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A Retrospective Study on Role of Diagnostic Laparoscopy and Laparoscopic Appendectomy in Chronic Right Iliac Fossa Pain

Debabrata Saha[1], Subhadip Jana[2], Dipayan Mondal[3]

Department of General Surgery, IQ City Medical College and Hospital, Mohanbagan Ave, Durgapur-713206, India.

Corresponding Author: Dr. Debabrata Saha

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ABSTRACT

INTRODUCTION: Pain in right lower abdomen is commonly encountered by general surgeons in daily practice. Diagnosis of underlying cause accurately and deciding the appropriate management can be a significant challenge. For patients with chronic right iliac fossa pain, after taking history, clinical examinations routine blood tests and imaging, if the diagnosis remains uncertain, and the radiological report shows ambiguous findings, diagnostic laparoscopy can be a valuable minimal invasive approach for exploration and management in recent era.
AIM OF STUDY: To study the role of diagnostic laparoscopy and appendectomy in management of chronic right iliac fossa pain.
MATERIALS AND METHODS: A retrospective study of 86 patients of age between 10 to 70 years presented with chronic right iliac fossa pain who attended in the Department of general surgery, I Q city Medical College and Hospital, Durgapur over a period of January 2020 to September 2024. All patient underwent diagnostic laparoscopy and managed according to the findings.
RESULT: Out of total 86 patients, positive findings were found in 98.3% and no visible gross findings in 1.7%. Females (79%) are more commonly presented in this study. Recurrent appendicitis is most common (72.1%) findings. Finally, 82.56% patient got relieved from chronic pain abdomen. Patients with positive diagnostic laparoscopy findings had a statistically significant (P-value 0.036) pain relief.
CONCLUSION: Diagnostic laparoscopy is very much helpful for diagnosis and management of chronic right iliac fossa pain especially when there is diagnostic dilemma. Major cause of pain abdomen is recurrent appendicitis. After proper selection of patient chronic right lower abdominal pain can be relieved significantly by elective laparoscopic appendectomy with very low morbidity and mortality.
Keywords: Chronic right iliac fossa pain, Diagnostic laparoscopy, laparoscopic appendectomy, Recurrent appendicitis.

INTRODUCTION

Persistent right iliac fossa pain (RIF) is a common clinical presentation encountered by general surgeons. Accurately diagnosing its underlying cause and determining the most suitable surgical intervention continue to pose significant chalanges.[1]

Many patients with chronic abdominal pain undergo multiple radiological investigations, but cause of pain abdomen still undiagnosed in over 40% of patients.[2,3]

Laparoscopy has improved and gained widespread recognition as a useful technique in general surgery during the last few decades, in comparison with open surgery, laparoscopy is better due to lower complication rate and early return to routine work.[3]

Diagnostic laparoscopy is advantageous as it provides direct visualization of intraperitoneal organs through minimal surgical incisions and allows simultaneous therapeutic intervention in the same setting.[4,5,6] The diagnostic laparoscopy also avoids repeated exposure to radiation from Computed tomography scan in especially female of child bearing age.[7]

In this study chronic right iliac fossa pain is defined as duration of pain more than 3 months.[8] The beneficial use of diagnostic laparoscopy in managing chronic right lower abdomen pain continues to be unclear due to the small number of published trials.

Against this background the present study aims to systematically investigate the underlying etiologies of chronic RIF pain and to evaluate postoperative outcome following diagnostic laparoscopy, with particular emphasis on symptom resolution.

MATERIALS & METHODS

A consecutive series of 86 patients who presented with history of pain right lower abdomen for more than three months, visited the outpatient department or emergency of IQ City Medical College in the dept of General Surgery went through this retrospective study. Diagnostic laparoscopy was carried in all 86 patients and depending on pathology detected, surgery was proceeded. The specimen after removal sent for histopathological examination to confirm the diagnosis. The patients were monitored post-operatively for three months.

Period of study: Jan 2020- Sept 2024

Type of study: Retrospective

Inclusion criteria: all patients aged 10-70 years with pain in right lower abdomen for greater than 3 months.

Exclusion criteria: All patients have proven the cause of the right iliac fossa pain by radiological investigations and Pregnant patients.

Every patient, aged 10 to 70, has experienced lower abdominal pain in their right side for longer than three months. The trial comprised 86 individuals with persistent lower abdominal pain on the right side. After proper pre-anesthetic fitness, patients were taken up for diagnostic laparoscopy. Based on the intra-operative findings, decisions were taken regarding how to proceed ranging from laparoscopic appendectomy to even hemicolectomy. Analysis was done on the gathered clinical data, which included sociodemographic information, intraoperative and laparoscopic results, and clinical factors. At the onset of general anesthesia, the patients received a prophylactic dosage of metronidazole and third-generation cephalosporins.

Diagnostic laparoscopy was performed through a standard 3 port technique. One 10 mm supra umbilical port, 10 mm port in left iliac fossa and 5mm in right iliac fossa. To produce pneumoperitoneum, a Verres needle was used to provide carbon dioxide at a steady pressure of 12–14 mmHg. The patient was placed in a Trendelenburg posture with a slight right side up. In order to find any apparent pathology in the right iliac fossa, a thorough examination of the abdominal cavity was performed. If pathology was of appendiceal, mesenteric lymphadenopathy, appendectomy was performed following the division of the mesoappendix using bipolar forceps. On the appendix, a total of three chromic catgut loops were placed. Two chromic catgut loops were used to fix the appendix's base, and dissection was done distal to the second loop. A 10-mm Left Iliac Fossa port was used for removing the specimen after it had been placed in an endobag. Only a diagnostic laparoscopy was performed and an intraoperative gynecological consultation was requested if

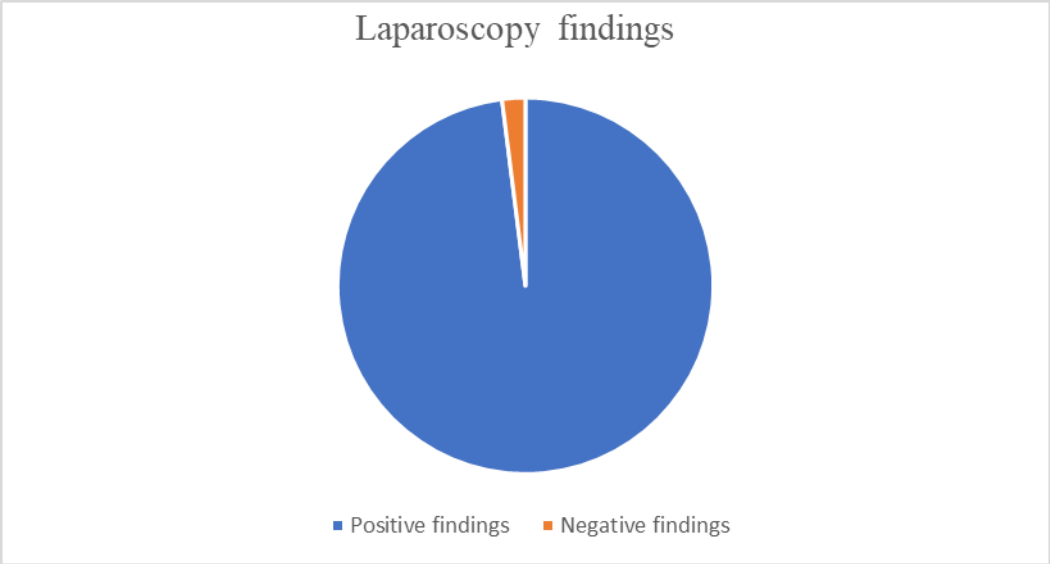
there were right adnexal pathology and findings of pelvic inflammatory disease. In case of finding of Ileo-caecal Tuberculosis, biopsies were taken.

In a finding of adhered appendicular lump, Right Hemicolectomy was performed. Every specimen was sent for histological analysis. After recovering from anesthesia and their bowel sounds returned to normal clear fluids were started orally. After the patients passed flatus and were able to tolerate the liquid diet, a soft diet was initiated. Once the patients were afebrile, able to follow a regular diet, and had good pain management, they were released from the hospital. For up to three months, they were monitored and evaluated for relief of chronic right lower abdominal pain.

RESULT

Diagnostic laparoscopy was performed in all 86 patients, of whom 98.3% (84 patients) had positive results and 1.7% (2 patients) had no identifiable gross findings.

Socio-Demographics		
Age	10-30 years	56 (66%)
	31-50 years	24 (28%)
	51-70 years	6 (06%)
Gender	**Male**	18 (21%)
	Female	68 (79%)



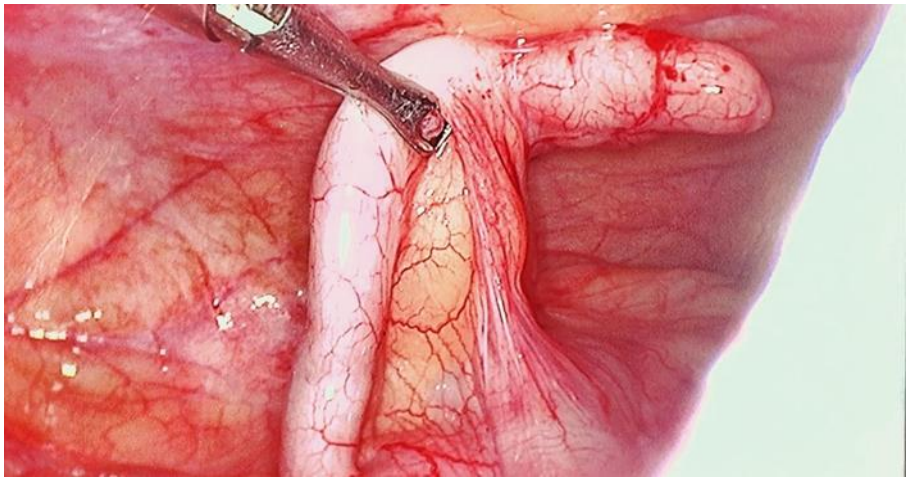


Fig 1. Inflamed appendix with hyperaemia

Fig 2. Adhered appendicular lump.

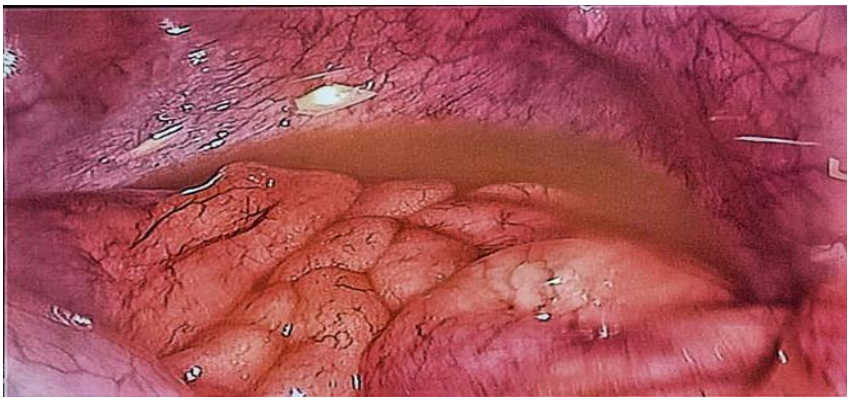


Fig 3: Fluid collection in Right iliac fossa

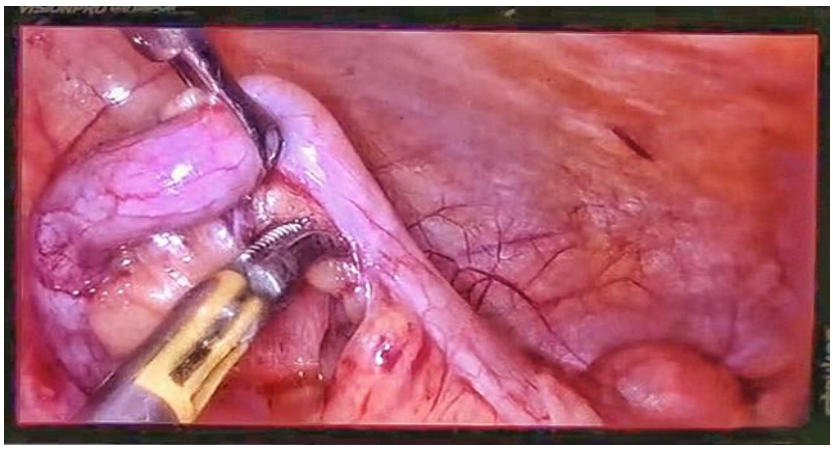


Fig4: Division of Mesoappendix with bipolar

Table 1: Findings on diagnostic laparoscopy with managements

Laparoscopy findings	Number of patients	Percentage	Surgery done
Recurrent appendicitis	62	72.1%	Laparoscopic appendectomy
Mesenteric lymphadenopathy	8	9.3%	Laparoscopic appendectomy
Right adnexal pathology	6	6.9%	Diagnostic laparoscopy only
Pelvic inflammatory disease	3	3.5%	Diagnostic laparoscopy only
Appendicular mobile lump	1	1.17%	Laparoscopic appendectomy
Appendicular adherent lump	1	1.17%	Right Hemicolectomy
Ileo-caecal tuberculosis	2	2.33%	Diagnostic laparoscopy and biopsy
No abnormality	2	2.33%	Diagnostic laparoscopy only
Carcinoma tip of appendix	1	1.17%	Laparoscopic appendectomy

Table 2: Number and Percentage of patients relieved from pain

Diagnosis	Total patients	Relief from pain (percentage)
Recurrent appendicitis	62	62 (100%)
Mesenteric lymphadenopathy	8	6 (75%)
Right adnexal pathology + pelvic inflammatory disease	9	0 (0%)
Appendicular lump	2	2 (100%)
Ileo-caecal tuberculosis	2	0 (0%)
No abnormality	2	0 (0%)
Carcinoma tip of appendix	1	1 (100%)
Total	**86**	**71 (82.56%)**

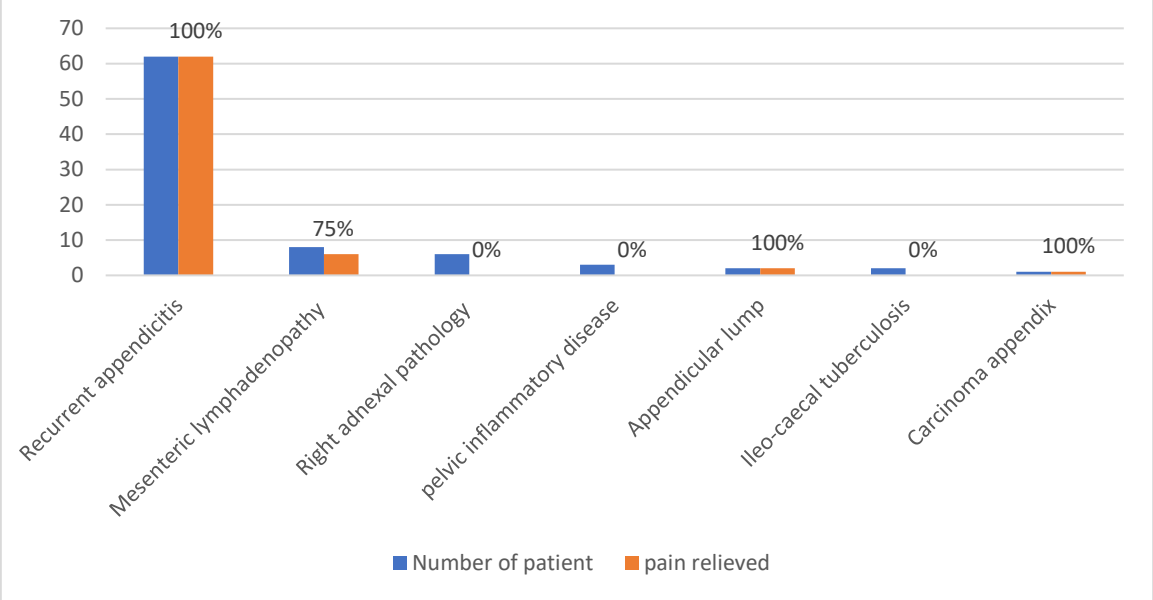


Chart 1- Number and percentage of patients relieved from pain

Group	Pain Relieved	Pain Not Relived	Total
Positive Laparoscopy	71	13	84
Negative Laparoscopy	0	2	2

Fisher's Exact Test P-value is 0.036. So, the difference is statistically significant (<0.05). Hence

Patients with positive laparoscopy findings had a significantly higher chance of pain relief**.**

DISCUSSION

In present study of 86 patients, 68(79%) were females which was consistent with the study done by Onders RP et al[4]. For chronic abdominal pain had 87% and Vaishnav U et al [6] having 77% females presented with right iliac fossa pain.

The most frequent cause of right iliac fossa pain is recurrent appendicitis 62 cases (72%) in the current analysis which is similar to 67% recurrent appendicitis found by the study of Vaishnav U et al. [6] and Ahmad MM et al.[9]

Positive findings were noted in diagnostic laparoscopy in 84 patients (98.3%). In contrast, 217 (84%) of the excised appendices in research by Philips AW et al. had an accurate intraoperative diagnosis. Twelve (29%) of the appendices that were resected while appearing macroscopically benign later had appendicitis after histologic analysis.[10]

Chiarugi et al.[11] discovered pathologic alterations in 58% of their appendices, which appeared to be normal. It coincided with our study's findings that 62 patients (72%) had recurrent appendicitis, according to histological reports. Nevertheless, no microscopic inflammation was later

discovered in any of the appendages that were macroscopically examined in their data.[11]

In recurrent appendicitis about one-third of appendices that appear normal have histological inflammation, making intraoperative diagnosis challenging. Therefore, in the absence of any other pathology that could explain the condition, we would recommend appendectomy that appears to be normal. As after removal of appendix one diagnosis has been ruled out. Laparoscopy should be the "gold standard" for women of childbearing age, as the differential diagnosis is broader.[12] In cases of severe obesity, the laparoscopic technique has also been recommended.[13]

In majority of cases of chronic right lower abdominal pain diagnostic laparoscopy and appendectomy is treatment of choice as a significant number of these patients are having diagnosis of recurrent appendicitis confirmed by histopathology.[14]

Teli B et al.[14] in a study showed after proper patient selection, diagnostic laparoscopy followed by appendectomy can relieve symptoms in 90% with chronic right lower abdominal pain if other diagnostic tests are negative, it should be taken into consideration which supports our study, shows at follow up about 82.56% of patients reported relieved symptoms.

Chronic appendicitis, and enlarged mesenteric lymph nodes were among the often-observed intraoperative findings. These results were consistent with the therapeutic treatments, such as appendectomy and laparoscopic adhesiolysis, that were carried out. Based on patient satisfaction, quality of life, and pain alleviation, laparoscopy's therapeutic utility ranged from 63% to 94%.[14,15,16]

In our study Fisher's Exact Test shows P-value 0.036. So, the difference is statistically significant (<0.05). Patients with positive laparoscopy findings had a significantly higher chance of pain relief. This supports the conclusion that identifying pathology during laparoscopy is associated with better postoperative outcomes.

CONCLUSION

Diagnostic laparoscopy offers a safe, accurate method for evaluating chronic right iliac fossa pain when conventional imaging is inconclusive. It provides direct visualisation and permits immediate intervention. Therefore, it should be an early option for the management of chronic right iliac fossa pain.

Limitation of the study

This study faced several limitations. First off, the tiny study group could not be representative of the larger group of patients suffering from discomfort in the right iliac fossa. Therefore, in order to properly represent the real population, a larger study group was needed. Furthermore, a multicentric study will remove prejudice because the study was carried out at a single institution, which could induce bias. The follow up period of three months, while useful for assessing postoperative pain outcome, is relatively short for assessing any other outcomes.

Declaration by Authors

Ethical Approval: not applicable

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Conflict of Interest: The authors declare no conflict of interest.

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