

**Original article:**

## **Evaluation of the Diagnostic and Therapeutic Role of Laparoscopy in Patients with Unexplained Chronic Abdominal Pain (UCAP)**

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### **Abstract**

**Introduction:** This study was undertaken to assess the diagnostic and therapeutic role of laparoscopy in patients with unexplained chronic abdominal pain (UCAP).

**Materials and Methods:** A total number of 55 patients with chronic abdominal pain were enrolled in this prospective descriptive cross-sectional study. We defined chronic abdominal pain as abdominal pain which persists for more than 3 months duration either continuously or intermittently. In all the patients, the pain was of unclear etiology, despite physical, laboratory, and radiographic evaluation. All surgeries were carried out under general anesthesia. All patients had a Ryle's tube inserted and bladder catheterized prior to anaesthesia. Pneumoperitoneum was created using Hasson's technique. A 10 mm umbilical camera port was inserted and two lateral 5mm ports depending on the organ of interest and the suspected pathology. The accuracy and the impact of the procedure on the outcome were evaluated.

**Results:** Mean age of the patients was 38.7±9.2 years. The mean duration of pain was seven months with the range of duration from five to ten months. The most common site of pain was the periumbilical region (32.7%) followed by the right lower quadrant (21.8%). The most common laparoscopic findings were adhesions (51.3%). Other findings included pelvic inflammatory disease (20%), Abnormal appendix (8.2%), abdominal tuberculosis (7.3%), Enlarged lymph node (3.1%) and hernia (4.1%).

**Conclusion:** Laparoscopy can be considered as an effective therapeutic and used in diagnosis of management of patients with chronic abdominal pain.

**Keywords:** Laparoscopy, Diagnosis, Chronic Abdominal Pain (UCAP).

### **INTRODUCTION**

Chronic abdominal pain is a difficult complaint.<sup>1</sup> It leads to evident suffering and disability, both physically and psychologically. Chronic abdominal pain is associated with poor quality of life.<sup>2</sup>

Chronic Abdominal Pain (CAP) is a common complaint of patients seeking a primary care physician, it is a leading reason for referral to a gastroenterologist and the 4th frequent chronic pain syndrome in the general population, it represent about 13% of all surgical admissions.<sup>3</sup> 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.<sup>4-7</sup> Exploratory laparotomy has several disadvantages apart from chances of negative laparotomy. It has an abdominal incision which makes the patients less ambulatory

due to pain, also it causes respiratory discomfort. It increases chances of wound infection, paralytic ileus. As a solution to these problems diagnostic laparoscopy has become very much popular now a days.

A high chance of a non-therapeutic abdominal exploration naturally results. Clearly diagnostic laparoscopy is an important intermediate option between refusing to explore a patient's abdomen and performing a laparotomy.<sup>8</sup> Laparoscopy, a medical science achievement developed in the twentieth century, offers a simple, rapid, and safe method to evaluate and diagnose intra-abdominal diseases. Laparoscopic surgical techniques are being put on an increasing number of surgical treatments.

Laparoscopy can identify abnormal findings and improve the outcome in a majority of patients with chronic abdominal pain, as it allows surgeons to see and treat many abdominal conditions that cannot be diagnosed otherwise.<sup>9</sup> It is a safe and effective tool and can establish the etiology and allows for appropriate interventions in such cases.<sup>10</sup> Abdominal adhesions are the most likely findings, especially in patients with a past history of abdominal operations.<sup>11</sup> Other findings such as appendiceal pathology, hepatobiliary causes, and endometriosis can be discovered and dealt with.<sup>12</sup> However, the role of laparoscopy in chronic abdominal pain is still debated by some authors who deny its value in adhesiolysis and consider it controversial and not evidence-based, and therefore, do not recommend it as a treatment for adhesions in patients with chronic abdominal pain.<sup>13,14</sup> In the present study we aim to evaluate the use of the laparoscope in the diagnosis and management of patients with chronic abdominal pain.

#### **MATERIALS AND METHODS**

A total number of 55 patients with chronic abdominal pain were enrolled in this prospective descriptive cross-sectional study. They were recruited from the indoor patient of the Surgery Department at hospital in Manipalkarnataka; all the patients underwent laparoscopic surgery for evaluation and management of their chronic abdominal pain. Patients with acute abdomen, unfit for GA. Bleeding disorders, severe cardiac and respiratory problems, and Patients of gynecological origin were excluded from the study. We defined chronic abdominal pain as abdominal pain which persists for more than 3 months duration either continuously or intermittently.

In all the patients, the pain was of unclear etiology, despite physical, laboratory, and radiographic evaluation. All surgeries were carried out under general anesthesia. All patients had a Ryle's tube inserted and bladder catheterized prior to anaesthesia. Pneumoperitoneum was created using Hasson's technique. A 10 mm 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 pathology. 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. Consent was taken if any special procedure was planned and also regarding possibilities of conversion of laparoscopy to laparotomy. In post operative management, Patients were monitored with pulse, blood pressure and temperature charting. Injectable antibiotics and analgesics were used accordingly. Ryle's tube and urinary catheter

were removed depending upon the condition. Most of our patients who were treated laparoscopically were discharged in 4 days. The patients who had to undergo laparotomy were discharged in 10 days depending upon the condition. Appropriate treatment was started once the diagnosis was established. The accuracy and the impact of the procedure on the outcome were evaluated.

**RESULTS**

Most of the patients studied were females (58.2%). Mean age of the patients was 38.7±9.2 years. The mean duration of pain was seven months with the range of duration from five to ten months. The most common site of pain was the periumbilical region (32.7%) followed by the right lower quadrant (21.8%) summarized in table 1. The mean operative time was 56 ± 25 minutes.

The most common laparoscopic findings were adhesions (51.3%). Other findings included pelvic inflammatory disease (20%), abnormal appendix (8.2%), abdominal tuberculosis (7.3%), Enlarged lymph node (3.1%) and hernia (4.1%). Operative and postoperative characteristics were shown in Table 2.

In most cases no postoperative complications had been reported except in three cases (One case showed bleeding and two cases showed infection). The bleeding could be dealt with through electrocautery and infection was dealt with proper antibiotics. After 2 months of follow up 35 patients had complete relief from pain while 5 patients had decrease in pain score. Rest 10 patients showed no improvement in pain.

**Table 1: Baseline characteristics of patients**

<b>Age, mean (range)</b>	38.7 ± 9.2
<b>Gender</b>	
Male	23 (41.8)
Female	32 (58.2)
<b>Duration of pain (Months)</b>	7
<b>Site of pain</b>	
Right lower quadrant	12 (21.8)
Right upper quadrant	10 (18.2)
Left lower quadrant	6 (10.9)
Left upper quadrant	9 (16.4)
Periumbilical	18 (32.7)
<b>History of previous abdominal surgery</b>	8 (14.5)

**Table 2: Operative and postoperative characteristics**

<b>Findings</b>	<b>Values</b>
Operative time (mean±SD)	56 ± 25 minutes
<b>Laparoscopic findings</b>	
Adhesions	51.3%
Hernia	4.1%
Abnormal appendix	8.2%

Abnormal gall Bladder	2.6%
Pelvic inflammatory disease	20%
Abdominal tuberculosis	7.3%
Enlarged lymph node	3.1%
Normal	3.4%
<b>Post operative hospital stay</b>	<b>2.5±2.1 days</b>

## DISCUSSION

The common causes of chronic abdominal pain were abdominal tuberculosis, Gynecological pathology, bands, adhesions, chronic appendicitis and abdominal malignancy in our study. In many developing countries including India infectious disease like tuberculosis is a more common cause of chronic abdominal pain than cancer. In our study laparoscopy provided a positive diagnosis in patients of chronic abdominal pain with unsettled diagnosis.

The abdominal disease is obscure and patients usually undergo exploratory laparotomy for definitive diagnosis. A delay in surgical intervention may increase morbidity and prolong hospital stay.<sup>15-18</sup> Diagnostic laparoscopy is useful for making a definitive clinical diagnosis whenever there is a diagnostic dilemma. Laparoscopy reveals either no abnormality or discovers a disease requiring no surgery for proper management, thus avoiding an unnecessary burden of non-therapeutic laparotomies.<sup>19,20</sup> Laparoscopy is particularly useful in women of childbearing age in whom tubo-ovarian abnormality simulates acute appendicitis. Without laparoscopy, the overall rate of unnecessary appendectomy is high. Bitter complaints of persistent symptoms and resistance to discharge from hospital without a 'diagnosis' are typical features of many patients with NSAP. These features, combined with a natural desire in surgeon to ensure that nothing serious is overlooked, contribute to excessive hospital stay in this group of patients.<sup>21-</sup>

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In our study the most common site of pain was the periumbilical region (32.7%) followed by the right lower quadrant (21.8%). The mean operative time was 56 ± 25 minutes. The most common laparoscopic findings were adhesions (51.3%). Other findings included pelvic inflammatory disease (20%), abnormal appendix (8.2%), abdominal tuberculosis (7.3%), Enlarged lymph node (3.1%) and hernia (4.1%).

Diagnostic laparoscopy in CAP with unknown etiology is a significant examination tool which increases our understanding of many underlying abdominal disorders. However it should be undertaken only after a complete diagnostic evaluation has been carried out. It is not only diagnostic but also considerably therapeutic irrespective of etiology of pain. Laparoscopy is able to achieve the final diagnosis and provide tissue diagnosis without any significant complication and less operative time.

## CONCLUSION

Laparoscopy can be safely concluded that diagnostic laparoscopy is a safe, quick, and effective adjunct to diagnostic modalities, for establishing a conclusive diagnosis, but, whether, it will replace imaging studies as the primary modality for diagnosis, needs more evidence. It is considered an effective therapeutic and used in diagnosis of management of patients with chronic abdominal pain.

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