

Original Research Article

Role and Efficacy of Diagnostic Laparoscopy in 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:** To study the efficacy of diagnostic laparoscopy in identifying the etiology of undiagnosed chronic abdominal pain. **Materials and methods:** Thirty two patients with chronic pain abdomen were included in this study. The pain in all these patients was either of unclear etiology or not responding to the treatment given after clinical assessment and lasting for more than 3 months duration. Pain of shorter duration and patients less than 15 years of age were excluded from the study. All patients were subjected to diagnostic laparoscopy and procedure. The results were tabulated and analyzed. **Results:** Females were more affected by this condition and the most common site of pain being the periumbilical region. A definitive diagnosis was made per operatively in 28 patients (87.50%) while in the remaining four (12.50%), no obvious pathology was detected. The most common findings in our study was recurrent appendicitis (62.5%), followed by post operative adhesions (12.5%), gall stones (6.25%), tubo ovarian pathology (3.12%) and abdominal TB (3.12%). Pain assessment done at 1 month follow up showed pain relief in 84.6% and 3 month follow up showed pain relief in 87.5% of patients. **Conclusion:** Recurrent appendicitis form a majority of cause for causing chronic pain abdomen. Diagnostic laparoscopy is a safe and effective modality for the diagnostic and therapeutic management of such patients.

Keywords: laparoscopy, appendicitis, abdominal pain, adhesions, laparotomy

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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.[1] It leads to evident suffering and disability, both physically and psychologically. Chronic abdominal pain is associated with poor quality of life.[2] 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.[3,4] These searches for pathology often include such procedures as upper and lower gastrointestinal endoscopies, computerized tomography and screening for undetected carcinoma.

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.[5]

As Hutchinson stated 70 years ago, —In the treatment of chronic abdomen the most important thing is to catch the patient early. If she has once set her feet on the slippery slope which leads to successive operations she is undone.[6] In many cases it prevents unnecessary/negative laparotomy. The rapid recovery and return to normal activity that follow diagnostic laparoscopic surgery provide an extra incentive for the surgeon to adopt more laparoscopic techniques.

Materials and Methods

This study was conducted in the surgical wards of Bowring and Lady Curzon hospital, attached to Bangalore Medical College and Research Institute, Bangalore. The study group consisted of 32 patients admitted to the surgical wards of Bowring and Lady Curzon Hospital, Bangalore with pain abdomen of 3 months duration or more between August 2014 to September 2016. 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, other associated symptoms such as vomiting or fever or white discharge per vagina, past history of surgical explorations, co morbid conditions, investigations. Subsequently the

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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. Written informed consent was taken prior to all the procedures.

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 >15 years of age.

Cases of clinically diagnosed chronic abdominal pain of >3 months duration not responding to the treatment given.

Exclusion Criteria

· All cases of undiagnosed chronic abdominal pain <3 months duration of both sex.

· All cases of undiagnosed chronic abdominal pain in patients <15 years of age.

· Oncological Patients, Pregnant Women, Women who had recently given birth, Patients with coagulation defects. Patients with acute myocardial infarction. Patients with critical illness, patients who are medically unfit for surgery.

· Patients less than 15 years of age

· Large Ventral and diaphragmatic hernia.

· Patients refusal

All surgeries were carried out under general 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 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. Umbilical ports was closed using absorbable port closure suture materials at the end of the procedure and rest of the port incision were closed with non absorbable suture.

Statistical Analysis

Data was recorded in SPSS (trial version 24.0) And frequency tables and proportion was used to define the same.

Results

Table 1: Age and Sex wise distribution of patients Chronic Pain Abdomen

Age in years	Number of patients	Percentage (%)
15-30	12	37.50
31-40	15	46.87
41-50	4	12.50
51-60	1	3.67
61-70	0	0
Males	10	31.25
Females	22	68.75

As per table 1 out of 32 patients with chronic pain abdomen showed a peak incidence of chronic pain abdomen in the third decade. The youngest patient in our study was 18 years and the oldest patient

being 58 years. The mean age of presentation was 34 years. And the study was female preponderance to chronic pain abdomen (69%).

Table 2: Duration of Pain before Diagnostic Laparoscopy

Duration of pain (months)	Number of patients	Percentage (%)
3-12	12	37.50
12-18	5	15.62
18-36	14	43.75
>36	1	3.12

As per table 2 44% of the patients in our study gave a history of pain abdomen of duration between 18 to 36 months.

Table 3: Location of Pain

Region of Pain	Number of patients	Percentage (%)
Upper abdomen	4	12.5
Lower abdomen	4	12.5
Peri-Umbilical	14	43.75
Diffuse abdomen	10	31.25

As per table 4 the majority of the patients in our study of 14 patients presented with periumbilical region (43.75%) pain. It was followed closely by diffuse pain abdomen. (31.25%)

Table 4: Findings at Laparoscopy and Intervention done

Findings	Procedure	Number of patients	Percentage (%)
Recurrent appendicitis	Appendectomy	20	62.50
Post operative adhesions	Adhesiolysis	4	12.5
Chronic cholecystitis	Cholecystectomy	2	6.25
Ovarian Cyst	Aspiration	1	3.12
Tuberculosis	CAT 1 ATT	1	3.12
Normal study	Observation	4	12.5

As per table 4 out of 32 patients, the most common finding was recurrent appendicitis in 62.50%

of patients. Most of the patients in this group were females. Recurrent appendectomy was done in all these patients. The next

most common finding at laparoscopy in our study was a post operative adhesions and normal study (12.50%) each. Adhesiolysis was done in all these patients with adhesions and in patients with normal study follow up observation was done. Recurrent appendicitis was our per operative diagnosis in most 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. We did laparoscopic cholecystectomy for 2 of our patients. HPE confirmed our findings in this group of patients. One patient was found to have abdominal Tuberculosis for which Cat 1 ATT was started. 4 out of 32 patients in our study no significant abnormality was found. One patient was found to have haemorrhagic ovarian cyst for which aspiration was done. 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. Mean duration of hospital stay was 5.1 days.

Discussion

Chronic abdominal pain is a common problem dealt not only by the general surgeon but by all practicing physicians. Even after extensive non-invasive work up of such patients, the exact cause of pain abdomen is seldom known. In this prospective study 32 patients were considered who were admitted in the surgical wards of Bowring and Lady Curzon Hospital, attached to Bangalore Medical College and Research Institute between August 2014 and September 2016. All patients had pain abdomen lasting for more than a period of three months.

In a study involving 34 patients by Klingensmith et al [7] the majority were women (85%). The average age in their study was 39 years (Range 21-75 years). In a study by Thanapongsathorn et al [8] of 30 patients with chronic right lower quadrant pain, the average age was 27.5 years. In a study by Raymond et al [9] for utility of laparoscopy in chronic abdominal pain involving 70 patients, the average age was 42 years. In a study by Gouda M El-Labban and Emad N Hokkam involving 30 patients, the average age of presentation was 36 years. In a study by Raymond et al [9] of 70 patients, the duration of pain ranged from 3 months to 5 years. In a study by Gouda M El-Labban and Emad N Hokkam [10,11,12] involving 30 patients, the duration of pain ranged from 3 to 15 months.

Lavonius M et al [13] in their study of laparoscopy for chronic abdominal pain in 46 patients reported post operative adhesions in 63% of cases. In a study by Klingensmith et al involving 34 patients, 56% of them underwent adhesiolysis. In a study by Vafa Shayani et al [14] involving 18 cases, laparoscopic adhesiolysis resulted in a 77.8% cure rate from chronic abdominal pain.

In a study by Dunker S et al [15] laparoscopic adhesiolysis resulted in a positive outcome in more than 50% of patients. In a study by Salky B A et al [16] involving 265 patients, normal laparoscopic findings were recorded in 24%. In a study by Kinnaresh Ashwin Kumar Baria involving 50 patients, 10% of them had no identifiable cause detected after laparoscopic examination. In a study by Vander Velpen et al [17] 23% of patients with uncertain diagnosis at the end of the procedure was reported. In a study by Klingensmith et al [15] involving 34 patients, 26% of patients needed no operative intervention other than laparoscopic exploration. In a study by Onders RP and Mittendorf EA [18] involving 70 patients, no abnormality was detected in 14.2% of cases.

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.

Conflict of Interest: Nil Source of support: Nil

Diagnostic laparoscopy has a high diagnostic and therapeutic efficacy. Ability to pinpoint 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.

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