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Role of Diagnostic Laparoscopy in Chronic Abdominal Pain

Juicy Mahanta[1], Nihar Ranjan Pradhan[2], Manas Ranjan Mohapatra[2]*

[1]Associate Professor, Dept of General Surgery, IMS & SUM Hospital, Phulnakhara, Bhubaneswar, India
[2]Assistant Professor, Dept of General Surgery, IMS & SUM Hospital, Phulnakhara, Bhubaneswar, India

***Address for Correspondence:** Dr. Manas Ranjan Mohapatra, Assistant Professor, Dept of General Surgery, IMS & SUM Hospital, Phulnakhara, Bhubaneswar, India
E-mail: fhmanas@outlook.com

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ABSTRACT

Background: Diagnostic laparoscopy is a valuable tool for evaluating chronic abdominal pain, particularly when non-invasive tests are inconclusive. It allows direct visualization of abdominal structures, biopsy collection, and simultaneous treatment of conditions such as adhesions, endometriosis, or peritoneal tuberculosis. While it often provides important diagnostic information, the therapeutic benefits can vary; for example, adhesiolysis alone has not consistently shown pain relief. Careful patient selection is essential to ensure meaningful improvements in symptoms.

Methods: This cross-sectional study assessed the effectiveness of diagnostic laparoscopy in 120 patients with chronic abdominal pain over one year. Preoperative evaluation included clinical assessment, imaging, and laboratory investigations. Laparoscopy was performed under general anesthesia, with systematic inspection of the abdomen and biopsies as indicated. Pain was recorded using a Visual Analogue Scale (VAS) before surgery and on days 15, 30, 45, and 60 postoperatively. Data were analyzed using descriptive statistics and one-way ANOVA, with significance set at $p \leq 0.05$.

Results: Among 120 patients, the most frequent findings were adhesions associated with appendicitis (25%) and tubercular lymph nodes (16.66%). The main procedure performed was adhesiolysis with appendectomy (20.83%). Baseline VAS scores were high (7.35), but pain decreased significantly after surgery. By day 30, severe pain had resolved, and by day 60, most patients reported minimal or no pain, demonstrating the effectiveness of the intervention.

Conclusion: A structured surgical strategy guided by diagnostic laparoscopy resulted in substantial relief of chronic abdominal pain. Most patients experienced significant improvement by 60 days. Future research should focus on long-term outcomes and the establishment of standardized diagnostic and management protocols for chronic abdominal pain.

Key-words: Diagnosed laproscopy, Chronic abdominal pain, Ultrasound, VAS

INTRODUCTION

Chronic abdominal pain is a common, heterogeneous clinical problem spanning gastroenterology, surgery, and gynaecology. Patients frequently undergo extensive non-invasive testing, including laboratory panels, ultrasonography (USG), computed tomography (CT), magnetic resonance imaging (MRI) and endoscopy. However, a substantial subset remains without a definitive diagnosis or targeted therapy.

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In this situation, diagnostic laparoscopy has appeared as a minimally invasive modality that allows direct inspection of the peritoneal cavity with the opportunity for concurrent biopsy and, when appropriate, immediate therapeutic involvement. Over three decades, data have accumulated suggesting that DL can both increase diagnostic yield and improve symptoms in carefully selected patients with CAP of unclear origin after negative or equivocal investigations [1,2]. The application of laparoscopy rests on three pillars: (1) visualisation of pathology often missed by imaging (e.g., small peritoneal implants, subtle internal hernias, occult hernias, filmy adhesions); (2) the ability to obtain histology and microbiology, especially for peritoneal tuberculosis or atypical infections; and (3) the potential for same-setting treatment (adhesiolysis, appendectomy, hernia repair, targeted excision) when a causative lesion is identified.

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Reported diagnostic products differ with the population studied and referral patterns. In general, in surgical series of CAP, positive results are reported in 70–90% of patients, most commonly adhesions, hernias, chronic cholecystitis, or internal hernias, particularly after Roux-en-Y gastric bypass [3]. In gynaecologic cohorts of chronic pelvic pain, an overlapping but distinct phenotype, laparoscopy frequently identifies endometriosis, pelvic inflammatory disease, adhesions, or pelvic tuberculosis, with endometriosis and TB predominating depending on the epidemiology of the situation [4,5]. Importantly, in regions with intermediate-to-high tuberculosis prevalence or patients with unexplained exudative ascites, laparoscopy with directed peritoneal biopsy considerably outperforms non-invasive tests and ascitic fluid analyses for diagnosing peritoneal TB; sensitivities exceeding 75–90% have been reported, enabling prompt antitubercular therapy and averting laparotomy [5,6].

Symptom relief following DL depends on whether a treatable lesion is addressed during the procedure. Prospective and retrospective series suggest that, with careful selection and when specific pathology is treated, more than half, and often over two-thirds, of patients experience clinically meaningful pain improvement on follow-up [7]. However, one must distinguish between the diagnostic role of DL and the therapeutic value of specific interventions performed during laparoscopy, most particularly adhesiolysis. While early uncontrolled studies suggested high rates of pain relief after laparoscopic adhesiolysis, difficult randomised evidence has tempered interest: in a blinded, multicentre randomised trial, adhesiolysis did not outperform DL alone for pain results at one year, and long-term follow-up reiterated this lack of superiority, a substantial placebo response to laparoscopy itself, and potential harms from adhesiolysis [8,9]. Therefore, contemporary practice increasingly emphasises severe patient selection, avoidance of routine adhesiolysis for pain alone, and a focus on identifying alternative surgically remediable pathology (e.g., occult hernias, endometriotic implants) or securing histology when malignancy or infection is suspected [10,11].

Safety profiles for DL in CAP mirror those for laparoscopy in other indications: low but non-zero risks of visceral or vascular injury, port-site difficulties, and anaesthesia-related events. Difficulty rates are generally reported as low single digits in experienced hands, and the procedures are typically short-stay or ambulatory [12]. As improved recovery practices, high-definition optics, and adjuncts such as near-infrared imaging proliferate, the diagnostic accuracy and safety of DL may additionally improve, although high-quality data specific to CAP are still limited. The clinical question, therefore, is not whether DL can find “something,” but rather when it changes management and improves patient-centred results relative to continued non-invasive assessment or conservative care. This introduction frames the rationale and evidence base for DL in CAP, sets expectations regarding diagnostic produce versus therapeutic benefit, and emphasises scenarios in which laparoscopy meaningfully advances diagnosis (e.g., peritoneal TB, internal hernias, endometriosis) or treatment, while acknowledging the need for judicious, evidence-aligned application in routine practice [13].

MATERIALS AND METHODS

Research design- The current study is a cross-sectional study to analyze the effectiveness of Laparoscopy in cases of chronic pain in the abdominal area. The study was conducted for a period of one year from January 2024 to January 2025. The study was conducted at the Institute of Medical Science & SUM Hospital, Campus II, Phulnakhra. A total of 120 patients has been involved in our study based on various inclusion and exclusion criteria, along with proper approval from the Ethical board and with proper consent from all the patients.

Inclusion criteria

- Patients with 18 years and above were included in the study.
- Those patients were included in the study who had pre-clinical history of chronic pain in the abdomen for over 8 weeks.
- The pain should not be diagnosed using techniques like USG, CT, or MRI.

Exclusion criteria

- Those patients were excluded who had discontinued their follow-up for the condition
- Pregnant women were not included in the study.
- Only fit patients who will not suffer from general anaesthesia were included.

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Data collection- Demographic details of the patients were collected, like age and gender. Their medical and surgical history was analysed along with any current complaints. Attention to symptoms such as fever, diarrhoea, constipation, and burning during urination. A detailed clinical examination was carried out, documenting pain characteristics like severity using the VAS, duration, location, and type. All this information was carefully recorded using a well-designed and tested form. The investigations included checking haemoglobin levels, total leukocyte counts, differential counts, random blood sugar, platelet counts, liver function tests, urinalysis with microscopy, serum creatinine levels, and imaging studies like USG, CT, and MRI.

Procedure- After reviewing preoperative tests and confirming fitness for general anesthesia, patients underwent diagnostic laparoscopy performed by a skilled surgeon using open or closed techniques. Patients fasted for 6 hours before surgery. The initial port was placed at the umbilicus via the open technique; for those with abdominal scars or prior surgeries, the initial port was placed at Palmer's point for safety. Additional ports were inserted as needed under direct visualization. A thorough examination of the abdominal cavity was conducted in each case. Based on intraoperative findings, therapeutic and diagnostic procedures were performed at the surgeon's discretion, including adhesiolysis, appendectomy, peritoneal or lymph node biopsy, and aspiration of peritoneal fluid. This approach allowed both diagnosis and treatment in a single session, tailored to the patient's specific condition, ensuring optimal outcomes while minimizing procedural risks.

The laparoscopic examination followed a systematic approach. We began by inspecting the pelvis, including the uterus, ovaries, and uterine adnexa in female patients, then moved on to the rectum and sigmoid colon. Next, we examined the ileocecal region, cecum, appendix, ascending colon, transverse colon, stomach, duodenum, gallbladder, liver, spleen, and descending colon. To better visualize the upper abdominal organs, the patient was placed into a reverse Trendelenburg position. We carefully examined the entire length of the small bowel using bowel grasping forceps to "walk over" and inspect the bowel loops directly. The final diagnosis was definitively established based on the histopathological findings. After the process, each participant was observed for laparoscopic analysis.

Assessment of pain- To measure the intensity of pain, VAS was utilized, which is a simple numerical scale ranging from 0 to 10. During the preoperative visit, we made sure to explain the VAS to each patient in detail. We clarified that a score of 0 means no pain at all, while a score of 10 represents the worst pain. The official pain assessment took place when the patient joined the study. After that, we checked in on their pain levels at specific follow-up appointments, which were scheduled for day 15, day 30, day 45, and day 60 after the surgery.

Statistical Analysis- Data were organized in Microsoft Excel for management and initial analysis. Categorical variables were summarized as rates, ratios, and percentages, while continuous variables were reported as mean ± standard deviation. Postoperative pain scores at different follow-up intervals were compared using one-way ANOVA. A p-value ≤0.05 was considered statistically significant.

RESULTS

The study included 120 participants, evenly split between genders, with 60 males (50%) and 60 females (50%). There was a varying age group, but the largest groups were those between 31-40 years and 61-70 years, each group consisting of 30 individuals (25%). The other age brackets (18-30, 41-50, & 51-60) had 20 participants each (16.66%). When it came to marital status, it was perfectly equally divided, with 60 participants (50%) being single and 60 (50%) married. The educational backgrounds of the participants were quite varied. The largest group, 40 individuals (33.33%), had completed secondary education, and 30 graduates (25%), 20 individuals with primary education (16.66%), 20 post-graduates (16.66%), and 10 individuals who were studying (8.33%). In terms of clinical presentation, constipation and a category marked as 'others' comprised common symptoms, each affecting 30 patients (25%). 20 patients were suffering from fever, diarrhea, and burning micturition, making up 16.66% of the total patients. This suggests that complications related to the gastrointestinal system, particularly constipation and diarrhoea, were prevalent complaints among the participants (Table 1).

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Table 1: Distribution of different variables, including age, marital status, gender, education level and clinical presentation of the participants

Variable	Percentage (%)
Sex	
Male	60(50%)
Female	60(50%)
Age (Years)	
18-30	20(16.66%)
31-40	30(25%)
410--50	20(16.66%)
51-60	20(16.66%)
61-70	30(25%)
Status of marriage	
Single	60(50%)
Married	60(50%)
Educational status	
Styding	10(8.33%)
Primary	20(16.66%)
Secondary	40(33.33%)
Graduate	30(25%)
Post-graduate	20(16.66%)
Clinical presentation	
Fever	20(16.66%)
Diarrhoea	20(16.66%)
Constipation	30(25%)
Burning micturition	20(16.66%)
Others	30(25%)

The clinical examination of the 120 participants showed a variety of histories of surgery and other health conditions. The most reported issues were adhesion, causing frequent subacute intestinal obstruction and tuberculosis, each noted by 20 patients (16.66%). Additionally, 15 participants (12.5%) mentioned having a "Hysterectomy." Both "LSCS" (Lower Segment Caesarean Section) and "Tubectomy" were reported by 10 patients (8.33%), along with a history of "Open appendectomy," "Right hemicolectomy," and those who had a "Not significant" medical history. 8 patients (6.66%) observed "Hypertension", while 7 patients (5.83%) had a combined history of "LSCS and tubectomy." During the abdominal examination, tenderness was a common observation. "Lower abdominal tenderness," "Upper abdominal tenderness," and "Umbilical tenderness" were the most frequently seen signs, each affecting 30 patients (25%). 20 patients (16.66%) observed Generalized tenderness, and "Suprapubic tenderness" was observed among 10 patients (8.33%) (Table 2).

Table 2: Distribution of clinical and surgical history and abdominal examination

Variable	Percentage (%)
History	
Previous LSCS	10(8.33%)
Hypertension	8(6.66%)
Hysterectomy	15(12.5%)
LSCS and tubectomy	7(5.83)
Tubectomy	10(8.33)
Laparoscopic adhesiolysis for intestinal obstruction	20(16.66%)
Open appendectomy	10(8.33%)
Right hemicolectomy	10(8.33%)
Tuberculosis	20(16.66%)
Not significant	10(8.33%)
Abdominal examination	
Lower abdominal tenderness	30(25%)
Generalized tenderness	20(16.66%)
Suprapubic tenderness	10(8.33%)
Upper abdominal tenderness	30(25%)
Umbilical tenderness	30(25%)

The analysis of pain characteristics among the 120 participants in terms of duration, location, and quality was observed. When it came to duration, most participants—60 of them, or 50%—reported experiencing pain that lasted between 13 to 16 weeks. The rest of the group was evenly divided, with 30 participants (25%) each noting a shorter duration of 8-12 weeks and a longer duration that exceeded 16 weeks. The lower abdomen was the most common area of pain, affecting 60 patients (50%). Pain was either generalized, localized to the upper abdomen, or focused around the umbilicus, with 20 patients (16.66%) reporting each of these patterns. As for the type of pain, the most frequently mentioned description was "pricking" pain, which 40 participants (33.33%) reported. Other types like "progressive," "intermediate," and "severe" pain were

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noted by 20 patients (16.66%) each, while "moderate" and "dragging" pain were very few, each described by 10 patients (8.33%). In terms of severity, three categories stood out as equally common: "mild," "severe," and "progressive" pain were each reported by 30 patients (25%). "Intermediate" severity was noted by 20 patients (16.66%), and "moderate" severity was mentioned by 10 patients (8.33%) (Table 3).

Table 3: Distribution of features related to pain in terms of its duration, site, type of pain and severity of the pain

Features	Percentage (%)
Duration (weeks)	
8–12	30(25%)
13–16	60(50%)
>16	30(25%)
Site	
Generalized	20(16.66%)
Lower abdomen	60(50%)
Upper abdomen	20(16.66%)
Around umbilicus	20(16.66%)
Type of pain	
Moderate	10(8.33%)
Progressive	20(216.66%)
Intermediate	20(16.66%)
Dragging	10(8.33%)
Pricking	40(33.33%)
Severe	20(16.66%)
Severity	
Mild	30(25%)
Intermediate	20(16.66%)
Moderate	10(8.33%)
Severe	30(25%)
Progressive	30(25%)

The baseline characteristics of the study participants (N=120) at enrolment are summarized as mean±standard deviation. Participants reported a notable average pain score of 7.35±0.64 on the VAS, which indicates they were experiencing significant pain during presentation. The mean vital signs were observed within normal physiological ranges: weight averaged 62.55±6.78 kg, pulse rate was 76.49±6.22 beats per minute, systolic blood pressure measured 121.55±10.36 mm Hg, diastolic blood pressure measured as 79.95±8.43 mm Hg, rate of respiration was observed at 17.90±1.23 breaths per minute, and temperature was recorded at 98.71±0.102°F. Laboratory tests showed the following mean values: level of haemoglobin was 12.22±1.96 g%, total leukocyte count (TLC) was 8803.99±3889 per mm^3, and platelet count was 2.99±0.92 lakhs per mm^3. Parameters related to metabolism were normal with a random blood sugar (RBS) level of 102.59±15.92 mg/dL, blood urea of 24.71±10.73 mg/dL, and serum creatinine of 0.99±0.74 mg/dL. The notably high standard deviation for TLC indicates the variation in white blood cell counts among the participants (Table 4).

Table 4: Mean and standard deviation measures for some variables that are measured

Variables	Mean±SD
Pain scores at enrolment (VAS score)	7.35±0.64
Weight (kg)	62.55±6.78
Pulse rate (per min)	76.49±6.22
Systolic blood pressure (mm Hg)	121.55±10.36
Diastolic blood pressure (mm Hg)	79.95±8.43
Respiratory rate (per min)	17.90±1.23
Temperature (°C)	98.71±0.102
Haemoglobin (g%)	12.22±1.96
TLC (mm^3)	8803.99±3889
Platelet count (lakh)	2.99±0.92
RBS (mg/dL)	102.59±15.92
Blood urea (mg/dL)	24.71±10.73
Serum creatinine (mg/dL)	0.99±0.74

The outcomes of the diagnostic and surgical procedures for the 120 participants are summarized here. Notably, USG was normal among 30 patients, which accounts for 25% of the group. Among those who did undergo USG, the most frequently observed finding was mild hepatosplenomegaly, with free fluid seen in 30 patients (25%). Other findings included mild splenomegaly with mild ascites and left minimal pleural effusion, minimal bladder distension with no obvious collection and minimal free fluid in the pouch of Douglas, each reported in 20 patients (16.66%). CT scans were conducted on half of the participants (n=60, 50%), and all these scans resulted in normal findings; the remaining 60 patients (50%) did not receive CT scans. Surgical exploration uncovered a variety of pathologies, with the most

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common being "Adhesions with inflamed appendix," observed among 30 patients (25%). This was followed by "Tubercular lymph nodes," which were observed among 20 patients (16.66%). A range of other conditions, each affecting 10 patients (8.33%), included adhesions alone, liver abscess, malrotation of the gut, a complex finding of omental adhesion to the right fimbrial end with high cecum and inflamed appendix, a right-sided ovarian hemorrhagic cyst, an umbilical sinus tract and volvulus of the left hepatic flexure. The surgical procedures varied widely. The most performed operation was adhesiolysis with appendectomy carried out on 25 patients (20.83%), followed by appendectomy with caecopexy in 20 patients (16.66%). A standard "Appendectomy" was performed among 15 patients (12.5%). Several other procedures were conducted among 10 patients (8.33%), including lymph node biopsy, "Excision of Ladd's band with ileotransverse colon anastomosis," laparoscopic colopexy, abscess drainage, and sinus tract excision. Some frequently performed procedures, such as "Adhesiolysis" alone and "Ovarian cystectomy," were done only among 5 patients (4.1%) (Table 5).

Table 5: Distribution of surgical findings and other techniques, outcomes like CT and USG, with their corresponding percentages**.**

Variables	N (%)
USG findings	
Normal	30(25%)
Mild hepatosplenomegaly	30(25%)
Free fluid	
Mild splenomegaly,	20(16.66%)
Mild ascites,	
Left minimal pleural effusion	
Minimal bladder	20(16.66%)
Distended, no obvious	
collection in umbilical reason	
Minimal free fluid in	20(16.66%)
Pouch of Douglas	
Not done	30(25%)
CT scan findings	
Normal	60(50%)
Not done	60(50%)
Surgical findings	
Adhesions	10(8.33%)
Tubercular lymph node	20(16.66%)
Adhesions with inflamed appendix	30(25%)
Liver abscess	10(8.33%)
Malrotation of gut	10(8.33%)
Omental adhere to right fimbrial end,	10(8.33%
High cecum, inflamed appendix	
Right-sided ovarian hemorrhagic cyst	10(8.33%)
Umbilicus sinus tract	10(8.33%)
Volvulus of the left hepatic flexure	10(8.33%)
Type of surgery	
Adhesiolysis	5(4.1%)
Appendectomy	15(12.5%)
Adhesiolysis with appendectomy	25(10.83%)
Lymph node biopsy	10(8.33%)
Ovarian cystectomy	5(4.1%)
Appendectomy with cecopexy	20(16.66%)
Excision of Ladd's band with	10(8.33%)
ileotransverse colon anastomosis	
Laparoscopic colopexy	10(8.33%)
Abscess drainage	10(8.33%)
Sinus tract excision	10(8.33%

VAS scores, monitored over 60 days with 120 participants, show a clear and significant improvement in pain relief. By the 15-day follow-up, half of the group (n=60, 50%) reported feeling no pain at all (VAS=0), while 25% experienced mild pain. 20.83% (n=25) observed moderate pain, and a small group of 5 patients (4.16%) still faced severe pain**.** The percentage of patients without any pain reduced to 16.66% (n=20), while those experiencing moderate pain increased to 50% (n=60). 33.33% (n=40) reported mild pain, and no patients indicated severe pain. At the 45-day, half of the patients (n=60, 50%) once again reported no pain. The number of those with moderate pain fell to 33.33% (n=40), and mild pain was reported by 16.66% (n=20). At the final 60-day follow-up, most patients had significant relief, although the percentage reporting no pain reduced to 41.6% (n=50). The group with moderate pain remained at 50% (n=60), while those with mild pain decreased further to 8.33% (n=10). This data reflects an effective intervention, showcasing a strong initial response, a transitional phase of moderate pain around day 30, and stabilization to effective pain management by day 60 (Table 6).

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Table 6: Distribution of different VAS score at different intervals of days and their percentages

	Intervals, n (%)			
VAS scores	**15 days**	**30 days**	**45 days**	**60 days**
No pain (0)	60(50%0	20(16.66%)	60(50%)	50(41.6%)
Mild (0–3)	30(25%0	40(33.33%)	20(16.66%)	10(8.33%)
Moderate (4–6)	25(20.83%)	60(50%)	40(33.33%)	60(50%)
Severe (>6)	5(4.16%)	0	0	0

DISCUSSION

The accumulated literature indicates that diagnostic laparoscopy plays a valuable role for selected patients with chronic abdominal pain when non-invasive evaluation is reserved. Paajanen et al. reported in a prospective cohort that >70% of carefully chosen patients experienced symptom alleviation after laparoscopy, with many experiencing targeted procedures during the same session; nevertheless, the authors called for placebo-controlled trials to separate procedure effects from specific involvement [2]. Onder and colleagues similarly observed high diagnostic and therapeutic yields, with >70% pain improvement when indicated procedures (adhesiolysis, appendectomy, hernia repair) were performed, emphasising the importance of addressing discrete pathology rather than performing laparoscopy as a purely exploratory exercise [14]. Earlier series by Klingensmith *et al.* also suggested favourable outcomes in selected cases, and highlighted that prior abdominal surgery should not automatically preclude laparoscopic exploration for CAP [15]. These results establish a consistent signal: DL often identifies actionable lesions and can relieve pain in a meaningful fraction of patients when management is tailored intraoperatively [16].

However, when adhesions are the principal finding, the evidence base is far more conflicted. The landmark multicentre, blinded RCT by Swank et al. randomised patients with CAP attributed to adhesions to adhesiolysis versus no treatment during DL. Both arms improved substantially over 12 months, but there was no between-group difference, implying that adhesiolysis conferred no incremental benefit over DL alone and that a robust placebo (or contextual) effect accompanies laparoscopy in this situation [17]. A 12-year follow-up of a related randomised cohort reaffirmed the absence of long-term superiority of adhesiolysis and suggested that avoiding adhesiolysis may reduce morbidity and costs [18].

Systematic reviews have echoed these themes: while uncontrolled series frequently report benefit, randomised and higher-quality data fail to demonstrate consistent efficacy of adhesiolysis for pain control in the absence of obstructive symptoms, thereby counselling restraint and emphasising patient selection, expectation management, and alternative diagnoses [19].

By contrast, DL's diagnostic and therapeutic yield is clearer in several specific situations. First, peritoneal/abdominal tuberculosis: multiple studies and narrative reviews demonstrate that laparoscopy with targeted biopsy has excellent diagnostic performance, frequently >75–90% yield, especially when ascitic fluid AFB smears and cultures are negative and imaging is nonspecific. In such cases, DL expedites diagnosis, enables histology and mycobacterial culture, and avoids laparotomy, which is particularly relevant in TB-endemic settings [20]. Second, post-bariatric patients with CAP: small series show DL frequently reveals internal hernias or mesenteric defects missed by imaging, permitting repair and symptom resolution; while evidence is limited, the problem is clinically important and supports a low threshold for DL when suspicion persists [21]. Third, gynaecologic chronic pelvic pain: laparoscopy remains central to diagnosing and staging endometriosis and identifying other pelvic pathology; although not all patients improve postoperatively, laparoscopy can make even treatment with pathology [22].

Second, identify red flags where DL advances care: (i) suspected peritoneal TB or malignancy needing histology; (ii) determined, localised symptoms with a high pretest probability of a surgically remediable lesion (e.g., occult hernia, post-RYGB internal hernia); (iii) gynaecologic CPP with suspected endometriosis where operative diagnosis and treatment are indicated; and (iv) rare abdominal wall pain syndromes where targeted involvement is feasible [23]. Third, be cautious about performing adhesiolysis for pain alone: reserve it for

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cases with obstructive symptoms, clear mechanical correlation, or when part of a broader indicated procedure, and discuss uncertain benefits and risks with patients [1]. Finally, procedural safety and proficiency matter; outcomes are best in centres with experienced laparoscopists and clear pathways for multidisciplinary follow-up, recognising the not-insignificant placebo/contextual effects associated with laparoscopy and the importance of expectation setting [22].

In summary, diagnostic laparoscopy occupies a right, albeit judicious, place in the management of chronic abdominal pain. It meaningfully increases diagnostic certainty and frequently changes management in defined scenarios and can provide symptom relief when targeted therapy is delivered. Equally, routine adhesiolysis for pain attributed exclusively to adhesions lacks high-quality evidence for benefit and carries procedural risk. Making straight DL use with these evidence-based boundaries can maximise patient-centred products while minimising unnecessary involvement.

CONCLUSIONS

The study concluded that participants had diverse past surgical and medical histories, with laparoscopic adhesiolysis and tuberculosis being the most common conditions. Lower abdominal pain was prevalent, and significant relief was observed over 60 days. Most patients experienced substantial pain reduction by the final follow-up, demonstrating the intervention's effectiveness. Key clinical findings included abdominal tenderness, adhesions, and tubercular lymph nodes. The initial VAS score was high at 7.35±0.64, indicating considerable pain. Surgical evaluations revealed adhesions with appendicitis in 25% of cases and tubercular lymph nodes in 16.66%, leading to procedures such as adhesiolysis with appendectomy (20.83%) and appendectomy with cecopexy (16.66%). By the 30th day, pain severity markedly decreased, with most patients reporting no or mild pain by 60 days. A targeted surgical approach proved effective, and future studies should assess long-term outcomes and develop standardized diagnostic protocols for chronic abdominal pain.

CONTRIBUTION OF AUTHORS

Research concept- Nihar Ranjan Pradhan, Manas Ranjan Mohapatra

Research design- Nihar Ranjan Pradhan, Manas Ranjan Mohapatra

Supervision- Juicy Mahanta

Materials- Nihar Ranjan Pradhan, Manas Ranjan Mohapatra

Data collection- Nihar Ranjan Pradhan, Manas Ranjan Mohapatra

Data analysis and interpretation-

Literature search- Nihar Ranjan Pradhan, Manas Ranjan Mohapatra

Writing article- Nihar Ranjan Pradhan, Manas Ranjan Mohapatra

Critical review- Juicy Mahanta

Article editing- Nihar Ranjan Pradhan, Manas Ranjan Mohapatra

Final approval- Juicy Mahanta

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