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General Surgery

ROLE OF DIAGNOSTIC LAPAROSCOPY IN PATIENTS WITH CHRONIC RIGHT ILIAC FOSSA PAIN: A PROSPECTIVE OBSERVATIONAL STUDY

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ABSTRACT Abdominal pain of longer duration is associated with poor quality of life and significant level of depressive symptoms. Chronic right iliac fossa pain with normal radiological and laboratory findings is common indication for diagnostic laparoscopy by general surgeon. In case of diagnostic uncertainty, laparoscopy may help to avoid unnecessary laparotomy and provide accurate diagnosis. Diagnostic laparoscopy is a minimally invasive method for the diagnosis of intra-abdominal diseases through direct inspection of intra-abdominal organs. Diagnostic laparoscopy also allows tissue biopsy, culture acquisition, and a variety of therapeutic interventions. Laparoscopic ultrasonography can also be performed during diagnostic laparoscopy to evaluate organs that are not amenable to direct visual inspection.

KEYWORDS : abdominal pain, chronic right iliac fossa pain, diagnostic laparoscopy

INTRODUCTION

The abdominal cavity is commonly described as the 'Pandora's box', as one is bound to be astonished after opening it. Laparoscopy is as much a surgical procedure as exploratory laparotomy and, very often, just as informative. Apart from visualizing a large part of the abdominal cavity, a precise targeted biopsy, fine needle aspiration cytology or fluid analysis can also be done. Laparoscopy offers a distinct advantage over ultrasound or CT scan as it is capable of detecting lesions less than 5 mm in size especially peritoneal metastasis, which cannot be detected by these investigations.[1]

Diagnostic laparoscopy gives all benefits of minimal invasive surgery. Not much of pain, shorter period of hospitalization, small scars, low infection rates and most importantly, accurate diagnosis and the correct treatment of most of the intra-abdominal conditions are the gifted things.

AIMS AND OBJECTIVES

The aim is to observe the efficacy of laparoscopy as a tool to diagnose chronic right iliac fossa pain in patient with the normal radiological findings.

The primary objectives is to find out cause of chronic right iliac fossa pain in patients of normal radiological findings and to study the proportion in which diagnostic laparoscopy leads to pain relief.

MATERIALS AND METHODS

A hospital based prospective study was conducted with 60 patients to evaluate the importance of diagnostic laparoscopy as a tool for diagnosing chronic right iliac pain. Study design: A hospital based prospective observational study

Study Duration: 18 months

Study area: The study was done at our tertiary care centre in the department of general surgery on attending OPD/IPD.

Study population: All patients with chronic right iliac fossa pain attending OPD/IPD of tertiary care hospital who fulfilled the inclusion criteria.

Sample size: 60 patients
Sample size was calculated using the formula:
$n = [z2p(1-p)]/d2$

Where: Z = table value of alpha error from Standard Normal Distribution table (0.95) Power (p) = 80% Precision error of estimation (d) = 5%
$n = [0.95 \times 0.95 \times 0.8 (0.2)] / 0.05 \times 0.05 = 57.8$

Hence a sample size of 60 patients was considered adequate for our study.

Inclusion criteria

All cases of undiagnosed chronic right iliac fossa pain in both sexes.

All patients of both sexes on and above 18 years of age.

Patients with history of right iliac fossa pain for 3 months or more, if physical examination and diagnostic tests are inconclusive.
Patient consenting to study procedure

Exclusion criteria:

All patients below 18 years old age with chronic undiagnosed right iliac fossa abdominal pain
Pregnant females
Patients not surgically fit to undergo operative intervention, due to any cause.
Patients with malignancy
Patients with coagulation defects.

METHODOLOGY

Patients of chronic right iliac fossa pain of age more than 18 years were admitted in the surgery ward. An informed consent was taken in written from patients or patient's attendant. After patient's admission, detailed history was recorded like duration of illness, past history of any medical or surgical illness and details of per abdomen examination. After examining the patient clinically, he or she is advised for non-invasive investigations like complete hemogram, TLC, urine routine microscopy, RFT included urea level and creatinine level, ECG. Radiological investigations like in chest x-ray, x-ray erect abdomen standing view which also shows presence of no any other abnormality detected. Patient then evaluated for the USG (A+P) which also shows no abnormality seen. Only patients, in whom imaging findings were not corroboratory with symptoms, were subjected diagnostic laparoscopy. Although local, regional, and general anaesthesia has all been used successfully for laparoscopic surgery, the vast majority of procedures are performed under general anaesthesia. AII surgeries were carried out in general anaesthesia. All patients were inserted ryles tube and catheterization prior to general anaesthesia. Diagnostic

laparoscopy was done very carefully inspecting entire visceral contents of any pathology. Surgical procedures carried out were depending on the on intra operative findings and as per indications which ranged from biopsy to adhesiolysis to appendectomy. Postoperative care depended on the extent of the procedure performed. For uncomplicated procedures the patient were observed overnight or discharged on the same day. Common problems in the immediate postoperative period included urinary retention and nausea. Antiemetic and analgesics were used liberally. Patients were given a clear liquid diet in the immediate postoperative period and resume a regular diet following morning. Patients were not restricted physically and usually may resume normal activity within one week. Patients with immediate post-operative pain relief were achieved by giving injection analgesics, by sedations. Patients was advised to follow up at 1st and 3rd months for the assessment of relieve of pain after laparoscopy. At the end of the 3rd months, more than 90% people relived with chronic RIF pain.

Pearson's chi-squared test and anova test ($p<0.05$) is used for statistical analysis.

OBSERVATION AND RESULTS

Majority of the patients (38.3%) were in the age group of 18-30 years followed by 31.7% in the age group of 31-40 years, 15% in the age group of 41-50 years, 8.3% in the age group of 51-60 years and 6.7% in the age group of >60 years. The mean age of the patients was 37.20 ± 12.51 years.

TABLE NO. 1

Age (years)	N	%
18-30 years	23	38.3%
31-40 years	19	31.7%
41-50 years	9	15%
51-60 years	5	8.3%
>60 years	4	6.7%
Total	60	100%
Mean ± SD	37.20 ± 12.51	

Distribution of patients according to Symptoms

The most common symptoms were pain (100%) followed by vomiting (45%), fever (26.7%) and abdominal distension (21.7%).

TABLE NO. 2

Symptoms	N	%
Pain	60	100%
Vomiting	27	45%
Fever	16	26.7%
Abdominal Distension	13	21.7%

TABLE NO. 3

Duration of Pain	N	%
3-12 months	34	56.7%
12-18 months	18	30%
18-36 months	6	10%
>36 months	2	3.3%
Total	60	100%

Laparoscopy Findings of patients

The most common laparoscopy finding was post-operative adhesions (55%) followed by recurrent appendicitis (13.3%), sub-acute appendicitis (8.3%), terminal ileitis (6.7%), inflamed appendicitis (5%), meckels diverticulum (3.3%) and mesenteric Lymphadenopathy (3.3%). Few (5%) patients had normal findings.

Adhesiolysis was done in all patients with post-operative adhesions while patients with recurrent appendicitis, sub-acute appendicitis and inflamed appendicitis underwent appendectomy. The patients diagnosed with meckels diverticulum underwent diverticulectomy. The patients with terminal ileitis and normal findings were just observed and followed up.

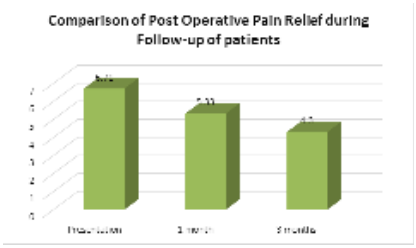
TABLE NO. 4

Laparoscopy findings	Treatment	N	%
Post-operative adhesions	Adhesiolysis	33	55%
Recurrent Appendicitis	Appendectomy	8	13.3
Subacute appendicitis	Appendectomy	5	8.3%
Terminal ileitis	No intervention	4	6.7%
Inflamed Appendicitis	Appendectomy	3	5%
Meckels Diverticulum	Diverticulectomy	2	3.3%
Mesenteric Lymphadenopathy	Biopsy	2	3.3%
Normal Study	No intervention	3	5%

The mean duration of hospital stay was 7.88 ± 2.13 days.

Comparison of Post-Operative Pain Relief during Follow-up of patients

The post-operative pain relief was assessed by Visual Analog Scale (VAS) score. The mean VAS score at presentation was 6.71 ± 0.57. The VAS Score reduced significantly at 1 month (5.33 ± 0.54) and 3 months (4.30 ± 0.53). There was significant improvement in VAS score at follow-up as per anova test ($p<0.05$).



DISCUSSION

Diagnosis and treatment plans and the importance of diagnostic laparoscopy as a tool for diagnosing chronic right iliac fossa pain are usually difficult and frustrating especially when the conventional non-invasive diagnostic tools are not able to identify the underlying pathological cause. It is one of the common surgical symptoms, and among the most challenging problems facing the clinician. Prior to the era of diagnostic laparoscopy, these patients had to undergo a battery of expensive laboratory and imaging investigations, while remaining dissatisfied.

In the present study, majority of the patients (38.3%) were in the age group of 18-30 years followed by 31.7% in the age group of 31-40 years, 15% in the age group of 41-50 years, 8.3% in the age group of 51-60 years and 6.7% in the age group of >60 years. The mean age of the patients was 37.20 ± 12.51 years. 22 (36.7%) patients were male while 38 (63.3%) patients were female.

Siriwardana RC et al[2] study evaluating Laparoscopy as a diagnostic and therapeutic option in evaluating chronic unexplained right iliac fossa pain observed common age group from 32 to 52 years.

Onders RP et al[3] study on Utility of laparoscopy in chronic abdominal pain showed median age of 42 years.

Karvande R et al[4] study assessing the role of diagnostic and therapeutic laparoscopy in chronic and recurrent abdominal pain showed that the right lower abdominal quadrant was the most prominent site (68.2%) of pain.

Guthrie GJ et al[5] study assessing whether the use of diagnostic laparoscopy with right lower abdominal pain showed out of the 284 patients that underwent diagnostic laparoscopy 233 (82%) had a positive finding at laparoscopy.

It was observed in the present study that at 1 month follow-up, there was significant improvement in 41 (68.3%) patients of which 6 (10%) showed complete regression of symptoms and 35 (58.3%) patients had subsided symptoms. There was no change in chronic right iliac fossa pain in 19 (31.7%) patients. At 3 months follow-up, there was significant improvement in 56 (93.3%) patients of which 17 (28.3%) showed complete regression of symptoms and 39 (65%) patients had subsided symptoms. There was no change in chronic right iliac fossa pain in 4 (6.7%) patients. There was significant improvement in pain relief at follow-up as per Chi-Square test.

Miller K et al[6] study assessing role of laparoscopy in chronic and recurrent Abdominal pain also showed that pain was significantly reduced by laparoscopy with providing diagnosis in 89.8% of the patients.

CONCLUSION

Diagnostic laparoscopy is an effective tool for the diagnosis and treatment of patients with chronic abdominal pain. Though invasive, in experienced hands it is safe and effective with shorter hospital stay. It avoids unnecessary laparotomies and helps in faster recovery.

Diagnostic laparoscopy has a high diagnostic and therapeutic efficacy. Not only does the laparoscopy point to a diagnosis, it has the added advantage that therapeutic intervention can be done at the same setting in most cases thus avoiding another hospitalization or another exploration of the abdomen.

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