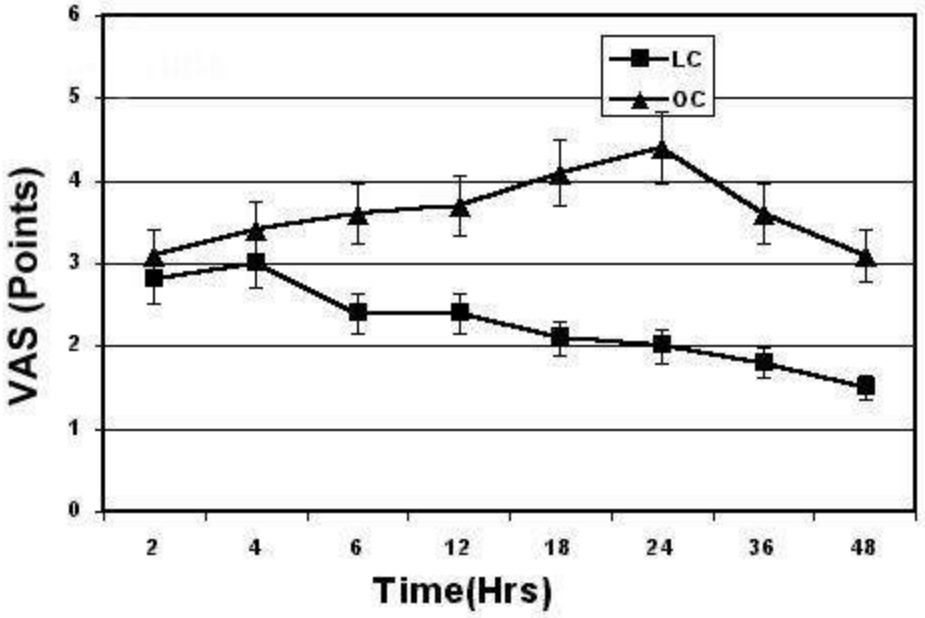

Table (7): Intraoperative complications

Intraoperative Complications	LC (n=40)		OC (n=44)		P value
	No.	%	No.	%	
Pneumato-omentocele	1	2.5	—	0	0.001*
Bleeding	5	12.5	2	4.5	
Cystic artery	4	10	2	4.5	
Gall bladder bed	1	2.5	0	0	
Gall bladder perforation	10	25	2	4.5	
Spilled stones	7	17.5	0	0	
Retrieved	4	10	—	0	
Unretrieved	3	7.5	—	0	
CBD injury	0	0	0	0	
Bowel injury	0	0	0	0	
Total	26 in 16 pts	40 %	4 in 4 pts	9 %	

* *P* value > 0.005 is considered significant

Table (8): Postoperative complications

Postoperative Complications	LC (n=26)		OC (n=44)		P value
	No.	%	No.	%	
Bile leakage	1	3.8	2	4.5	0.001*
CBD injury	0	0	0	0	
Wound sepsis	2	7.6	5	11.4	
Incisional hernia	0	0	1	2.3	
Intestinal obstruction	0	0	1	2.3	
Total	3	11.4 %	9	20.5 %	

* *P* value < 0.005 was considered significant

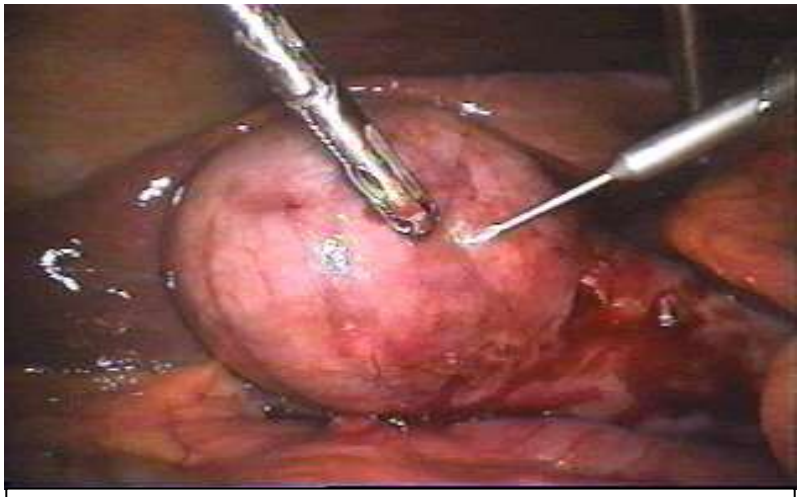

Fig. 2: Decompression of the distended gallbladder by a needle.

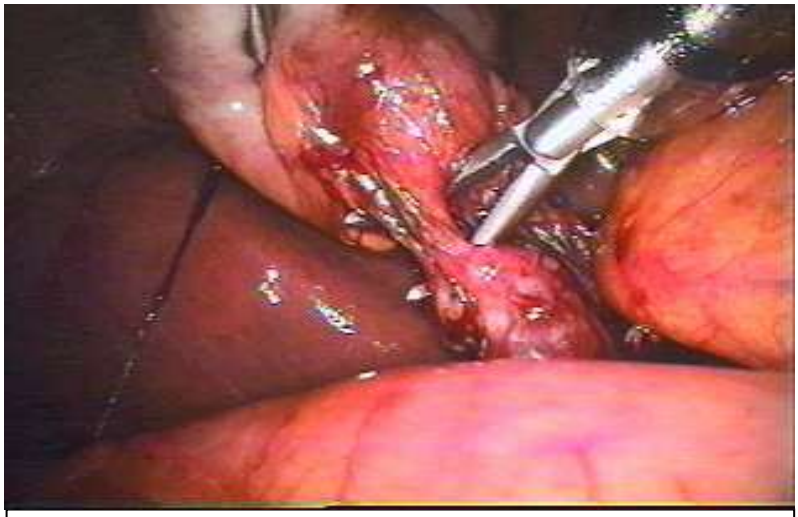

Fig. 3: Dissection of a short cystic duct using right angle clamp.

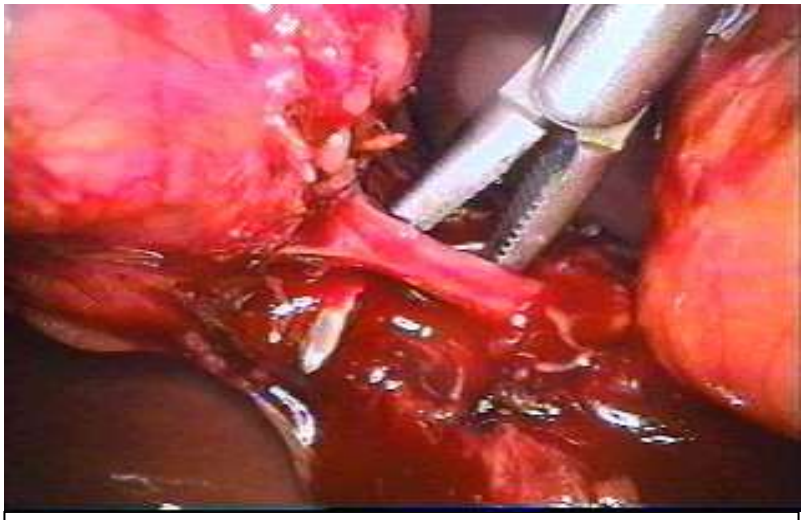

Fig. 4: Dissection of the cystic artery with right angle clamp

Fig. 5: Gallbladder carcinoma with single stone (one of converted cases).

Fig. 6: Retrieval of the stones from the peritoneal cavity.

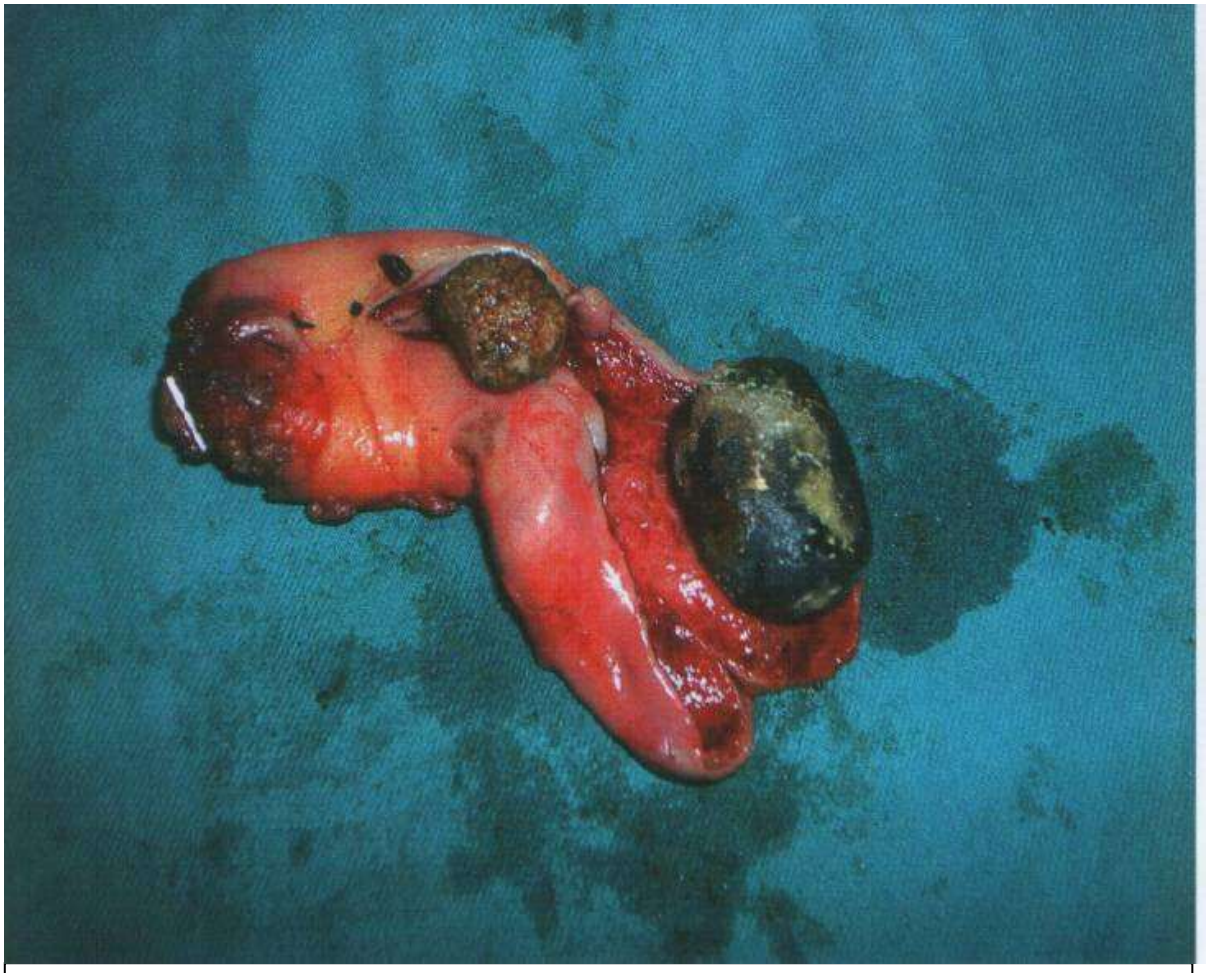

Fig. 7: The removed gallbladder with 2 big stones and a clip on the cystic duct.

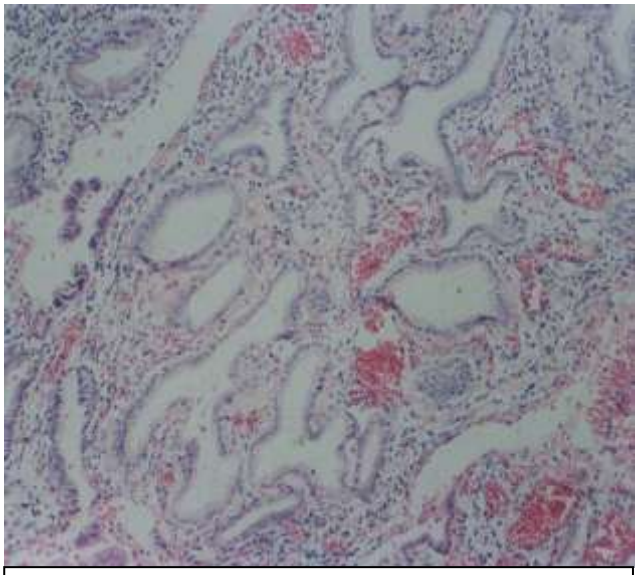

Fig. 8: Type I inflammation: gallbladder mucosa infiltrated with lymphocytes, histiocytes and some polymorphnuclear leucocytes and showing dilated congested capillaries and extravasation of some RBCs. (H&E × 200).

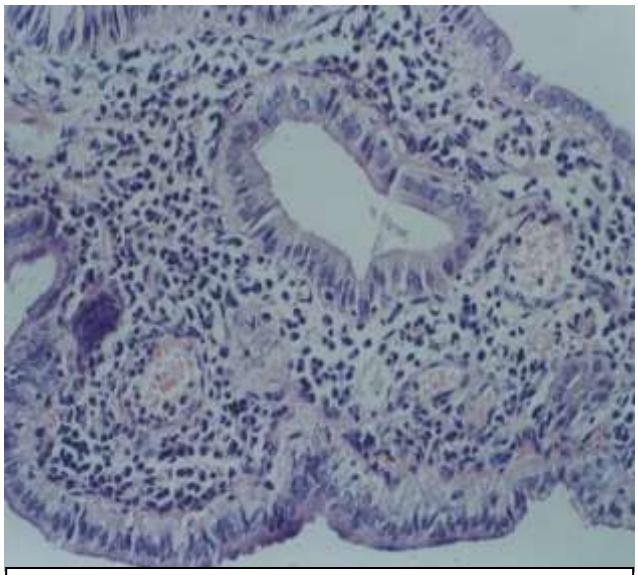

Fig. 9: Type I inflammation: gallbladder mucosa infiltrated with lymphocytes, histiocytes and some polymorphnuclear leucocytes and showing dilated congested capillaries. (H&E × 400).

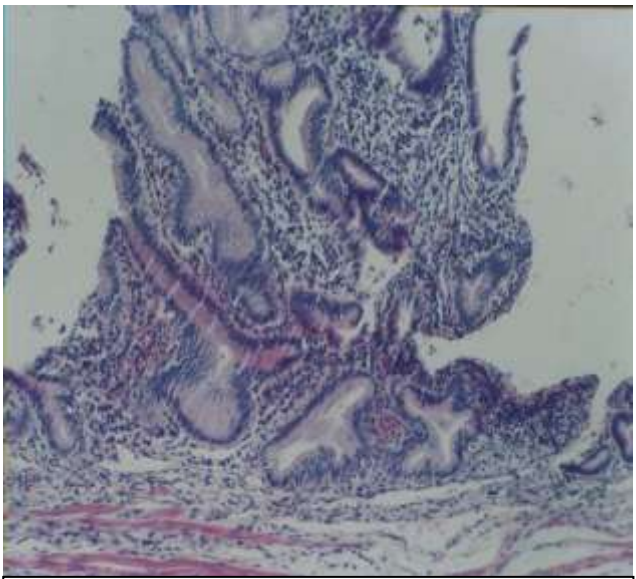

Fig. 10: Type II inflammation: the inflammation of the gallbladder reaches to the submucosa (H&E × 200)

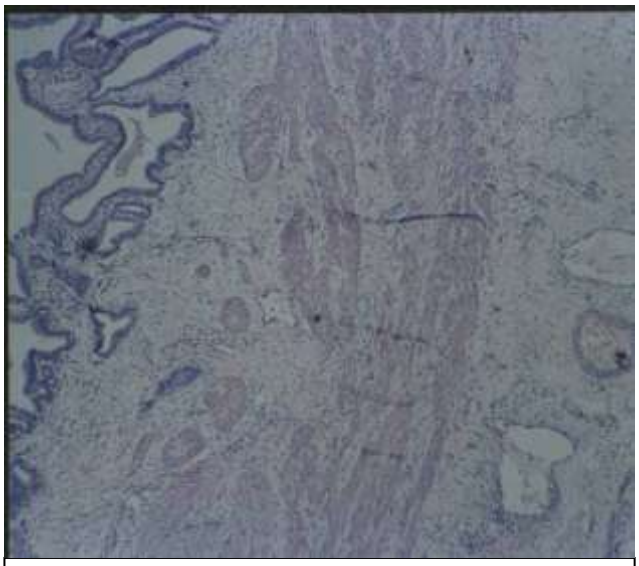

Fig. 11: Type III inflammation: the inflammatory cells involve the whole thickness of the gallbladder wall (H&E × 100).

DISCUSSION:

Acute cholecystitis is a common disease that may carry the risk of complications like, empyema, gangrene, perforation, peritonitis and sepsis. The rational for increasing use of cholecystectomy in acute cholecystitis is to reduce the risk of representation (30%). Also, same admission surgery shortens the course of illness and reduces total hospital stay[12].

With the recent explosion of laparoscopic technology, many conventional operations have been replaced with a minimally invasive procedure. Acute cholecystitis was initially considered a contraindication for LC, especially in severe attacks or if the gallbladder wall thickness was more than 4mm[5]. Many authors confirmed the efficacy as well as the safety of LC in acute cholecystitis[13]. However, others pointed out the increased rate of conversion and a significantly increased rate of common bile duct injuries[14].

The literature reports conversion rate in acute cholecystitis to be significantly higher compared with elective LC ranging from 11% to 28%[17] and reaching up to 39% in severe cholecystitis[18]. However the issue of conversion should not be considered as a complication but as a safety net[19]. Liu et al., 1996 stated that the need for conversion to laparotomy is neither a failure nor a complication, but an attempt to avoid complication. He found that in >50% of conversions, the main indication is difficulty in dissection due to unclear anatomy[22]. Pessaux et al., 2000, found a conversion rate for acute cholecystitis 38.6%[20], while Kamal et al., 2001; found a conversion rate to OC for patients with acute cholecystitis 11.85, 79% of them were males[21]. Eldar et al., 1998 found a conversion rate of 8% for uncomplicated acute cholecystitis, 12.5% for empyema of gallbladder, and 40% for gangrenous cholecystitis[18].

In our series, conversion to OC was necessary in 35% of cases after trial of laparoscopy. This high conversion rate was attributed to early decision for conversion (within 15 -20 minutes from the start of laparoscopy) that was made in 42% of the converted cases in order to avoid difficult dissection with its increased bile duct injury risk. The most common reason for conversion was obscure anatomy and uneventful adhesions (71%). Late presentation (≥72 hours) and Type III inflammation showed higher conversion rate than early presentation and type I & II inflammation. This may be explained by maturation of inflammation resulting in neovascularisation, fibrosis and contraction making dissection more difficult; also in severe inflammation involvement of the Callots triangle is more likely to occur leaving dissection more difficult and dangerous.

Most of the converted cases (64%) were belonging to male gender and there was a statistically significant difference in conversion rate between males and females (*P* 0.001.) The reason for high conversion rate in male patients remains unexplained in the literature, but the male sex is accepted as a significant risk factor in most series[23]. Our observation was that male patients had more intense inflammation and fibrosis due to either repeated previous attacks or late presentation. This may be attributed to high tolerance to pain in male patients or misdiagnosis of these cases for long periods as gastritis without proper diagnosis and treatment. All these factors may contribute to the severity of inflammation and fibrosis at Callot's triangle that makes dissection very

difficult and anatomy unclear, hence higher conversion rate.

Bleeding is the second most common cause for conversion from LC to OC but does not necessarily lead to conversion if it can be controlled and secured probably without inadvertent injury or damage to important structures. In our series, bleeding occurred in 5 cases (12.5%) in the lap group; only three of them needed conversion due to uncontrolled hemorrhage while in the remaining two cases bleeding was controlled by diathermy coagulation in one case and in the second case, the source of bleeding was excessive ooze from the liver bed in a patient with liver cirrhosis. This was controlled by packing the bed through the epigastric port and the operation completed laparoscopically, then the pack was removed 48 hours later with no problems.

Operation time in acute cholecystitis done by laparoscopy was longer than that done by OC but with no statistically significant difference (*P* 0.21).This finding is in consistent with Kiviluoto et al., 1998, who found that the mean operation time was 108±10.0 vs. 99.8±7.2 min (NS)[24] and in Fahim et al., 2001 who found the mean duration of surgery was 107 min in the LC group and 110 min in the OC group (NS)[25] and in contrast to findings of Markus et al., 2001 who reported a statistically significant difference in the operation time between LC and OC (92.1 min vs. 128.1 min, P0.001). From the previous findings, the duration of surgery was not significantly prolonged after laparoscopic cholecystectomy. This may explained by type of inflammation and adhesions found in both groups because the pathology is the same and in OC meticulous dissection and time spent to identify the anatomy may prolong the operation time.

Gall bladder perforation with spillage of bile and/or stones is much more common in LC group than OC group. It has been reported in up to 58% of the patients who underwent LC for AC[8]. In our series, perforation occurred in 25%, spilled stones in 17.5% and lost or unretrieved stones in 7.5%.We had no problems with these missed stones in the early post-operative period. But it is reported in the literature that it may develop intraperitoneal abscess, cutaneous umbilical sinus, systemic infection, fibrosis, adhesions, fistula and migration to other sites[28]. In OC, perforation of the gall bladder was encountered in 4.5% however; it is less of a problem because the spilled stones can be retrieved more easily.

The problem of CBD injuries however is reported more frequently in LC than in OC. In a review article, the incidence of bile duct injury in OC ranged from 0.0% to 0.5%, while in LC a range of 0.0% to 18% with a mean of 0.3% was reported in studies involving over 300 cases in a multicenter series[29]. Some authors consider acute cholecystitis a risk factor[13] and an incidence of 0.4% has been reported[15] but others have reported no such incidence[8,30]. In our study, we had no CBD injures in either group.

Hospital stay in LC group was significantly shorter than in the OC group (P 0.0001). This finding is in contrast to findings in early studies[26] and consistent with findings in more recent reports[27]. In Fahim et al., 2001, patients who underwent a successful LC were discharged on average 3.3 days following surgery while patients in the OC remained hospitalized for 5.4 days (P 0.001). This shorter

hospital stay in the LC group adds to the advantages of laparoscopy as well as to decrease the cost of prolonged hospital stay in OC group.

In LC for AC, mortality was reported in 0%—0.9% of the cases[15]. In Papi C et al.,., 2004, cumulative operative and perioperative mortality and morbidity were 0.9 % an 17.8 %, respectively, for open cholecystectomy and 0% and 13.1 %, respectively, for laparoscopic cholecystectomy [16]. In our series we had no mortality (0%).

CONCLUSION:

• Laparoscopic cholecystectomy for acute cholecystitis is an efficient technique associated with minor morbidity and compares favorably to current open surgical techniques.

• Laparoscopic cholecystectomy should be attempted first before resorting to open method to achieve the advantage of minimally invasive surgery.

• It should be done by experienced laparoscopic surgeon for better judgment and decision making regarding conversion.

• Do not hesitate to convert if the anatomy is unclear and possibility of injury to CBD is high.

• Early presentation after the attack < 72 hours and early intervention give the best results and decrease the conversion rate and complications

• Risk factors for high conversion rate from the study: male gender, late presentation (>72 hours), repeated previous attacks, increased CRP levels (>250mg/dl and leucocytic count≥ 15000)

• Any removed gallbladder should be subjected to histopathological examination to avoid missing gallbladder carcinoma.

• In conclusion:

Laparoscopic cholecystectomy is feasible and safe method for treatment of patients with acute calculous cholecystitis; however it is not without risks and might not be suitable for every patient.

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استئصال المرارة بالمنظار أو بالجراحة التقليدية في حالة الالتهاب الحصوي الحاد:أيهما أفضل؟

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أجرى هذا البحث على 84 مريضا من 98 مريض يعانون من أعراض التهاب المرارة الحصوي الحاد، وأدخلوا المستشفى الجامعي بسوهاج بجامعة جنوب الوادي في الفترة من يناير 2002 حتى أبريل 2004
وقد تم تقسيم المرضى إلى مجموعتين بطريقة عشوائية من حيث طريقة العملية:
المجموعة الأولى شملت أربعين مريضا أجريت لهم محاولة استئصال المرارة بالمنظار.
المجموعة الثانية شملت أربعة و أربعين مريضا أجريت لهم استئصال للمرارة بالجراحة التقليدية.
وقد تمت المقارنة بين الطريقتين من حيث الوقت المستغرق في العملية، ألآم ما بعد العملية، فترة الإقامة بالمستشفى وأخيرا المضاعفات التي نتجت عن أجراء العملية سواء أثناء أو بعد ألعمليه، كما تم أيضا دراسة نسبة التحول من المنظار إلى الطريقة التقليدية في المجموعة الأولى وسبب هذا التحول.
ويتبين من الدراسة الآتي: -

- كان هناك تشابه بين المجموعتين من ناحية الخصائص الديموجرافية , الفيزيقية والإكلينيكية بدون فروق إحصائية.
- تم التحول من المنظار إلى الطريقة التقليدية في (14) مريض من (40) مريضا أجريت لهم محاولة استئصال المرارة بالمنظار (نسبة 35 %). وفى 71 % منهم كان السبب عدم وضوح الصفة التشريحية للمنطقة الخاصة بقناة المرارة نتيجة الالتصاقات الشديدة الناجمة عن الالتهابات المتكررة. ووجد أن نسبة التحول في الذكور أعلى منها في الإناث (50 % إلى 22 %) وكذلك في المرضى الذين مضى على قدومهم للمستشفى أكثر من 72 ساعة من بداية الأعراض وكذلك وجد أيضا أن التهاب المرارة الشديد من الدرجة الثالثة أكثر عرضة للتحول من المنظار إلى الجراحة التقليدية.
- بالنسبة لمتوسط وقت العملية بالمنظار لم يختلف إحصائيا عن وقت العملية بالطريقة التقليدية حيث بلغ في الأولى (89.9) دقيقة بينما في الثانية (9 , 83) دقيقة وهذا ليس ذو دلالة إحصائية.
- أما بالنسبة لدرجة الألم بعد العملية فقد تبين أن حدة الألم أقل بكثير وكذلك نسبة استخدام المسكنات بعد إجراء العملية بالمنظار عن إجراء العملية بالطريقة التقليدية و هذا ذو دلالة إحصائية.
- بالنسبة لفترة الإقامة بالمستشفى بعد العملية كانت اقصر بكثير بالنسبة للمنظار عنها في الطريقة التقليدية وذو دلالة إحصائية حيث بلغ في الأولى 2.2 يوم مقابل 6.4 يوم في الأخرى.
- لم تحدث حالات وفاة في المجموعتين وكذلك إصابة للقناة المرارية الرئيسية أو الأمعاء أثناء الدراسة.
- حدثت بعض المضاعفات كان من أهمها ثقب المرارة ونزول السائل المراري إلى البطن مع بعض الحصوات وحدث هذا في 25 % بالنسبة للمنظار و 4.5 % في الطريقة التقليدية.
- حدث نزيف أثناء العملية في (5) حالات من حالات المنظار وفى حالتين من حالات الجراحة التقليدية وتم التحكم في النزيف في كل هؤلاء الحالات.
- أما بعد العملية فقد حدث تلوث للجروح في (5) حالات من المجموعة الثانية وفى حالتين من المجموعة الأولى وكذلك حدث انسداد معوي في حالة واحدة وأيضا فتق جراحي في حالة واحدة من المجموعة الثانية.

وقد انتهت الدراسة إلى ما يلي:

- يجب إجراء محاولة استئصال المرارة بالمنظار أولا في أي التهاب حاد للمرارة قبل اللجوء إلى الطريقة التقليدية للاستفادة من فوائد جراحة المناظير.
- تنصح المرضى الذين لديهم أعراض التهاب حاد بالمرارة بسرعة القدوم للمستشفى فور ظهور الأعراض لضمان نجاح العملية بالمنظار وتقليل نسبة التحول إلى الطريقة التقليدية.

- يجب أن تجرى هذه العملية بواسطة من لهم خبرة في مجال جراحة المناظير تجنبا لحدوث مضاعفات وضمانا لاتخاذ القرار السليم في الوقت المناسب للتحول إلى الطريقة العادية.
- يجب على الجراح عدم التردد في التحول إلى الطريقة العادية إذا صادفته أي صعوبات من ناحية الصفة التشريحية والالتصاقات ويتخذ القرار السريع تجنبا لحدوث مضاعفات.

وفى النهاية نستطيع القول بأن: استئصال المرارة بالمنظار في حالة الالتهاب الحصوي الحاد ممكن وأمن ولكن ليس بدون مضاعفات وقد يكون غير صالح لكل مريض.