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Original research article

An investigation into the effectiveness of diagnostic laparoscopy for chronic abdominal pain

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Abstract

Background: Chronic abdominal discomfort is a common problem, but it's tough to treat. It's the fourth leading cause of adult discomfort. This sickness affects the patient's body and mind. Despite multiple testing, the surgeon can't determine what's wrong with this patient. Our understanding has expanded since diagnostic laparoscopy.

Methods: In this prospective descriptive cross-sectional study, 35 patients with chronic abdominal pain were enrolled between June 2023 and November 2023. Patients attending the General Surgery outpatient clinic at Department of General Surgery, Government Medical College, Karimnagar, Telangana, India, were recruited during the specified time frame.

Results: In the hours following surgery, doctors and nurses checked in with each patient frequently to assess their pain levels and the efficacy of their pain medicine. Approximately two and a half months later, we followed up with everyone to see how they were doing. The research findings were dissected and analyzed based on the results of the Verbal Pain Rating Scale.

Conclusion: Diagnostic laparoscopy on patients with chronic abdomen discomfort helps us understand underlying abdominal disorders. Diagnostic laparoscopy can assist patients with persistent abdomen pain detect abnormalities and improve prognosis.

Keywords: Chronic abdominal pain, prospective trial, diagnostic laparoscopy

Introduction

Patients frequently complain of chronic abdominal pain, which can be challenging for physicians and surgeons to treat effectively. It ranks as the fourth most common source of chronic pain in adults [1]. This disease impacts the patient's physical and mental well-being equally. Even after a battery of tests, the surgeon is still at a loss to explain the patient's symptoms. Our knowledge has expanded to include new approaches ever since the development of diagnostic laparoscopy [2, 3]. Most people with chronic abdomen pain can expect an improvement in their prognosis after laparoscopy is performed to look for abnormal findings. The primary goal of this study was to bring attention to laparoscopy as an effective diagnostic tool for identifying the cause of chronic abdominal pain, which would then guide subsequent treatment and post-operative pain management [4, 6]. The study also hopes to highlight the importance of laparoscopy in minimising discomfort after surgery. One of the most debilitating conditions, chronic abdominal pain, is addressed in this article, along with the diagnostic and therapeutic benefits of laparoscopy [7].

The purpose of this study is to evaluate laparoscopy's potential as a diagnostic and treatment tool for people experiencing chronic abdominal pain. Participants in this study [8] had been experiencing chronic abdominal pain but had not been diagnosed despite the use of conventional laboratory and imaging diagnostic techniques. The patients in this cohort were analysed for their preoperative characteristics, surgical findings, potential underlying causes, and final results. Results from these studies will help surgeons become more familiar with diagnostic laparoscopy. Discovering new explanations for chronic abdominal pain is one of the study's primary aims [9, 11]. The purpose of this study is to evaluate the usefulness of diagnostic laparoscopy for treating intractable abdominal pain. This study aims to determine if laparoscopy is effective in treating chronic abdominal pain.

Methodology

Cases who had complained of abdomen pain that had lasted for more than three months and for whom a diagnosis could not be established utilising our standard physical, laboratory, or imaging diagnostics were included in this study. Patients had to have a duration of abdomen pain of at least three months. Inside this prospective descriptive cross-sectional study, which took place between June 2023 and November 2023, there were a total of 35 patients who suffered from chronic abdominal pain. During the aforementioned window of time, participants were selected at random from the outpatient clinic for

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general surgery that was housed within Department of General Surgery, Government Medical College, Karimnagar, Telangana, India.

Inclusion criteria
1. Between the ages of 15 and 55
2. Second, both sexes
3. Three months or more of abdomen pain

Exclusion criteria
1. A case of detectable cancer of the abdomen
2. Access to psychiatric files

The participant's level of pain was assessed after a thorough preoperative assessment by having them rate their level of discomfort from 0 (no pain) to 4 (some pain) to 5 (extreme pain) (extreme pain). An exploratory laparoscopy was recommended for this population.

Preparation
While a rectal enema and overnight fasting aren't required for a thorough abdominal examination, they can help with manipulating the colon and retracting the solid organ. Since diagnostic laparoscopy is a sterile procedure, prophylactic antibiotics were given to all patients, but additional procedures, such as a biopsy or intervention, may be required. Patients who undergo diagnostic laparoscopy wore graduated elastic stockings, and those at increased risk also received deep vein thrombosis prophylaxis, such as mechanical compression leggings or preoperative heparin. Age over 60 and a previous history of DVT were both considered risk factors.

Anaesthesia
Because therapeutic treatments may sometimes be necessary, general anaesthesia has replaced regional anaesthesia as the method of choice.

Position
Foley's catheter was used to drain the patient's bladder, and a Ryles tube was left in place to relieve abdominal distension. The patient's left side is where the surgeon stands, and the assistant stands on the right. Nurses in scrubs stand on the side of the operating room opposite the surgeon and his instrument cart. According on the location of the patient's abdominal pain, the monitor was either placed at the foot or the head end of the patient.

Abdominal access
By establishing a pneumoperitoneum, the abdominal cavity might be entered. Pneumoperitoneum was created using both the open (Hasson's) and closed (Veress needle) techniques. In cases where bowel adhesion was feared, surgeons would inject a Veress needle into Palmer's point to produce a pneumoperitoneum and protect the gut from accidental harm. The peritoneal cavity can be seen before the trocar is inserted when using the open technique, making pneumoperitoneum a safe procedure.

Results
Patient characteristics at the outset of the study

Table 1: Distribution by Age

Sr. No.	Age	Patient
1.	15 to 25	13
2.	26 to 35	10
3.	36 to 45	7
4.	46 to 55	5
	Total	35

Mean age = 33

The largest proportion of the adult population falls between the ages of 15 and 25.

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Table 2: Distribution by Sex

Sr. No.	Gender	Patient	%
1.	Male	19	54.28
2.	Female	16	45.71
3.	Total	35	100

- The proportion of males to females in the sample population is nearly equal.
- Slightly more prevalent in males

Duration of pain

Mean = 5 month (2-24 months).

Our patients' average pain duration was about 6 months, and it never went above 2 years.

Table 3: Ache Location

Sr. No.	Site	Patients	%
1.	Right Up. Quad.	5	14.28
2.	Right Low. Quad.	15	42.85
3.	Left Up. Quad.	5	14.28
4.	Left Low. Quad.	5	14.28
5.	Periumbilical	5	14.28
	Total	35	100

Pain in the right lower quadrant, specifically the right iliac fossa, is a common complaint, affecting around 60% of patients.

Table 4: Conclusions reached throughout the course of surgery

Sr. No.	Findings	Patients	%
1.	Thickened appendix	11	31.42
2.	Adhesions	4	11.42
3.	Enlarge mesenteric nodes	4	11.42
4.	Koch’s abdomen	5	14.28
5.	Neoplasia	3	8.57
6.	Hernia	5	14.28
7.	No abnormality	3	8.57
	Total	35	100

Appendicular disease (31.42%), followed by adhesions (11.42%), was found to be the most common underlying cause of chronic abdominal pain of unknown origin. Laparoscopic appendicectomy was performed on all patients with appendicular pathology, including inflammation, appendix thickening, and localised adhesion with caceum and abdominal wall. Histopathology analysis of all appendix tissue samples revealed chronic inflammation.

All patients reported being pain-free following a month of follow-up, and there were no complications either during or after surgery. N=11 patients, or about a quarter, showed signs of adhesions; three of these had prior surgical histories. It was discovered that three patients had undergone LSCS procedures before, and one patient had undergone open cholecystectomy. The omentum became fixed to the scar on the anterior abdominal wall. Two patients underwent laparoscopic adhesiolysis, but due to complications, one of them required an open operation. In four patients with no prior surgical history, caecal and appendiceal adhesion to the anterior abdominal wall was treated with laparoscopic adhesiolysis.

Koch's abdominis was detected in 5 people (or 14.28%). Surgeons removed a number of tubercles from the peritoneum, colon, and omentum during the procedure. This case of poor adhesion between the bowel loops and the anterior abdominal wall was observed in a single patient. All four additional patients had minimal amounts of ascitic fluid. The omentum, peritoneum, and ascitic fluid were biopsied, and the fluid was sent for biochemical analysis. The results are consistent with abdominal tuberculosis. Everyone started taking anti-TB medication after the operation. Among those examined, 8.57% had cancer (n=3). Two patients with metastatic colon cancer and one patient with HPE ultimately diagnosed with mesothelioma received palliative chemotherapy.

Only14.28% of people with a ventral hernia had surgery to repair it. Omental adhesion was found in the corner of a previously LSCS scar that had been reduced in size, and in another patient, omentum had adhered to a tiny defect in the periumbilical area. Mesh was used to close up both of the wounds. Prior abdominal surgery was a common denominator in the cases of omental adhesion (three patients) and minor incisional hernia (one patient). An average diagnostic laparoscopic procedure takes 30 minutes, while a therapeutic procedure takes 73 minutes plus 30 minutes.

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Table 5: Administration

Sr. No.	Findings	Patients	%
1.	Lap interventions	11	31.42
2.	biopsy	12	34.28
3.	Conversion to open	5	14.28
4.	No interventions	7	20

Fifty-two percent of patients underwent a therapeutic surgery, including appendicectomy (45.71%) adhesiolysis (28.57%) and hernioplasty (25.71%). 17%, had enlarged mesenteric nodes in the terminal ileum, and biopsies confirmed the characteristics of nonspecific adenitis. Seven percent of patients in our study had negative laparoscopies, meaning that the procedure revealed no abnormalities.

Table 6: Treatment via Laparoscopic Incision

Sr. No.	Findings	Patients	%
1.	appendicectomy	16	45.71
2.	adhesiolysis	10	28.57
3.	Hernia repair	9	25.71

Table 7: Complications after Surgery

Sr. No.	Findings	Patients
1.	None	30
2.	Infection	5

Wound infections were uncommon after surgery, affecting only 14.28% of patients (n=5). These infections were treated successfully with antibiotics and proper dressing in both cases. At no point during the surgery or its immediate aftermath did any other serious complications arise. The average postoperative length of stay was 2.5 days.

Table 8: Preoperative Pain Scale

Sr. No.	Findings	Patients	%
1.	Mild	7	20
2.	Moderate	18	51.42
3.	Severe	6	17.14
4.	Very severe	4	11.42

18 patients (or 51.42%) reported moderate pain, and 17.14% (6 patient) had severe pain.

Table 9: Analgesics for Use after Surgery

Sr. No.	Duration	Positive out come	Negative out come
1.	After 30 days	75%	25%
2.	After 90 days	86%	14%

Discussion

For several hours after surgery, every patient was closely monitored to assess their pain levels and the efficacy of their analgesics. We followed up with everyone after a period of two to three months to see how they were doing. The research findings were dissected and analysed based on the results of the Verbal Pain Rating Scale. In the first month, 75% of patients reported complete pain relief, while in the third month, 86% of patients reported the same. In the remaining patients, there was no improvement in their pain scores, which may be due to the chronic nature of their illness. During the follow-up period, patients who underwent laparoscopic examination and had normal findings reported no symptoms. There's a chance that you're experiencing this because of the placebo effect.

If abdominal pain persists for more than three months, the condition is considered chronic. These people are notoriously hard to diagnose and treat successfully. It's one of the most common side effects of surgery, and it causes a lot of trouble for doctors and other medical staff. Thirty consecutive patients with unexplained and ongoing abdomen pain were evaluated via laparoscopic examination [12, 14].

Anatomical normality and the absence of any clinical lesion were found in only seven percent of patients who underwent laparoscopic diagnostic examination. In contrast to the findings of previous studies by Marana *et al*. [15] and Gowri & Krolikowski [16], which found that abnormalities were missed during laparoscopy in 20% of patients, this study discovered that only 7% of patients had this problem. Pain in the periumbilical region is reported by only 20% of people who suffer from chronic abdominal pain, making it the second most common location by a significant distance. The right lower abdominal region is the most common location for those who suffer from chronic pain, accounting for sixty percent of all

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cases. Both adhesiolysis and appendicectomy are common surgical procedures that are performed as a result of the findings of surgical procedures. These abnormalities include adhesions, which account for 11.42 percent of the cases, and abnormal appendices, which account for 31.42 percent of the cases. In the current study, researchers discovered that patients who suffered from chronic abdominal pain had a prevalence of abdominal adhesions that was 23.0%. In a previous study [17], conducted by Di Lorenzo and colleagues, the researchers found that the prevalence of abdominal adhesions in patients who suffered from chronic abdominal pain was 18.6 percent.

There was a correlation between adhesions and pain 90% of the time, but there was no link found between the size of the adhesion and the intensity of the discomfort [18]. Pain associated with adhesion is caused by the restriction of motion and distention of the organ, which is most commonly the bowel [19]. Only twenty five percent of patients who were dealing with severe intestinal adhesions needed to change their procedures to open ones. After one month of follow-up, seventy five percent of patients experienced a positive outcome, and after three months of follow-up, fourteen percent of patients experienced complete pain relief. 86% of patients experienced a positive outcome. These results are encouraging because they are consistent with the findings of Gouda and Emad [20], who found that "the diagnostic laparoscopy produces an 80% favourable outcome in evaluation of chronic abdomen pain in the follow up of 2 months." These results lend credence to the aforementioned finding.

Conclusion

The diagnostic laparoscopy that is performed on patients who suffer from chronic abdomen pain plays a significant role in expanding our understanding of the myriad of underlying abdominal conditions. Patients who suffer from persistent abdominal pain may benefit from having diagnostic laparoscopy performed since it can help discover aberrant findings and improve the patient's prognosis. Having said that, it is something that should only be considered after an exhaustive diagnostic assessment has been carried out. It makes it possible to perform effective surgical treatment for a wide variety of problems that are discovered during diagnostic laparoscopy. It is a method that is risk-free and highly efficient for determining the cause of persistent abdominal discomfort, which paves the way for appropriate treatments.

Conflict of Interest

None

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References

1. Paajanen H, Julkunen K, Waris H. Laparoscopy in chronic abdominal pain: a prospective nonrandomized long-term follow-up study. Journal of clinical gastroenterology. 2005 Feb 1;39(2):110-4.
2. Shah VS, Parmar AJ, Ninama SM, Patel HA. A study of incidental appendectomy during diagnostic laparoscopy performed to evaluate the causes of lower abdominal pain. International Surgery Journal. 2022 Jan 29;9(2):322-6.
3. El-Labban GM, Hokkam EN. The efficacy of laparoscopy in the diagnosis and management of chronic abdominal pain. Journal of Minimal Access Surgery. 2010 Oct;6(4):95.
4. Vander Velpen GC, Shimi SM, Cuschieri A. Diagnostic yield and management benefit of laparoscopy: a prospective audit. Gut. 1994 Nov 1;35(11):1617-21.
5. Sami F, Aslam M, Ali MT, Hashmi JS, Khan MT, Memon MH, *et al*. Diagnostic Laparoscopy and its Role in Patients with Chronic Abdominal Pain: Study from a Tertiary Care Hospital. Pakistan Journal of Medical & Health Sciences. 2022 Dec 6;16(10):333.
6. John RD, Gary WV, Laurie H. What could be causing chronic abdominal pain? Postgraduate Medicine. 1999;106(3):1-8.
7. Sackier JM, Berci G, Paz-Partlow M. Elective diagnostic laparoscopy-Amj surg. 1991;161:326-330.
8. Ruddock JC. Peritoneoscopy: A critical clinical review. Surg Clin North Am. 1957;37:1249-1260.
9. El-laddan GM, Hokkam EN. The efficacy of laparoscopy in the diagnosis and management of chronic abdominal pain. J Min access Surg. 2010;6:95-9.
10. Decat B, Sussman L, Lewis MPN. Randomized clinical trial of early laparoscopy in the management of non-specific abdominal pain. Br J Surg. 1999;86:1382-1386.
11. Gelbaya TA, El Halwagy HE. Focus in primary care: chronic pelvic pain in women. Obest. Gynecol. 2001 Dec;56(12):757-64.
12. Wesselmann U, Czakanski PP. Pelvic pain: A chronic visceral pain syndrome. Curr. Pain Headach. 2001;(1):13-19
13. Salky, Barry, Diagnostic Laparoscopy: Surgical Laparoscopy & Endoscopy. 1993 Apr, 3(2).
14. Poulin EC, Schlachta CM, Mamazza J. Early laparoscopy to help diagnosis of non-specific

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abdominal pain. Lancet. 2000;355:861-863.
15. Marana R, Paielli FV, Muzii L, Mancusol J. The role of laparoscopy in evaluation of chronic abdominal pain. Minerva Gyneco. 1993 Jun;45(6):281-6.
16. Gowri V, Krolikowski A. Chronic pelvic pain. Laparoscopic and cystoscopic findings, Saudi. Medical. J. 2001;22(9):769-70.
17. Di Lorenzo N, Coscarella G, Lirosi F, Faraci L, Rossi P. Impact of laparoscopic surgery in the treatment of chroic abdominal pain sysdrome. Chir Tal. 2002;54(34):367-78.
18. Mahawar KK. Laparoscopic adhesiolysis in patients with chronic abdominal pain. Lancet (England). 2003, 361(9376).
19. Swank DJ, Van Erpo WF, Repelaer OJ, Hop WC, Bonjer HJ. A prospective analysis of predictive factors on the results of laparoscopic adhesiolysis in patients with chronic abdominal pain. Surg. Laparosc Endosc. 2003;13(2):88-94.
20. El-labban GM, Hokkam EN. The efficacy of laparoscopy in the diagnosis and management of chronic abdominal pain; J Min Access Surg. 2010;6:95-9.