

ROLE OF LAPAROSCOPY IN ACUTE ABDOMEN

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ABSTRACT

Background: acute abdomen refers to signs and symptoms of abdominal pain and tenderness, a clinical presentation that often requires emergency surgical therapy. This challenging clinical scenario requires a thorough and expeditious workup to determine the need for operative intervention and initiate appropriate therapy. Many diseases, some of which are not surgical or even intra-abdominal, can produce acute abdominal pain and tenderness. Therefore, every attempt should be made to make a correct diagnosis so that the therapy selected, often a laparoscopy or laparotomy, is appropriate. **Objective:** To it's aiming to minimize unnecessary laparotomies. **Patients and methods:** We performed a prospective clinical study on 40 patients suffering from abdominal pain, presented to the emergency department of Zagazig University Hospitals during the period from May 2011 to May 2012. All patients included in this study were presented with acute abdominal pains. **Exclusion criteria:** According to the following; patients were excluded from the study: all patients younger than 12 years old, hemodynamically unstable till stabilisation of the case, patients with uncorrected coagulopathies, patients with multiple previous abdominal surgical procedures and patients with intestinal obstruction with diffuse abdominal distension. **Operative Techniques; Patient position:** All laparoscopic procedures were done in the operative theatre; the patient is placed supine on the operating table with the legs straight. **Anaesthesia:** It was performed under general anaesthesia. **Creation of pneumoperitoneum:** -either the open technique or the veress needle was used to establish pneumoperitoneum according to individual surgeon preference.-the location usually was periumbilical. **Port location:** 10 mm laparoscope was used through umbilical port. An accessory 5mm port was then used under vision in the left upper quadrant along the linea semilunaris, halfway between the umbilicus & the costal margin this was needed for the palpating probe and suction/coagulation cannula. Other accessory ports were inserted in other sites as needed. **Inspection:** After inspecting the trocar entry sites and the anterior surfaces of the abdominal viscera, general inspection of the peritoneal cavity and its contents proceeded this was followed by specific inspection of diseased organs. **Statistical analysis:** SPSS version 15. **Results:** Laparoscopy showed results better than that of open repair as regard postoperative pain, operative time, hospital stay and most of complications. **Conclusion:** The emergency laparoscopy is a diagnostic and therapeutic option in the majority of acute abdominal pain conditions, to minimize unnecessary laparotomies it is a promising solution.

Keywords: acute abdomen - laparoscopic - repair.

INTRODUCTION

For hundreds of years acute abdominal conditions have been presenting great challenge of surgeon with its attendant great mortality and morbidity, in addition to pitfalls in diagnosis and management pitfalls⁽¹⁴⁾. The use of laparoscopy for diagnostic purposes dates back to the beginning of 20th century. In spite of the evolution of many recent imaging devices (CT, US, MRI) still laparoscopy occupies an important role in diagnosis of acute abdomen due to many negative laparotomies, and missed cases of acute abdomen after complete dependence on these devices and negligence of the role of laparoscopy as a diagnostic tool⁽⁴⁾.

OBJECTIVE

To discuss different applications of laparoscope in diagnosis and treatment of acute abdomen, it's aiming to minimize unnecessary laparotomies.

PATIENTS AND METHODS

We performed a prospective clinical study on 40 patients suffering from abdominal pain, presented to the emergency department of Zagazig University Hospitals during the period from May 2011 to May 2012. All patients included in this study were presented with acute abdominal pains. All patients were admitted to hospital and were subjected to the following assessments: detailed

history, general physical examination, local abdominal examination, laboratory investigations (CBC, LFTS & Kidney function test) and imaging studies (Sonar, Plain x ray erect abdomen & CT).

EXCLUSION CRITERIA

Patients with According to the following patients were excluded from the study: all patients younger than 12 years old. hemodynamically unstable till stabilisation of the case, patients with uncorrected coagulopathies, patients with multiple previous abdominal surgical procedures and patients with intestinal obstruction with diffuse abdominal distension.

PREPARATION OF PATIENTS

All patients were prepared for laparoscopy including assessment of risks for general anaesthesia. The procedure was explained to the patients, and a true informed consent including the possibility of conversion to open surgery was taken from the patients. Correction of any clotting abnormality by giving vitamin K injection and fresh plasma were given to 2 cases. Catheterization to empty the urinary bladder immediately before procedure and the catheter was removed at the end of procedure. Nasogastric tube was inserted in all patients. All patients were strapped for active manipulation of the table. All cases were prepared preoperatively by

maintaining adequate hydration, non hepatotoxic broad spectrum antimicrobials we used 2gm of ceftriaxone one shot dose and 100 ml of metronidazole infusion.

OPERATIVE TECHNIQUE

Patient position: All laparoscopic procedures were done in the operative theatre; the patient is placed supine on the operating table with the legs straight. **Anaesthesia:** It was performed under general anaesthesia. **Creation of pneumoperitoneum:** either the open technique was done 10 cases or the veress needle was used in 30 cases both were used to establish pneumoperitoneum according to individual surgeon preference. The location usually was periumbilical. **Inspection :** After inspecting the trocar entry sites and the anterior surfaces of the abdominal viscera, general inspection of the peritoneal cavity and its contents proceeded this was followed by specific inspection of diseased organs. The patient was actively manipulated to explore the abdomen thoroughly .

STATISTICAL ANALYSIS: Data were coded, entered and analysed using SPSS version 15.

RESULTS

This study included 40 patients suffering from acute abdominal pain presented to the emergency department of **Zagazig** University Hospitals during the period from May 2011 to May 2012. There were 27 females and 13 males (with female to male ratio = 2.07: 1), their ages ranged from 13 to 62 years (Mean age = 31.3 years) , results demonstrated in table (1).

There were 23 patients presented by right lower quadrant (RLQ) pain, five patients presented by lower abdominal (LA) pain, and 12 patients presented by diffuse abdominal pain. All patients were submitted to complete history taking, clinical examination and investigations. Nausea and vomiting (N&V) were presented in 22 patients while fever was detected in 12 patients. Tenderness was presented in 34 patients while rebound tenderness was presented in 11 patients. The laboratory and radiological investigations of the patients showed leucocytosis in 11 patients (27.5 % of cases) all of them complained acute abdominal pain. Abdominal X-ray (erect position) was performed in all cases; abnormal finding was detected in nine patients only (22.5% of cases), free air under the diaphragm was detected in five cases, while intestinal gaseous distension was detected in four cases. Abdominal ultrasonography (U/S) was performed in all cases; abnormal finding was detected in 14 patients only (35% of cases), free intra-peritoneal fluid collection was detected in eight cases, thickened edematous bowel loops was detected in two cases,

suspected tubo-ovarian mass was detected in three cases and suspected small intestinal mass was detected in one case . Minilaparotomy was done in two patients with acute abdominal pain. Formal laparotomy was done in three patients with acute abdominal pain. Peritoneal lavage was done in five patients (12.5%) with no need for further surgical intervention.

Diagnostic laparoscopy couldn't detect underlying pathology in three patients (7.5%), two of them had acute abdominal pain and one patient had chronic abdominal pain. Two patients proved to be free from intra-abdominal pathology by further investigations so they were true negative cases, and in one case a grossly normal appendix was proved to have acute appendicitis by histopathological examination, so it was a false negative result. Appendicular pathology was detected in 16 patients (14 acute & two chronic), laparoscopy detected appendicular pathology (in the form of hyperemia, purulent discharge or periappendicular adhesions) in 15 cases, and laparoscopic appendectomy was done to all patients. Grossly normal appendix was removed in one patient with RLQ pain with no other pathology could be detected this patient was clinically appendicitis and histopathological examination revealed acute appendicitis. Diagnosis of acute or chronic appendicitis was confirmed by histopathological examination of all excised appendices. Tubo-ovarian pathology was detected in 10 patients; rupture of ovarian cyst was detected in two patients and rupture graffian follicle was detected in two patients, and peritoneal lavage was done with no further intervention.

Hemorrhage in ovarian cyst was detected in one patient, and laparoscopic cystectomy was done. Acute salpingo-oophoritis was detected in one patient, and peritoneal lavage was done with no further intervention. Torsion of ovarian mass was detected in one patient, and laparoscopic oophorectomy was done, histopathological examination was done and revealed dermoid cyst. Tubo-ovarian abscess was detected in one patient, Minilaparotomy and salpingo oophorectomy was done. Endometriosis was detected in two patients and laparoscopic ablation with electrocautery was done. Perforated viscus was detected in five patients (all were acute), Out of these patients perforated duodenal ulcer was detected in three patients, and laparoscopic repair with omental patch was done. Perforated typhoid ulcer was detected in one patient, Minilaparotomy and intestinal resection anastomosis was done. Sigmoid diverticulitis with perforation was detected in one patient, formal laparotomy, sigmoidectomy and

Hartmann's procedure were done. Mesenteric vascular occlusion was detected in two patients, formal laparotomy and intestinal resection anastomosis was done. Ileo-ileal intussusception was detected in one patient, Minilaparotomy and intestinal resection anastomosis was done. Intraperitoneal adhesions were detected in three patients, and laparoscopic adhesiolysis was done.. Omental infarction was detected in one patient, and laparoscopic resection of the involved omentum was done, laparoscopic appendectomy was done also and histopathological examination revealed normal appendix.No pathology could be detected by diagnostic laparoscopy in three patients (two acute & one chronic abdominal pain patients). One patient had RLQ

pain, laparoscopic appendectomy and histopathological examination revealed acute appendicitis. Two patients had diffuse abdominal pain, one case proved to be familial Mediterranean fever by further laboratory investigations, in one case no cause of abdominal pain could be detected by further investigations and diagnosed as functional abdominal pain and the patient was reassured, these results are demonstrated in table (2).

The post operative hospital stay in cases completed laparoscopically was ranged from 2 to 5 days with a mean of 3 days, while in cases needed laparotomy it was ranged from 4 to 10 days with a mean of 6 days. Follow up of the patients was done in outpatient surgical clinic for 30 days in patients with acute abdominal pain.

Table (1) Age distributed by sex for all patients included in this study

Age	Sex				Total	
	Male		Female		No	%
	No	%	No	%		
13-20	3	7.5	6	15	9	22.5
21-30	1	2.5	13	32.5	14	35
31-40	2	5	7	17.5	9	22.5
41-50	4	10	1	2.5	5	12.5
>50	3	7.5	-	-	3	7.5
Total	13	32.5	27	67.5	40	100

Table (2) final results.

Definitive Diagnosis	Number of cases		Laparoscopic diagnosis		Therapeutic laparoscopic intervention		Minilaparotomy		Formal laparotomy		No intervention	
	N	%	N	%	N	%	N	%	N	%	N	%
Appendicular pathology	16	40	15	37.5	16	40	-	-	-	-	-	-
Tubo – ovarian pathology	10	25	10	25	4	10	1	2.5	-	-	5	12.5
Perforated viscus	5	12.5	5	12.5	3	7.5	1	2.5	1	2.5	-	-
Mesenteric vascular occlusion	2	5	2	5	-	-	-	-	2	5	-	-
Intraperitoneal adhesion	3	7.5	3	7.5	3	7.5	-	-	-	-	-	-

Omental infarction	1	2.5	1	2.5	1	2.5	-	-	-	-	-	-
Intussusception	1	2.5	1	2.5	-	-	1	2.5	-	-	-	-
No pathology	2	5	-	-	-	-	-	-	-	-	-	-
Total	40	100	37	92.5	27	67.5	3	7.5	3	7.5	5	12.5

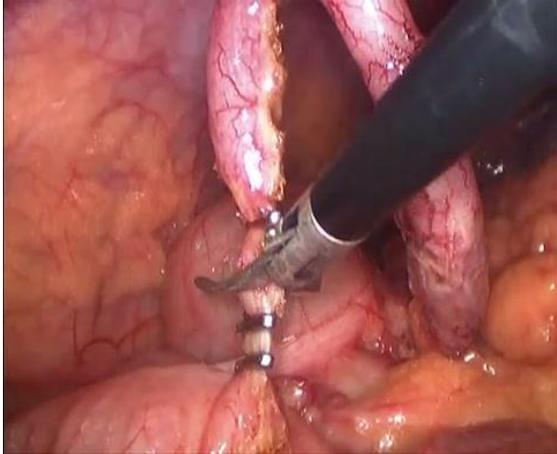


Figure (1) Appendicectomy



Figure (2) Endoloop

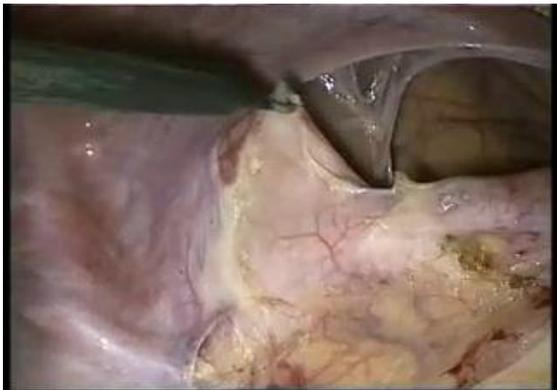


Figure (3) Adhesiolysis.



Figure (4) Perforated peptic ulcer repair



Figure (5) Ileo-ileal intussusception



Figure (6) Tubo ovarian abscess

DISCUSSION

The abdomen is one of the most frequent sites of regional pain, abdominal pain accounts for five to ten percent of all emergency department visits **Graff & Robinson** ⁽⁷⁾. The primary goals in the management of patients with abdominal pain are

(1) to establish a differential diagnosis and a plan for confirming the diagnosis through appropriate investigations, (2) to determine whether operative intervention is necessary, and (3) to prepare the patient for operation in a manner that minimizes perioperative morbidity and mortality. Many

surgeons worldwide have had the challenging experience of facing an unexplainable abdominal pain and uncertain diagnosis. History taking, physical examination, laboratory tests and sequences of advanced non-invasive imaging studies might provide some help, but are often insufficient for accurate diagnosis **Golash & Willson** ⁽⁶⁾.

Diagnostic laparoscopy was introduced to surgical practice in the beginning of the 20th century, but had a limited use for about 80 years. In the past decade, the advances in new video systems, improved laparoscopic instruments, and increasing surgical experience all have enabled laparoscopic surgeons to venture into new areas **Zago et al** ⁽¹⁷⁾. The value of laparoscopy in diagnosis and management of acute abdominal pain was evaluated in this study. This study included 40 patients suffering abdominal pain presented to the emergency department of Zagazig University Hospitals. Their ages ranged from 13 to 62 years with the mean age about 31.3 years, and with female to male ratio about (2.07:1). The patients in this study were presented with variable symptoms and signs; nausea and vomiting presented in 55% of patients, fever was presented in only 30% of patients all of them had acute abdominal pain, so the absence of fever, nausea and vomiting in cases of abdominal pain cannot exclude underlying pathology, and this disagrees with **Abbas et al** ⁽¹⁾, who reported that patients who present with abdominal pain with no vomiting, guarding or fever are unlikely to have significant intra-abdominal pathology and therefore can be considered for early discharge back to the community. Tenderness is an important sign in diagnosis of abdominal pain, as it was presented in 85% of patients of this study and nearly in all cases of acute abdominal pain while rebound tenderness was presented only in 27.5% of patients, however tenderness and rebound tenderness indicated only peritoneal irritation with no clue about the underlying disease, and this agrees with **Abbas et al** ⁽¹⁾, who reported that tenderness and peritonism in the right iliac fossa are not specific for appendicitis but may help to narrow the differential diagnosis in patients with right iliac fossa pain elevated total leucocytic count was detected in only 27.5% of patients in this study, all of them had acute abdominal pain while no leucocytosis was detected in patients with chronic abdominal pain, this results are similar to results of **Golash and Willson** ⁽⁶⁾, who found that eighty percent of patients with acute appendicitis had normal leucocytic count in the first 24 hours of pain. Free air under the diaphragm detected in abdominal X

ray (erect position) indicated a perforated viscus but couldn't give a clue about the site of the perforation, however absence of pneumoperitoneum can't exclude perforated viscus as reported by **Ahn et al** ⁽²⁾, who found that only 75% of patients with perforated duodenal ulcers have radiographically detectable pneumoperitoneum.

Abdominal Ultrasonography showed positive findings in 35 % of patients, in the form of free intra-peritoneal fluid collection, thickened edematous bowel loops, suspected tubo-ovarian mass and suspected small intestinal mass, while C.T scan was done in all cases with chronic abdominal pain; and one case only showed suspected small intestinal mass, with no abnormality could be detected in other cases, these results agree with **Golash and Willson** ⁽⁶⁾, who reported that ultrasound and CT scan were used in patients with diffuse peritonitis and they were helpful only in assisting in a diagnosis other than appendicitis, and reported that although ultrasound had been increasingly used in the diagnosis of acute appendicitis, it didn't produce a better outcomes than clinical diagnosis alone.

However, the role of Abdominal Ultrasonography or the C.T scan can't be evaluated by the previous results as patients with conclusive diagnostic finding detected in these investigations were excluded from this study.

In this study, diagnostic laparoscopy was successful in reaching a definitive diagnosis in 92.5 % of patients with abdominal pain, and this is similar to results of **Golash and Willson** ⁽⁶⁾, who reported a definitive diagnosis in 90% of patients with acute abdominal pain, and similar to results of **Onders and Mittendorf** ⁽¹¹⁾, who reported that laparoscopy could reach a definitive diagnosis in 85.7% of patients with chronic abdominal pain.

Appendicular pathology was detected by diagnostic laparoscopy in 15 patients (37.5% of cases), and laparoscopic appendectomy was done to all patients, so the traditional McBurney's incision can be avoided and this agrees **Prfull and Gaur** ⁽¹²⁾, who reported that laparoscopy is very sensitive for diagnosis of appendicitis whether acute or chronic and not only detect appendicitis but also avoids negative appendectomy.

Laparoscopic appendectomy for normal looking appendix was done in one patient complained of right lower abdominal pain with no other pathology could be detected by thorough laparoscopic exploration, histopathological examination of the appendix revealed acute appendicitis and this similar to **Olsen and Myren** ⁽¹⁰⁾, who advised removal of a normal appearing

appendix in cases of RLQ pain as the appendix may appear grossly normal during early appendicitis and usually cannot be confirmed until histopathological examination is undertaken.

Laparoscopy provided proper diagnosis of some patients provisionally diagnosed as acute appendicitis; while laparoscopic exploration detected tubo-ovarian pathology. Proper therapeutic intervention was done according to the case, only peritoneal lavage was needed in cases of rupture ovarian cyst, rupture graffian follicle and in acute salpingo-oophoritis with no need for further intervention so unnecessary laparotomy was avoided.

Laparoscopic ovarian cystectomy was done in one case with hemorrhage in ovarian cyst while laparoscopic oophorectomy was needed in one case with torsion of ovarian dermoid cyst, laparoscopic ablation of endometriosis with electrocautery was done which provided relief of abdominal pain in these patients with no need for laparotomy to treat these cases, these results agree with **Warren et al** ⁽¹⁶⁾, who reported that if gynaecological disorders are the suspected cause of pain, diagnostic laparoscopy should be performed, as frequently simultaneous therapy will be possible. Tubo-ovarian abscess was detected in one patient, small target incision and oophorectomy was done with no need for formal laparotomy.

Laparoscopy in cases of perforated viscus allowed detection of the site of perforation and offered a minimally invasive therapeutic tool for treatment of these cases as in perforated duodenal ulcer repair, even if laparoscopic treatment can't be done the patient could get benefit of small target incision with no need for formal laparotomy and this agree with **Pierre et al** ⁽⁹⁾, who recommended the use of laparoscopic approach for perforated duodenal peptic ulcer repair, with acceptable mortality and morbidity rates. However, the role of abdominal ultrasonography or the C.T scan can't be evaluated by the previous results as patients with conclusive diagnostic finding detected in these investigations were excluded from this study.

In this study, diagnostic laparoscopy was successful in reaching a definitive diagnosis in 92.5 % of patients with abdominal pain, and this is similar to results of **Golash and Willson** ⁽⁶⁾, who reported a definitive diagnosis in 90% of patients with acute abdominal pain, and similar to results of **Onders and Mittendorf** ⁽¹¹⁾, who reported that laparoscopy could reach a definitive diagnosis in 85.7% of patients with chronic abdominal pain. Appendicular pathology was detected by diagnostic laparoscopy in 15 patients

(37.5% of cases), and laparoscopic appendectomy was done to all patients, so the traditional McBurney's incision can be avoided and this agrees **Prafull and Gaur** ⁽¹²⁾, who reported that laparoscopy is very sensitive for diagnosis of appendicitis whether acute or chronic and not only detect appendicitis but also avoids negative appendectomy.

Laparoscopic appendectomy for normal looking appendix was done in one patient complained right lower abdominal pain with no another pathology could be detected by thorough laparoscopic exploration, histopathological examination of the appendix revealed acute appendicitis and this similar to **Olsen and Myren** ⁽¹⁰⁾, who advised removal of a normal appearing appendix in cases of RLQ pain as the appendix may appear grossly normal during early appendicitis and usually cannot be confirmed until histopathological examination is undertaken. Laparoscopy provided proper diagnosis of some patients provisionally diagnosed as acute appendicitis; while laparoscopic exploration detected tubo-ovarian pathology. Proper therapeutic intervention was done according to the case, only peritoneal lavage was needed in cases of rupture ovarian cyst, rupture graffian follicle and in acute salpingo-oophoritis with no need for further intervention so unnecessary laparotomy was avoided.

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Tubo-ovarian abscess was detected in one patient, small target incision and salpingo-oophorectomy was done with no need for formal laparotomy.

Sigmoid diverticulitis with perforation was detected in one patient, formal laparotomy, sigmoidectomy and Hartmann procedure were done, so this patient had only benefits of diagnostic laparoscopy, and this disagrees with **Delany et al** ⁽⁵⁾, who reported that laparoscopic colonic resection can be used in cases of recurrent or complicated colonic diverticulitis.

In this study, mesenteric vascular occlusion was detected in two patients, in whom formal laparotomy and intestinal resection and

anastomosis was done. Laparoscopy allowed early diagnosis of these patients who were presented by nonspecific clinical picture and this agrees with **Pierre et al** ⁽⁹⁾, who reported that delay in diagnosis and surgical exploration is still frequent and is a significant contributory factor to the reported high mortality rate in mesenteric vascular occlusion, and reported that diagnostic laparoscopy in early management of acute mesenteric venous thrombosis can furnish a rapid precise diagnosis of bowel infarction and can also reduce the unnecessary laparotomies in these difficult cases.

Ileo-ileal intussusception was detected by laparoscopy in one patient and only small target incision was done for intestinal resection and anastomosis, **Alonso et al** ⁽³⁾, reported that the laparoscopic approach offers both a diagnostic and therapeutic option for intussusception in the adult. Intraperitoneal adhesions were detected by laparoscopy in three patients, and laparoscopic adhesiolysis was done which provided relief of the patients' complain, and this was similar to results of **Swank et al** ⁽¹⁵⁾, who reported that therapeutic laparoscopic adhesiolysis for chronic abdominal pain was performed completely in 92% of patients and has led to a majority of satisfied patients, who were pain free or had less pain. Omental infarction was detected in one patient, and laparoscopic resection of the involved omentum was done, laparoscopic appendectomy was done also to exclude associated pathology but histopathological examination revealed normal appendix and this agrees **Sa 'nchtez, et al** ⁽¹³⁾, reported that torsion of the omentum is difficult to diagnose before surgery and is usually detected during laparotomy for acute abdominal pain so performance of laparoscopy as minimally invasive surgery can be useful for both diagnosis and treatment of this uncommon condition. After diagnostic laparoscopy, formal laparotomy was indicated in three patients (7.5% of cases)(one case perforated viscus and two cases mesenteric vascular occlusion) while minilaparotomy according to site of pathology was indicated in three patients (7.5% of cases)(intussusception ,perforated viscus and tuboovarian abscess) this similar to **Kirshtein et al** ⁽⁸⁾, who found that 12.5% of cases required a target incision while 12.5% of cases needed formal laparotomy. Diagnostic laparoscopy couldn't detect underlying pathology in three patients (7.5%), two patients had acute abdominal pain while one patient had chronic abdominal pain, by further investigations, two patients proved to be free from intra-abdominal pathology so they are true negative cases, while one case with grossly normal

appendix was proved to have acute inflammation so diagnostic accuracy of laparoscopy reached 97.5% of all cases, it is consistent with the results of **Kirshtein et al** ⁽⁸⁾, who found that laparoscopy obtained a correct diagnosis in 98.6% of the cases. We performed laparoscopic appendectomy for the last two cases because no pathology was found and the patients were clinically appendicitis.

CONCLUSION

After using diagnostic laparoscopy in management of acute abdomen, we came to the conclusion that diagnostic laparoscopy is helpful in diagnosis and treatment of cases of acute abdomen. It reduces the chances of unnecessary laparotomy. By exact diagnosis, laparoscopy reduces scar size, complications related to surgery, operative time and hospital stay and thus it reduces morbidity and mortality. Diagnostic laparoscopy is the gold standard in management of acute abdomen as it is easy, less time consuming, cosmetic and definitive with lesser complications and lesser morbidity and mortality. By appropriate training, enough experience, enough patience and proper selection of the patients, the result of diagnostic laparoscopy is best and it is the best diagnostic test available at present.

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دور منظار البطن في حالات آلام البطن الحادة

يعتبر منظار البطن الجراحي ذو دور مهم في تشخيص وعلاج آلام البطن الحادة فهو يفيد في تشخيص حالات آلام البطن الحادة ومعرفة اسبابها ونظراً لوجود العديد من الأسباب التي لا تستدعي تدخلاً جراحياً ويكتفى فيها بالعلاج الدوائي أو التخفظي فإنه يفيد في التفرقة بين الحالات التي تستدعي تدخلاً جراحياً وبين تلك التي يكتفى فيها بالعلاج التخفظي خاصة تلك الحالات التي سوف يتم الانتظار تحت الملاحظة لمعرفة تشخيصها وتلك الحالات التي سوف تحتاج لمزيد من الفحوصات الإشعاعية والمعملية لمعرفة تشخيصها مما له أبلغ الأثر في تقليل حالات الاستكشاف الجراحي السلبي.

وفي هذه الدراسة نحن اجرينا دراسة استطلاعية على ٤٠ مريضاً يعانون من آلام في البطن، مقدمة إلى قسم الطوارئ في المستشفيات بجامعة الزقازيق خلال الفترة من مايو ٢٠١١ إلى اغسطس ٢٠١٢.

يستخدم المنظار في حالات التهاب المرارة الحاد واستئصال الزائدة الدودية الملتهبة وفي إزالة زائدة ميكل، وفي إزالة التصاقات الامعاء وفي استئصال الامعاء المصابة بمرض كرونز اذا ما سبب المرض انسداداً معويماً كما يستخدم في استئصال القولون في حالة الالتهابات الحادة للجويبات القولونية ويستخدم في علاج حالات الحمل خارج الرحم وازالة الانسجة الرحمية التي توجد خارج الرحم وفي إزالة حويصلات المبيض النازفة.

للمنظار الجراحي العديد من المضاعفات مثل نزيف الأوعية الدموية والجلطة الرئوية، وإصابة الأعضاء الداخلية وحدوث تجمع دموى في جدار البطن وهذا بالإضافة الى تأثيره على القلب والجهاز التنفسي مما يجعله ذو محاذير في مرضى القلب والجهاز التنفسي.

للمنظار الجراحي مزايا عديدة منها الوصول إلى التشخيص السريع والتدخل الجراحي لإنقاذ المريض قبل حدوث المضاعفات خاصة في حالات آلام البطن الحادة الغير مألوفة كما يقلل من الألم بعد العملية ومن الحاجة لاستخدام مسكنات بعد العملية ويؤدي الى عودة اسرع للعمل بعد العملية كما يقلل من فترة توقف الامعاء عن الحركة والتي تعقب الجراحة، هذا بالإضافة الى ميزة هامة وهي التقليل من حدوث التصاقات بعد الجراحة مما يقلل من احتمال حدوث انسداد معوي لاحقاً.