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Advantages of the laparoscopic approach in the management of acute abdomen in Karbala governorate, Iraq

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ABSTRACT

Acute abdomen is a common surgical problem that needs experience and medical efforts to save lives and decrease diagnostic and therapeutic difficulties. Laparoscopy is an excellent recent method to visualize the peritoneal cavity and give an accurate diagnosis of avoiding problems of management. The laparoscopic usage in the management of emergency help in - Early diagnosis as it considered as a diagnostic and therapeutic method. It has an important role in the avoidance of (negative) laparotomy. It also helps in shortening of the period of hospitalization and so decreases medical cost the role of laparoscopic approach in cosmetic and morbidity outcomes is very prominent. A prospective study was performed by following up of 60 patients of acute abdomen who admitted to the emergency unit of Al-Hussein teaching hospital. (All of the studied cases were investigated first by imaging investigations like (Ultrasonography and X-ray of chest and abdomen). The most frequent clinical features in this study were a pain- The most common local (abdominal) sign while the most common systemic sign was a fever. The most common condition is acute appendicitis (50%) sometimes accompanied by drainage of free fluids. Laparoscopic peptic perforation repair was done in 9% while 6% of cases were adhesive intestinal obstruction treated by freeing =adhesolysis. Enteric perforations constituted 6% of cases. 5% of cases were ended with laparoscopic-assisted surgeries when 2 combined approaches were needed, but the main role was for laparoscopy.



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INTRODUCTION

Acute abdomen is a sudden severe abdominal pain. It is in many cases a surgical emergency requiring urgent and specific diagnosis. Several cases need surgical treatment. The main causes are acute appendicitis acute peptic ulcer perforation acute cholecystitis acute pancreatitis. Acute abdomen is occasionally used synonymously with peritonitis while this is not entirely incorrect peritonitis is a

more specific term referring to inflammation of the peritoneum. The most specific finding is rigidity. It manifests on physical examination as rebound tenderness. In the emergency department, acute abdomen patients need simultaneous rapid medical (history examination and urgent actions) which are essential for early accurate diagnosis & treatment. The prognosis of patients depends on the experiences of medical staff received and managed them. The diagnostic laparoscopy is a new method that helps the surgeon to observe abdominal viscera and eliminates difficulties in diagnostic and therapeutic accordingly. In previous studies the classical open laparotomy comparing with the laparoscopic approach the results were better in laparoscopic approach in diagnosis and treatment of acute abdomen in following terms Early diagnosis-negative laparotomy postoperative pain a period of hospitalization and medical cost cosmetic results morbidity. All these items improved in laparoscopic approach in (20-25%).

(Grundmann *et al.*, 2010). Our study aimed to assess the value of laparoscopy in the diagnosis and treatment of acute abdomen. Therapeutic procedures like laparoscopic appendectomy, drainage and lavage of fluids and laparoscopic-assisted resection and anastomosis may be performed simultaneously.

PATIENTS AND METHODS

This study was performed during the period from 1-1-2014 to 31-12-2017. The first 2years were for the collection of data and treatment while the last 3rd year was restricted for follow up of the results. A total of 60 patients were complaining of acute abdominal pain who were admitted to the emergency department unit of Al-Hussein teaching hospital and hence underwent laparoscopic diagnostic examinations before or instead of therapeutic laparoscopic surgeries. Before operations for acute abdomen. The Patients were investigated by one or more imaging diagnostic tests like X-Ray of the chest (erect, supine, decubitus), X-Ray of abdomen and pelvis (erect, supine), the US of the abdomen, CT-scan of chest and abdomen. The variables were studied age, gender, clinical features type of pathology, type of surgery, operative time hospitalization period analgesia requirement.

RESULTS

In this study, the acute abdomen was equally distributed between 2 genders male/female ratio 1:1. The age distribution showed that the most affected age group was (11-30) years as seen in the table (1).

Table 1: Age and sex distribution of acute abdomen

Age(Y)	Male	Female
<10	0	2
11-20	9	9
21-30	15	12
31-40	3	3
50-41	1	2
51-60	1	2
>60	1	0
Total	30	30

Male/female ratio 1/1 the most common clinical feature in this study as a symptom was a pain while the most common local sign was the abdominal and fever was the frank systemic sign as in table (2).

The most common condition seen was acute appendicitis (50%) of cases. It was sometimes accompanied by drainage of intraperitoneal accumulates. Laparoscopic. Peptic perforations repair is done in 9 patients (15%) of cases. They are freeing of the intestinal band as a result of the adhesive type of intestinal obstruction (adhes lysis) 6% of

cases. These surgical procedures sometimes accompanied by drainage of intraperitoneal accumulates 6 patients laparoscopic-assisted open Surgeries approaches were needed. While 3 patients converted to open classical laparotomies were performed. In 5%of cases, lap avoids the patient any additional surgical procedures other than diagnostic as in table (3).

Table 2: Clinical features of acute abdomen

Feature	No.	%
Symptom		
Pain	54	90
Vomiting	36	60
Constipation	15	25
Sign		
Abdominal sign	48	80
Fever	30	50
Distension	12	20

Table 3: Type of pathology and type of surgery in the treatment of acute abdomen under study

Management	No.	%
Therapy. lap	48	80
Append.	30	50
Perf. P.u	9	15
Enter.perf.	6	10
Adhesiolysis	6	10
Additional procedures	12	20
Lap.assissted	6	10
Lap.converted	3	5
Laparotomy avoided	3	5

The average time of laparoscopic appendicectomy was 45 minutes 50%% cases. The rest of the procedures period was between (40-120) minutes. As in table (4).

Table 4: Operative time (minutes)

Operative time (min)	Operation
45	Lap. Append.
80	Lap.peptic perforation
60	Lap.enteric perforation
80	Lap. Freeing adhesiolysis
80	Lap. Assisted laparotomy
120	Lap.converted laparotomy
40	Laparotomy avoided

Table 5: Post-operative hospitalization (days)

Hospitalization period(day)	No.	%
<2 days	30	50
3----5 days	24	40
>6 days	6	10

50% of Laparoscopic procedures were discharged within 2days.40% of patients under study stayed (3-5) days in the hospital only a few cases (10%) need to stay up to 7days as in table (5).

25% of laparoscopic were required only single dose analgesia, and 25% %of patients lap analgesia

for 1 day, and only 10 % of patients needed analgesia for 5 days in open lap. Assisted and converted surgery done. As in table (6).

Table 6: Requirement of analgesia (days)

Analgesic dose	No.	%
1 dose	15	25
1 day	15	25
2	12	20
3	9	15
4	6	10
>5	6	10

DISCUSSION

More common age group affected in this study from (15-45) years more than 90% belong to this group. As seen in studies (Hagos, 2015). The male/female ratio in this study was 1:1. no gender variation between patients under study as in studies (Mandalà *et al.*, 2006). Pain present in most of the patients 96%. Nausea and vomiting were the next positive symptoms constipation was also present in some cases. Abdominal signs tenderness guarding and rigidity then distention. Were seen in most cases of acute abdomen in this study. 2nd sign was fever was observed in most the cases as seen in studies= studies (Navez and Navez, 2014).

A total of 60 cases were analysed. 1-48 Patients (80%) were completed successively as diagnostic and therapeutic laparoscopy.

A- Appendicectomy was performed in 30 (50%) patients. B-Peptic perforations repair performed in 9 Patients (15%) C- Band freeing as a treatment of intestinal obstruction or adhesiolysis 6 patients (10%) D-Enteric perforations were (3) patients (5%) 2 of them ileal typhoid perforation. The third case was Perforated Mickles diverticulum

2-12 patients (20%) were ended in different ways as follows; A-6 patients (10%) were laparoscopic needed (assisted) open surgery 3 complicated appendectomies, e.g. difficulties 2 and 1 cecal involvement & 3 complicated ovarian 2 cysts gangrenous and 1 huge perforated B-3 Laparoscopic surgeries converted to classical open surgery first ruptured hydatid cyst. 2nd ischemic (gangrenous) bowel 3rd ruptured uterus C-3 patients where classical laparotomy was avoided as followings 1st patient was diagnosed as primary peritonitis. 2nd appendicular mass which was treated by Oschner Sheren method (conservatively) 3rd pelvic abscess which was treated by lavage and tube drainage and antibiotics without the need for (opening of the abdomen). The most common condition was managed in this study was acute appendicitis. it was sometimes accompanied by drainage of free fluids. Laparoscopic peptic perforation repair was done in

9% while 6% of cases were adhesive intestinal obstruction treated by freeing adhesiolysis. Enteric perforations constituted 6% of cases. 5% of cases were ended with laparoscopic assisted surgeries when 2 combined approaches were needed, but the main role was for laparoscopy. Only 5% of cases in which lap surgeries were converted to open in, i.e. 2 approaches were needed but the laparoscopic approach failed in progression, and the essential role was to laparotomy in few cases no pathology was diagnosed and the only drainage of fluids and lavage done .as in studies (Chung, Diaz and Chari, 1998). (Mayum., 2015). 50% of our patients were discharged within 2 days after operations. 40% of patients were discharged within 3-5 days .only a few cases 10% stay up to 6 days or more in whom laparoscopic-assisted and laparoscopic open laparotomy as in the study of (Golash and Willson, 2005). 50% of our patients needed analgesia as a single dose or for 1 day. Only 10% of cases were required analgesia for 5 days in whom lap assisted open surgery done. As 50% in studies (Gerbershagen *et al.*, 2013).

CONCLUSION

The laparoscopic approach gives a superior inspection of the abdomen with less injury to the tissues than classical laparotomy approach. In some conditions of acute abdomen, we needed combined laparoscopic and open surgery in term of laparoscopic-assisted laparotomy. In rare cases, the operation converted to open surgeries in difficult and non-progressed and long surgeries (when the risk of long anaesthesia and surgery become frank). In these situations, the incision for open surgery being guided by lap finding, the complications associated with laparoscopy are few and can be minimized further by using the mini-laparotomy technique. Diagnostic laparoscopy has the advantage of therapeutic intervention like the and. Appendectomy -lap adhesiolysis lap peptic perforation repair performed simultaneously with minimal need of investigation and high diagnostic and therapeutic accuracy. Diagnostic laparoscopy reduces overall hospital stay postoperative complications including pain early mobilization of the patients and early return to the work avoid big scars. Hence, minimize cost-effective in comparison to open approach, i.e. (classical open laparotomy). This study suggests the use of the laparoscopic approach in the management of acute abdomen.

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