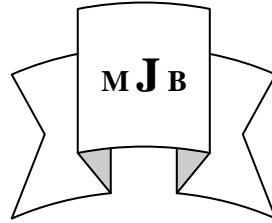


## Our Laparoscopic Experience in Management of Chronic Abdominal Pain: A Cross-sectional Study

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### **Abstract**

**Background:** Laparoscopic and endoscopic surgery are currently worldwide surgical procedures. Laparoscopic surgery in particular is a minimal invasive surgery. The rapid evolution of laparoscopic surgical subspecialty have introduced it into a wide range of clinical applications regarding diagnosis and/or therapy of remarkable spectrum of diseases. Laparoscopy, in optimal circumstances, enables excellent visualization of the abdominal cavity. Accordingly, it has been practiced in this study to assess and/or treat cases of chronic abdominal pain.

**Objectives :** This study tries to evaluate the significance of adopting laparoscopy in the management of patients with chronic abdominal pain in Al-Hilla General Teaching Hospital.

**Methods :** This is a cross-sectional case series study that had assessed (49) patients of an average age of (35) years complaining of chronic abdominal pain for the period 01/09/2008-01/09/2011. Postoperative follow-up was conducted for (12) months. All cases of known intra-abdominal malignancies were excluded from this study. All data were collected using a formed questionnaire by the worker and information were filled by the worker single handly.

**Results :** Thirty-four patients ( 69 %) of the study group had previous abdominal or pelvic surgery. Thirty-five patients (71 %) showed intra-abdominal adhesions. Thirty-one patients (63 %) had underwent laparoscopic adhesiolysis while the remaining four cases had their adhesions kept undisturbed as they were considered to be insignificant. Three patients (6.1%) exhibited mesenteric lymphadenopathy which was discovered to be secondary to chronic upper respiratory tract infections. Two cases (4%) of unilateral left-sided inguinal hernias were disclosed. One case (2%) of abnormally looking appendix was detected and managed by laparoscopic appendectomy. Eight Patients (16.3 %) showed complete normality on laparoscopy.

**Conclusion :** With standard laparoscopic equipments, techniques and postoperative care laparoscopy is a safe, useful and more informative invasive investigation to evaluate and/or resolve the problem of chronic abdominal pain.

**Keywords :** Laparoscopy, Chronic Abdominal pain, Babylon

### تجربتنا مع التنظير البطني في تدبير حالات الألم البطني المزمن دراسة مقطعية

#### الخلاصة

**خلفية البحث:** أن الجراحة بأستخدام النواظير الداخلية ومن ضمنها ناظور الجوف البطني يعتبر من الممارسات الجراحية الحديثة و المعاصرة و قد سبب التقدم السريع في تقنياتها الى جعلها تخصص جراحي بحد ذاته ومنتشرا عالميا و تم أخداله الى العديد من التطبيقات السريرية لغرض تشخيص و/ أو علاج طيف كبير من الامراض . يعتبر تنظير الجوف البطني عند أجرائه حسب الضوابط القياسية أجراة سليما و مفيدا. ومن هذا المنظور أستخدما تقنية التنظير البطني لدراسة و تقييم بعض من حالات الألم البطني المزمن. **الأهداف:** تهدف هذه الدراسة الى تقييم المنفعة من أستخدام و تبني أجراة تنظير الجوف البطني في تدبير و معالجة حالات المرضى الذين يشكون من الألم البطني المزمن .

**الطريقة:** هذه دراسة مقطعية لسلسلة من حالات الألم البطني المزمن حيث تمت دراسة و تقييم (٤٩) مريض و بمعدل عمري (٣٥) سنة على مدى ثلاث سنوات . تمت متابعة هؤلاء المرضى لمدة (١٢) شهرا بعد إجراء فحص تنظير الجوف البطني. تم أستثناء كل الحالات المشخصة مسبقا كحالة سرطان البطن من هذه الدراسة .

**النتائج:** بينت هذه الدراسة أن (٣٤) مريض (٦٩%) في هذه المجموعة لديهم تاريخ مرضي سابق لجراحة فتح البطن أو الحوض . تبين وجود التصاقات صفاقية في (٣٥) مريض (٧١%) و تم إجراء فتح الألتصاقات في (٣١) مريض (٦٣%) منهم فيما لم يجرى اي تدخل في الاربعة الباقيين . كما وجدنا (٣) مرضى (٦.١%) يعانون من التهاب العقد اللمفاوية المساريقية الذي تبين فيما بعد أنه كان نتيجة لالتهابات المجاري التنفسية العليا المستتر وتم أكتشاف حالتين لوجود فتق مغبني أيسر (٤%) . وجدنا حالة واحدة لمريض يعاني من وجود زائدة دودية غير طبيعية (٢%) . كان فحص التنظير البطني طبيعيا في (٨) مرضى (١٦.٣%) .

**الأستنتاج:** في حالة توفر الأدوات و التقنيات القياسية لأجراء عملية تنظير الجوف البطني مع توفر عناية قياسية لما بعد العملية فأن التنظير البطني يعتبر فحصا آمينا و مفيدا في تشخيص و علاج حالات الألم البطني المزمن.

## Introduction

It is well known that the clinical complaint of chronic abdominal pain is a troublesome dilemma confronting both the medical and surgical care professionals<sup>[1]</sup>. These patients presenting with chronic abdominal pain of unsettled aetiology commonly have been suffering for long periods which may rank to years in some cases<sup>[1-2]</sup>. Also they have been examined by many experts and have been submitted to a lot of diagnostic investigations but, regretfully , no precise aetiology of their problem could be elicited. At current surgical practice with the rapid introduction and developments in laparoscopic technology, laparoscopy can provide a remarkable and extensive view of the abdominal cavity. Thus, laparoscopy can be expected to be a useful tool to obtain a better and superior information than that obtained using non-invasive investigations. This study tries to evaluate the role of diagnostic and therapeutic laparoscopic abilities in the management of patients with chronic abdominal pain.

## Patients and Methods

We reviewed in this study (49) patients with chronic abdominal pain of undiagnosed aetiology for the period 01/09/2009–01/09/2011 whom have

been submitted to diagnostic laparoscopy. The patients group consisted of (38) females and (11) males with an average age of (35) years (17-76 years). General anaesthesia and standard postoperative care have been adopted. All cases of diagnosed intra-abdominal malignancies have been excluded from the study. Abdominal pain persisting for more than (4) months have been considered to be a chronic one [2]. The average duration of chronic abdominal pain in our study was (4) years (4-13 years). We investigated the patients subjective experience of their abdominal pain in two stages :prelaparoscopic and postlaparoscopic intervention. The laparoscopy have been performed according to conventional standard techniques and instruments. In those patients with history of previous laparotomy for abdominal or pelvic surgery in whom abdominal adhesions were expected there have been some modification in the creation of pneumoperitoneum .This modification consisted of inserting the Veres needle in a scarless area of the abdominal wall. This was commonly in the left subcostal region in an attempt to creat a safe pneumoperitoneum ( Plummer's procedure). After creation of a satisfactory pneumoperitoneuma (10) mm trocar was introduced to be the telescopic port. This gave us an initial general view of the peritoneal cavity

and the presence and sites of any intra-abdominal adhesions. After good assessment of the intra-abdominal adhesions the sites of other presumed ports sites have been determined accordingly. Obtaining a good view of the peritoneal cavity was so essential to examine and record any suspected abnormalities. Any intra-abdominal adhesions were considered to be non-pathological /insignificant if they have been assessed to have no preventive/restrictive effect on movements of organs and/or its distension [3-4]. Adhesiolysis have been performed using scissors or laparoscopic hook cautery in coagulation and/or cutting mode. All adhesions have been dealt with as close as possible to the abdominal wall.

### **Results**

According to this study the most common findings were intra-abdominal adhesions. It have been detected in (35) patients (71 %) out of the whole group. Adhesiolysis was performed for (31) patients out of these (35) patients while the remaining (4) patients have been offered no any interference and adhesions were kept undisturbed as they had been judged to be insignificant. Mesenteric lymphadenopathy have been discovered in (3) patients which had been shown latter to be secondary to a latent chronic upper respiratory tract infections. Two patients got a unilateral inguinal hernia : both on the left side although they were not evident on clinical examination. In one patient the appendix showed features of abnormal looking and have been considered to be a case of appendicitis for which laparoscopic appendectomy was performed. Of the whole (49) patients (8) patients (16.3 %) showed no any abnormality on laparoscopy. These eight patients together with the (4) patients

considered to have insignificant intra-abdominal adhesions constituted a group of (12) patients which have been designated as the diagnostic laparoscopy group.

Table (1) demonstrates laparoscopic findings in this study. In cases of diagnostic laparoscopy the average operating time was (33)minutes (25-48min) while the average operating time was (49) minutes (32-83min) for the cases of therapeutic laparoscopy in which adhesiolysis was performed. The average inpatient hospital stay was (3) days (1-6 days).

Average time required to regain home and/or work activity was (6)days (3-10 days). The postoperative outcome was assessed after a (12)months follow-up using a standard questionnaire with the data being filled by the worker. All patients in this study did an uneventful postoperative course. We could keep contact with only (47) patients (95.9 %) out of the whole group for follow-up. Of the (31) patients who underwent laparoscopic adhesiolysis only (29) could be contacted for follow-up and assessment. Of these (29) patients only (25) patients had reported complete resolution of their complaint or at least experienced a remarkable relieve. The remaining four patients had reported no detectable change or improvement of their problem postlaparoscopic adhesiolysis. The two patients with left sided inguinal hernias have been managed with laparoscopic hernioplasty and both of them had reported complete resolution of their abdominal pain. Regarding the one patient with abnormally looking appendix, on follow-up he reported that his pain had been disappeared completely postlaparoscopic appendectomy.

Regarding the diagnostic laparoscopy group which consisted of

(12) patients , only (10) patients of them could be contacted for follow-up. Out of these (10) patients four patients reported no improvement postlaparoscopy while (6)patients reported considerable relieve of their complaints after they had been informed of being completely normal : this may ruminates the suggestion that their abdominal pain may be of a psychogenic origin.

This study revealed that an overall (34) patients out of (49) patients of patients complaining of chronic abdominal pain (=69.3%) had reported resolution or improvement of their complaints following laparoscopical examination with or without therapeutic intervention.

### **Discussion**

It is easy to recognize that patients with chronic abdominal pain constitute a category which may be problematic to medical/surgical care professionals. Reviewing the literature showed that only a few reports had indicated the significance of diagnostic laparoscopy in the management of chronic abdominal pain complaint. Nevertheless, these reports do suggest that diagnostic laparoscopy should be implicated in the management of patients with chronic abdominal pain especially if they have had underwent previous abdominal and/or pelvic surgery or pelvic inflammatory disease in their medical history [5-6]. Experimental laparoscopic surgery on animals proved that this type of surgery is uncommonly associated with postoperative adhesion formation [7-8]. From the point of view of clinical surgery, Nezhad et al. had reported that laparoscopic adhesiolysis was so effective in reduction of peritoneal adhesions and was associated with a low recurrence rate of postoperative adhesions [9]. Smith et al. in their study showed that all patients with

chronic abdominal pain of undiagnosed aetiology had intra-abdominal adhesion as the only abnormal finding during diagnostic laparoscopy and that laparoscopic adhesiolysis was so beneficial in (82%) of their patient group after a period of (10) months follow-up [10]. Dellinger et al. also reported a good or beneficial postoperative outcome in (80%) of their patients group following laparoscopic adhesiolysis [11]. It can be well realized from gynecological point of view that formation of adhesions is a well known aetiology of infertility and chronic pelvic pain. Williams et al. reported that a constant pelvic pain in the same location for a minimum of (6) months is usually associated with organic disease most oftenly pelvic adhesions or pelvic endometriosis. Their study also incriminated adhesions, particularly those that can limit the bowel movements and/or organs distention, as the most likely aetiology to cause pain than adhesions in other sites. Pain due to adhesions is well correlated with local peritoneal tension. Increase in the parietal peritoneal tension is the mainstay in pain experience as parietal peritoneum is of high somatic innervation [12].

This study detected an intra-abdominal pathology in (41 out of 49= 83.6 %) of all the patients who have been subjected to diagnostic laparoscopy which is well comparable with other published studies [13]. Thirty-four patients out of (49) patients (=69.3 %), who had underwent laparoscopy for different intra-abdominal lesions, had reported good postoperative results which also agrees well with other reports. Adams et al. had reviewed records of (79) patients who have had laparoscopic appendectomies for chronic lower abdominal pain. Ninety percent of these patients reported excellent postappendectomy results.

Histopathological study of all appendectomies showed abnormalities in (94%). The appendices appeared to be abnormal at laparoscopy in the all cases reviewed. At the same time no other abdominal/pelvic abnormalities could be detected [14].

In this study all the appendices were of normal looking during diagnostic laparoscopic examination apart from one case which had underwent appendectomy that had been followed by complete resolution of pain .In view of the study by Adams et al., it may be recommended to practice laparoscopic appendectomy in all patients with chronic right lower quadrant abdominal pain even if the appendix showed no gross abnormalities on laparoscopic inspection.

### **Conclusion**

According to the results obtained from this study we can cite that diagnostic laparoscopy with or without therapeutic intervention is a safe and rewarding minimally invasive investigation which can be adopted in the management of patients with chronic abdominal pain. Also we can conclude that laparoscopic adhesiolysis can help many cases of patients with chronic abdominal pain.

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**Table1** showing laparoscopic findings

<b>Laparoscopic Findings</b>	<b>Number</b>	<b>Percentage</b>
<b>Significant Adhesions</b>	31	( 63.2 %)
<b>Insignificant Adhesions</b>	4	( 8.1 %)
<b>Mesenteric Lymphadenopathy</b>	3	( 6.1 %)
<b>Inguinal Hernias</b>	2	( 4 %)
<b>Abnormally Looking Appendices</b>	1	( 2 %)
<b>No Abnormality Detected</b>	8	( 16.3 %)
<b>Total</b>	49	( 100 %)