



THE IMPACT OF ELECTIVE DIAGNOSTIC LAPAROSCOPY IN DIAGNOSING CHRONIC ABDOMINAL PAIN

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ABSTRACT

Background: Chronic idiopathic pain syndromes are amongst the most challenging and demanding conditions to treat across the whole age spectrum. Despite these patients having undergone numerous diagnostic work ups, their pain remains a challenge to all known diagnostic and treatment methods. **Objectives Of The Study:** To study the advantages of diagnostic laparoscopy in identifying the etiology of undiagnosed chronic abdominal pain. **Materials And Methods:** **Study Centre:** Institute of General Surgery, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai. **Duration Of Study:** October 2019 to October 2020. **Study Design:** Single-center cross-sectional study. **Sample Size:** All the patients who came to general surgery OPD during my one-year study period 35 { $n = Z^2 \frac{1-\alpha}{2} P(1-P) / e^2$ $P=3\%$ $e=5\%$ $Z=1.96$ }. **Inclusion Criteria:** All cases of undiagnosed (by conventional methods and investigations such as detailed history, clinical examination, blood counts, urine examination, USG abdomen, Plain x ray abdomen) chronic abdominal pain >3 months duration of both sex. All cases of undiagnosed chronic abdominal pain in patients >14 years of age. Cases of clinically diagnosed chronic abdominal pain of >3 months duration not responding to the treatment given. **Exclusion Criteria:** Persons suffering from any kind of cognitive dysfunction are excluded from the study. **Results:** All 35 patients underwent Diagnostic Laparoscopy under General anaesthesia after all the conventional investigations did not yield any diagnosis. 35 patients in the age group of 15 – 69 years were involved in the study with the average age of presentation being 35 years. 66% of the study population were females. The most common finding at laparoscopy in our study was postoperative adhesions (51.42%). It was followed by patients who had a normal abdominal finding at laparoscopy (17.14 %) and recurrent appendicitis in 14.28 %. The average duration of hospital stay being 5.5 days. Therapeutic intervention done at the time of diagnosis relieved 70% of patients of their pain at the end of three months. **Interpretation And Conclusion:** Diagnostic laparoscopy has an effective diagnostic accuracy and therapeutic efficacy in the management of patients who present to us with chronic abdominal pain especially in whom conventional methods of investigations have failed to elicit a cause for the pain. Ability to pin point a cause for the abdominal pain or exclude a more major cause for pain not only avoids further investigations but also plays a significant role in alleviating the fears in the minds of the patients. Laparoscopy prevents unnecessary laparotomy in a significant number of cases. Diagnostic laparoscopy has a definitive role in the management of patients with chronic pain abdomen and should be an important investigative tool in the armamentarium of all practicing surgeons.

KEYWORDS : chronic abdominal pain, diagnostic laparoscopy, adhesive colitis, therapeutic, diagnostic efficacy

INTRODUCTION

Patients with chronic abdominal pain are amongst the most difficult to manage. Potentially it can be unrewarding for both the patient and the treating physician. Chronic abdominal pain is a difficult complaint. It leads to evident suffering and disability, both physically and psychologically. It is associated with poor quality of life. Studies conducted with large community samples or hospital populations imply chronic abdominal pain is a pervasive problem.

Most patients in this group would have already undergone many diagnostic procedures. More than 40% of the patients presenting with chronic abdominal pain have no specific etiological diagnosis at the end of their diagnostic workup.

These searches for pathology often include such procedures as upper and lower gastrointestinal endoscopies, computerized tomography and screening for undetected carcinoma. When the limits of reasonable non-invasive testing are reached in an individual patient's illness, which is likely to occur without the extensive testing practiced today, the surgeon is often consulted. A high chance of a non-therapeutic abdominal exploration naturally results. Clearly diagnostic laparoscopy is an important intermediate option between refusing to explore a patient's abdomen and performing a laparotomy.

Diagnostic laparoscopy can be done under direct vision with simple equipment as it does not require a video camera or the

electronic gadgetry associated with laparoscopic surgery. With advances in optics, laparoscopy allows perfect visual examination of the peritoneal cavity and further makes possible histological diagnosis of target biopsy under vision.

Laparoscopy is as much a surgical procedure as an exploratory laparotomy, often just as informative, and to the trained surgeon affords a better view of the entire peritoneal cavity than the usual exploratory laparotomy. To achieve a high rate of positive diagnosis from laparoscopy requires much more than correct technique, it requires a thorough background of surgery, sound clinical acumen as also knowledge and awareness of abdominal pathology.

Rationale of the study: Abdominal pain is the most common clinical presentation encountered in the primary care most of the conditions resolved in the acute phase but some conditions is persistent even after 3 months, which needs to be further evaluated. Even after conservative management for many months, if the condition is unresolved sometimes intervention by diagnostic laparoscopy is necessary to identify the cause.

So, with this background the study was done to identify the advantages of diagnostic laparoscopy among the patients with chronic abdominal pain for minimum period of more than 3 months and the problem which is not controlled by conservative management, so the finding of the study will shed the lights in the gaps of the literature.

AIM

The aim was to study the advantages of diagnostic laparoscopy in identifying the etiology of undiagnosed chronic abdominal pain.

OBJECTIVE

To study the advantages of diagnostic laparoscopy in identifying the etiology of undiagnosed chronic abdominal pain.

MATERIALS AND METHODS

The study group consisted of 35 patients admitted with pain abdomen of 3 months duration. A detailed history was taken from each of the patient as per the proforma designed before the commencement of the study. The clinical examination findings were also recorded in the proforma. The results were then tabulated. The recorded data included particulars of the patient, duration of illness, site of abdominal pain, and other associated symptoms such as vomiting or fever or white discharge per vagina, past history of surgical explorations, co morbid conditions, investigations. Subsequently the intra operative findings, therapeutic/diagnostic intervention done, correlation of the intra operative findings with the histopathology report, complications during the intra and post-operative period and the relief from the pain were recorded and analysed.

As a part of the work up of a patient the following investigations were done routinely Hemoglobin estimation, Bleeding time, Clotting time, Random blood sugar, Total leucocyte count and differential count, Serum electrolytes, Blood urea, Serum creatinine, Urine for albumin, sugar and microscopy, Electrocardiogram, Ultrasonogram abdomen and Chest X Ray.

The other investigations done are Erythrocyte Sedimentation Rate, Fasting blood sugar and post prandial blood sugar, Erect X Ray abdomen, Barium studies, Esophago gastro duodenoscopy, Colonoscopy, Computerised tomograph of the abdomen. Written informed consent was taken prior to all the procedures.

Inclusion Criteria

1. All cases of undiagnosed (by conventional methods and investigations, such as detailed history, clinical examination, blood counts, urine examination, USG abdomen, Plain x ray abdomen) chronic abdominal pain >3months duration of both sex.
2. All cases of undiagnosed chronic abdominal pain in patients > 14years of age.
3. Cases of clinically diagnosed chronic abdominal pain of > 3 months duration not responding to the treatment given.

Exclusion Criteria

1. Persons suffering from any kind of cognitive dysfunction are excluded from the study

PROCEDURE

All surgeries were carried out under general anaesthesia. All patients had a Ryle's tube inserted and bladder catheterized prior to anaesthesia. Pneumoperitoneum was created using Hasson's technique. A 10mm umbilical camera port was inserted and two lateral 5mm ports depending on the organ of interest and the suspected pathology. The sites of port insertion varied depending on the presence or absence of previous abdominal surgery scars. Diagnostic laparoscopy of the abdomen was carried out carefully inspecting the entire visceral contents of the abdomen for any pathology. Starting from the liver, the gall bladder, anterior surface of the stomach, large intestine, entire length of small intestine with particular emphasis on appendix and terminal ileum, anterior surfaces of the retroperitoneal organs, uterus, fallopian tubes

and ovaries and peritoneal surface. Adhesions between the bowel loops or to the anterior abdominal wall was also looked for. The surgical procedure carried out were depending on the intra operative findings and as per indications which ranged from biopsy from suspicious lesions to adhesiolysis to appendectomy. All the ports were closed using absorbable suture materials at the end of the procedure.

Statistical Analysis

All the collected data were tabulated on MS Excel sheet. All the above collected data will be analysed and conclusions will be derived through statistical analysis using Mann-Whitney U test for continuous variables and Chi-square test for categorical variables.

RESULTS

Table 1: Age & Sex Distribution

AGE IN YEARS	NO OF PATIENTS (n=35)	PERCENTAGE (%)
15-30	16	45.71
31-40	7	20
41-50	9	25.71
51-60	2	5.71
61-70	1	2.85
TOTAL	35	100

SEX	NO OF PATIENTS	PERCENTAGE (%)
MALE	12	34.28
FEMALE	23	65.71

Table1: In this study there were 35 patients, the highest number of cases were reported at the age group of 15-30 (45.71%) years. The youngest patient in our study was 15 years and the oldest patient being 69years. The mean age of presentation was 35 years. This study shows a female preponderance to chronic pain abdomen (66%).

Table 2: Shows Duration Of Pain Before Laparoscopy

DURATION OF PAIN IN MONTHS	NO OF PATIENTS (n=35)	PERCENTAGE %
3-12	12	34.28
12-18	3	8.57
18-36	18	51.42
>36	2	5.71

Table 3: Location Of Pain

REGION OF PAIN	NO OF PATIENTS (n=35)	PERCENTAGE %
UPPER ABDOMEN	6	17.14
PERI UMBILICAL	13	37.4
LOWER ABDOMEN	4	11.42
DIFFUSE ABDOMEN	12	34.28

Table 2 & 3: This study shows that almost 51.42% of patients was suffering from chronic abdominal pain for more than 18 months duration and 37.4% of patients complained of periumbilical pain followed by 34.28% diffuse abdominal pain

Table 4: Shows Number Of Patients With History Of Previous Abdominal Surgeries

HISTORY OF SURGERY	NO OF CASES	PERCENTAGE %
PRESENT	22	62.85
ABSENT	13	37.14

Table 5: Findings At Laparoscopy And Intervention

DIAGNOSIS	PROCEDURE	NO OF PATIENT N=35	PERCENT AGE %
POSTOPERATIVE ADHESIONS	ADHESIOLYSIS	18	51.42
NORMAL STUDY	NO INTERVENTION	6	17.14

RECURRENT APPENDICITIS	APPENDICETOMY	5	14.28
CHRONIC CHOLECYSTITIS	CHOLECYSTECTOMY	2	5.71
CARCINOMAS	BIOPSY	2	5.71
MESENTERIC LYMPHADENOPATHY	BIOPSY	1	2.85
TUBERCULOSIS STRICTURE	RESECTION ANASTAMOSIS ,ATT	1	2.85

Table 7: Postoperative Pain Relief

DURATION IN MONTHS	POSITIVE OUTCOME	NEGATIVE OUTCOME
1 MONTH	85.71	14.29
3 MONTHS	70	30

Table 4&5: In our study of 35 patients, the most common finding was post-operative adhesions, in 51.42% of patients. Most of the patients in this group were females and had a past history of abdominal surgery, tubectomy in most cases. Adhesiolysis was done in all these patients. The next most common finding at laparoscopy in our study was a normal study (17.14%). These patients were just observed and followed up.

Recurrent appendicitis was our intraoperative diagnosis in 14.28% of our patients. The appendices felt firm to palpate per operatively. Appendectomy was done in such patients. Subsequent histopathological examination confirmed our diagnosis in most of these cases. One of the patient in this group had adhesions between the appendix and the lateral abdominal wall. Adhesiolysis and appendectomy was done. HPE turned out to be chronic inflammation in the appendix and hence included in this group for statistical analysis. We did laparoscopic cholecystectomy for 2 of our patients. HPE confirmed our findings in this group of patients. 2 patients were diagnosed with carcinoma per operatively. One of them being Carcinoma pancreas and the other had peritoneal deposits whose biopsy turned out to be Adeno Carcinoma. Mesenteric lymph node biopsy was done in 1 patient. Diagnosis of tubercular strictures was made in 1 patient. This patient underwent resection and anastomosis of the long segment stricture and stricturoplasty for another short segment stricture by open method. Postoperatively, he was started on anti-tubercular drugs and the patient followed up. Histopathological examination confirmed tuberculosis.

In most of our cases there was no post-operative complications except in three patients who developed surgical site infection which was managed conservatively by appropriate antibiotic cover and alternate day wound dressing. No mortality was encountered in our study group. Post-operative hospital stay ranged from 4 to 11 days with a mean duration of stay of 5.5 days. The average length of the operative time was 67.14 minutes and two patients required conversion to an open procedure. Both the cases were converted due to technical difficulties.

During the follow up period, all patients were re-evaluated for pain. The patients were reviewed at one month and three months post operatively. Subjective assessment of pain was done during the follow up and positive outcome (less pain or disappearance of pain) was noted and negative outcome (persistence of pain or worsening pain) was also noted. 5 patients were lost to follow up at the three-month time frame.

CONCLUSION:

Laparoscopy has an effective diagnostic accuracy and therapeutic efficacy in the management of patients who present to us with chronic abdominal pain, especially in whom conventional methods of investigations have failed to elicit a

cause for the pain. Laparoscopy is safe, quick and effective modality of investigation for chronic abdominal pain. Diagnostic laparoscopy has a high diagnostic and therapeutic efficacy and ability to pin point a cause for the abdominal pain or exclude a more major cause for pain not only avoids further investigations but also plays a significant role in alleviating the fears in the minds of the patients. Not only does laparoscopy point to a diagnosis, it has the added advantage that therapeutic intervention can be done at the same sitting in most cases thus avoiding another hospitalization or another exploration of the abdomen. Laparoscopy prevents unnecessary laparotomy in a significant number of cases. Diagnostic laparoscopy has a definitive role in the management of patients with chronic pain abdomen and should be an important investigative tool in the armamentarium of all practicing surgeons.

SUMMARY

This study involving 35 patients was conducted in the surgical wards of Madras Medical College, RGGGH, Chennai. This study was undertaken to evaluate the efficacy of diagnostic laparoscopy as an investigative modality in patients presenting with abdominal pain of duration more than 3 months.

All 35 patients underwent Diagnostic Laparoscopy under General anaesthesia after all the conventional investigations did not yield any diagnosis. 35 patients in the age group of 15 – 69 years were involved in the study with the average age of presentation being 35 years. 66% of the study population were females.

51% of the patients had duration of pain between 18 -36 months and 37% of them being in the periumbilical region. 63% of the patients had a previous history of abdominal surgeries. The most common finding at laparoscopy in our study was postoperative adhesions (51.42%). It was followed by patients who had a normal abdominal finding at laparoscopy (17.14 %) and recurrent appendicitis in 14.28 %. 2 cases required conversion to laparotomy on technical grounds.

Average duration of surgery in our study was 67.14 minutes. The average duration of hospital stay being 5.5 days. There was no mortality in our study. Laparoscopy established the diagnosis in 82.85% of our patients. Therapeutic intervention done at the time of diagnosis relieved 70% of patients of their pain at the end of three months.

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