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ROLE OF LAPAROSCOPY IN DIAGNOSIS AND MANAGEMENT OF CHRONIC ABDOMINAL PAIN

KINNARESH ASHWIN KUMAR BARIA[1]

Department of General Surgery, GCS Medical College, Hospital and Research Centre, Ahmedabad, Gujarat, India
E-mail: drkinnaresh@gmail.com

ABSTRACT

Chronic abdominal pain is a difficult complaint. It leads to evident suffering and disability, both physically and psychologically. Laparoscopy is one of the modalities that could be of benefit in such cases. We aim to evaluate the diagnostic and therapeutic value of laparoscopy in cases with chronic abdominal pain. As results, the most common site of pain was the right lower quadrant (50%). A definitive diagnosis was made in 45 patients (90%) while 5 patients (10%) had no obvious pathology. Appendiceal pathology were the most common laparoscopic findings (40.7%) followed by ovarian pathology (16.7%), and adhesions (14.8%). Postoperatively, pain relief was achieved in 47 patients (94%) after two months. Laparoscopy is an effective diagnostic and therapeutic modality in the management of patients with chronic abdominal pain.

KEYWORDS : Laparoscopy, Abdominal Pain, Appendicitis, Adhesions

Chronic abdominal pain is a common disorder both in general practice and in hospitals. Although patients with this type of pain may have undergone numerous diagnostic workups, including surgery, their pain remains a challenge to all known diagnostic and treatment methods.

After all, more than 40% of patients presenting with chronic abdominal pain had no specific etiological diagnosis at the end of their diagnostic workup. Chronic abdominal pain is associated with poor quality of life (Ferrell, 1995) and significant levels of depressive symptoms. Much is about the prevalence and suffering associated with chronic abdominal pain.

Many common organic and functional diseases can cause it. The most common organic conditions include intestinal adhesions, appendicular causes (Fayez et al., 1995) and biliary causes, while functional conditions include irritable bowel disease (Mertz, 2003), functional dyspepsia (Tack and Lee, 2005) and various motility disorders Abell and Workman et al., 1996). Abdominal wall pain is also common and frequently mistaken for visceral pain. After ruling out common diseases by careful investigations, many patients are still undiagnosed and represent a major diagnostic challenge to the surgeon (Galili et al., 2009).

With the introduction of laparoscopic surgery, a new tool has been added to our knowledge. The use of this new technology in the diagnosis and management of chronic abdominal pain has been tried in previous studies. Laparoscopy can identify abnormal findings and improve the outcome in majority of patients with chronic abdominal pain, as it allows surgeons to see and treat many abdominal conditions that cannot be diagnosed otherwise. It is a safe and effective tool and can establish the etiology and allows for appropriate interventions in such cases. Abdominal adhesions are the most likely findings, especially in patients with past history of abdominal operations. Other findings such as appendicular pathology, hepatobiliary causes, and endometriosis can be discovered and dealt with (Salky and Edge,1998).

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. 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

Between June 2009 and November 2011, a total number of 50 randomly selected patients with chronic abdominal pain were enrolled in this prospective descriptive cross-sectional study, with their pre informed written consent. They were recruited from the indoor patient of the General Surgery Department, Sheth V. S. General Hospital, Ahmedabad; all the patients underwent

[1]**Corresponding author**

laparoscopic surgery for evaluation and management of their chronic abdominal pain. 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. The patients who presented with acute abdominal pain were excluded from the study. Also patients with known abdominal malignancy, patients being treated by psychiatrists, and patients under the age of 13 years were excluded.

All of the studied patients were subjected to a complete preoperative evaluation through a medical history and an abdominal examination to find out if there were any organic diseases of the alimentary tract or the abdomen. Special concern was given to any past history of abdominal operations. Associated symptomatology, such as vomiting, fever or abdominal distention, were noted and recorded. Routine preoperative laboratory investigations including coagulation profile and complete blood count were performed. A total of 72 imaging studies (excluding plain films) had been done before laparoscopy, including 50 abdominal ultrasounds, 11 barium meal and follow through, 7 computed tomographies, (CT), 3 barium enemas and 4 upper gastrointestinal endoscopies.

Operative Technique

The procedure was entirely performed with the patient under general anesthesia. A standard three-trocar technique was used (10-mm optic via umbilical trocar and two 5-mm lateral trocars). A fourth 5-mm trocar was inserted in a few cases. The whole abdominal cavity was inspected carefully starting from the liver, gallbladder, anterior surface of the stomach and spleen. With fine smooth graspers, these structures could be touched safely and elevated for further inspection. The small bowel was examined using these atraumatic graspers. It was inspected thoroughly from the ligament of Treitz to the ileocaecal valve, keeping in mind the fact that the loops with the large bit had to be grasped as much as possible to avoid the pinpoint fixation of the bowel with its perforation risk. The colon including the appendix was inspected in the same manner as the small bowel. Finally, the gynecological organs and peritoneal surfaces were inspected. If adhesions were seen between the intestinal loops and the abdominal wall or between the abdominal organs, they were dissected with a scissors in a vast majority of patients. Electrocautery was used mainly for hemostasis and as a dissection technique in few cases. The dissection was made close to the abdominal wall to avoid injury to the bowel loops. Other laparoscopic procedures such as appendectomy, ovarian cyst deroofing and biopsies were performed according to the patient's condition.

Postoperative Evaluation

After the laparoscopy, postoperative hospital stay was recorded. Standard diclofenac sodium 75 mg was used for postoperative pain relief. All the patients were re-evaluated after two months. The pain in the late postoperative period was classified into: worse, unchanged, less pain, and disappearance of pain. Less pain and disappearance of pain were referred to as positive outcomes, while unchanged and worse pains were referred to as negative outcomes.

STATISTICALANALYSIS

Gathered data were processed and analyzed.

RESULTS

The table 1 indicates that the studied patients were in the age group ranging from 13-55 years. Most of the patients studied were females (84%). The mean duration of pain was seven months with the range of duration from three to eleven months. The most common site of pain was the right lower quadrant (50%) followed by the periumbilical region (40%). Twenty patients were using either non-steroidal drugs or pain killers to relieve the pain, and six patients were using proton pump inhibitors. Eleven patients (22%) had undergone at least one previous surgical dominal procedure.

There were eight cases converted to open procedures. Out the 50 patients with chronic abdominal pain, a definitive diagnosis was established in 45 patients (90%), while no identifiable cause could be reached in five patients (10%).

The table 2 mentions that, that the most common laparoscopic findings were appendiceal pathology (40.7%).

Table 1 : Baseline Characteristics of The Studied Patients

Characters	Value
1.Age (Years Range)	13-55
2.Gender	
2.1. Male	8 (16%)
2.2.Female	42 (84%)
3.Duration of Pain (Months) Mean (Range)	7 (3-11)
4.Site of Pain	
4.1. Right Lower Quadrant	25 (50%)
4.2.Right Upper Quadrant	4 (8%)
4.3.Left Lower Quadrant	1 (2%)
4.4.Left Upper Quadrant	Nil
4.5.Periumbilical	20 (40%)
5.History of Previous Abdominal Surgery	11 (22%)

Other findings included ovarian cysts (16.7%), adhesions (14.8%), gall bladder pathology (7.4%), ileo-caecal mass (7.4%), mesenteric lymphadenopathy (5.6%), strictures (5.6%) and jejunal diverticulum (1.8%). Twenty-two patients showed appendiceal pathology; and their pathology revealed evidence of chronic appendicitis. All patients with adhesions had undergone previous abdominal surgery. Other pathological diagnoses such as chronic acalculus cholecystitis, and multiple enlarged mesenteric lymph nodes were found.

Laparoscopic management included appendectomy, adhesiolysis, cholecystectomy, ovarian cyst deroofing and cystectomy and lymph node biopsy. Five patients had no interventions performed.

Postoperative hospital stay ranged from two to fourteen days.

Table 2 : Laparoscopic Findings, Intraoperative Data & Postoperative Characteristics

Findings	Value
1.Laparoscopic Findings	
1.1. Abnormal Appendix	40.7%
1.2. Ovarian Cysts	16.7%
1.3. Adhesions	14.8%
1.4. Abnormal Gall Bladder	7.4%
1.5. Ileo- Caecal Mass	7.4%
1.6. Enlarged Lymph Nodes	5.6%
1.7. Bowel Strictures	5.6%
1.8. Jejunal Diverticulum	1.8%
2.Postoperative Complications	
2.1. None	94%
2.2. Infection	6%
3.Postoperative Hospital Stay (Days Range)	2-14

Table 3 : Postoperative Pain Relief

Duration	Positive Outcome	Negative Outcome
After 2 Months	94%	6%

In most cases no postoperative complications had been reported except in three cases (showed infection). The wound infection responded well to oral antibiotic and daily dressing. During the time of follow up, all patients were re-evaluated for pain.

The table 3 denotes that, that after two months, positive outcome (less pain or disappearance of pain) was achieved in 47 patients (94%) while negative outcome (unchanged or worse pain) was noted in 3 patients (6%) in the first two months.

DISCUSSION

Chronic idiopathic pain syndromes are among the most challenging and demanding conditions to treat across the whole age spectrum. Potentially it can be unrewarding for both the patients and the medical team (American Academy of Pediatrics., 2005).

Studies conducted with large community samples or hospital populations imply chronic abdominal pain is a pervasive problem. Abdominal pain was the third most common pain complaint of individuals enrolled in a large health maintenance organization (Von et al., 1988).

All patients included in the study had chronic abdominal pain, and they were subjected to laparoscopic evaluation after exclusion of all organic causes of the pain by radiographic and laboratory tests. The study confirmed that in this difficult patient group, laparoscopy could safely identify abnormal findings and can improve the outcome in a majority of cases.

A majority of patients had appendiceal pathology as the cause of pain, while those who had undergone previous abdominal surgery, and not surprisingly, adhesions were found. However, a significant number were found to have a variety of other conditions to which their pain could be attributed, while a less number were found to have no clear pathology, during laparoscopy. The use of laparoscopy in patients with ill-defined chronic abdominal pain remains controversial.

We found that in a selected patient group,

laparoscopic evaluation of chronic abdominal pain is usually associated with a positive outcome (90%) in terms of less or no pain, after two months of laparoscopy.

In conclusion, laparoscopy has an effective diagnostic role in evaluating patients with chronic abdominal pain, in whom conventional methods of investigations have failed to elicit a certain cause. The therapeutic value of laparoscopy is also accepted and appreciated.

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