

Study on Efficacy of Laparoscopy in Patients with Chronic Abdominal Pain: A Teaching Hospital Based Study

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ABSTRACT

Background: Chronic abdominal pain can be diagnostic challenge. Diagnostic laparoscopy allows a surgeon to directly view the types of abnormal abdominal contents that could be the cause of pain and which would not be otherwise diagnosed and it can exclude other causes of pain. **Methods:** This study included 35 patients according to inclusion & exclusion criteria; 20 males and 15 females presenting with history of abdominal pain for 3 or more months who were admitted in surgical wards. **Results:** The most common findings were appendicitis (48.6%) which was found in 17 cases. At laparoscopy no abdominal and pelvic abnormality was noted except that appendix appeared abnormal. The second common findings were abdominal tuberculosis (25.7%) which was found in 9 cases. **Conclusion:** chronic abdominal pain of unknown origin represents a significant problem in surgical patients. Due to improvement in instrumentation and greater experience in the laparoscopy, the procedure no longer limited to visualization. This study showed that laparoscopy is an effective approach in the management of patients with chronic abdominal pain.

Keywords: Chronic abdominal pain, Diagnostic laparoscopy and Pain relief.

INTRODUCTION

Chronic abdominal pain is one of the common presentations, in general, surgical practices. In spite being subjected to myriad of tests, almost 40% of patients remain undiagnosed at the end of it.^[1-4] Abdominal pain of longer duration is associated with poor quality of life and significant levels of depressive symptoms.^[5,6] Surgical consultation often occurs late after other modalities have failed to provide resolution of their symptoms. Chronic abdominal pain is a significant clinical problem that often leads to repeated laparotomies. The introduction of laparoscopic surgery and recent advancements in laparoscopy have been increasingly recognized as a procedure that offers precise visual assessment of intra-abdominal condition for diagnosis and prompt intervention.^[7] Laparoscopy has been found to have significant diagnostic and therapeutic role in patients with chronic abdominal pain. In case of diagnostic uncertainty, laparoscopy may help to avoid unnecessary laparotomy, provide accurate diagnosis and help to plan surgical treatment. The main advantage of laparoscopic evaluation is to detect the presence or absence of intra-abdominal organic lesion. Laparoscopy allows surgeons to visualize and treat many abdominal conditions that could not be diagnosed otherwise. Aim of this present study was the efficacy of diagnostic laparoscopy in patients with chronic abdominal pain.

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MATERIALS AND METHODS

This present study was conducted in the Department of Surgery, Pacific Institute of Medical Sciences, Umarda, Udaipur, India. This study included 35 patients according to inclusion & exclusion criteria; 20 males and 15 females presenting with history of abdominal pain for 3 or more months who were admitted in surgical wards between July 2015 to November 2015. Detailed history was recorded from patients and thorough clinical examination was performed. The findings were recorded in the preformed. The recorded data included demographics, duration of pain, location of pain, patient's abdominal examination and diagnostic studies performed. Routine hematological investigations viz. complete blood count, renal function tests and serum electrolytes were performed in all the patients along with urine routine and microscopy. Commonly performed imaging studies included plain abdominal radiography and ultrasounds studies. Barium studies were done where ever indicated. All the patients underwent diagnostic laparoscopy. Intra-operative findings and operative interventions undertaken were also recorded. According to the pathology various surgical methods were employed.

RESULTS

This study comprised of 35 cases of chronic abdominal pain with peak incidence in second decade. In present study, youngest patient was 12 years and oldest patient 58 years. The mean age of presentation was 28.5 years [Table 1]. The incidence in male (57.14%) was higher than female (42.9%). The peak

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incidence of duration of pain was between 1 to 10 weeks. The average duration of pain was 11.26 weeks. Various symptoms were observed among the patients as described in Table 3. Chronic abdominal pain was further categorized according to the site of pain where most of the patients presented with lower abdominal pain (42.9%), diffuse abdominal pain (22.9%) and 34.3% with upper abdominal pain [Table 4].

Table 1: Age distribution of patients with chronic abdominal pain

| Age group in years | Number of Cases (%) |
|--------------------|---------------------|
| 10-19 | 9(25.7) |
| 20-29 | 13(37.1) |
| 30-39 | 7(20.0) |
| 40-49 | 4(11.4) |
| 50-59 | 2(5.7) |
| >60 | 0(0.0) |

Table 2: Duration of pain before laparoscopy

| Duration in weeks | Number of Cases (%) |
|-------------------|---------------------|
| 1-10 | 18(51.4) |
| 10-20 | 13(37.1) |
| 20-30 | 3(8.6) |
| 30-40 | 1(2.9) |

Table 3: Various symptoms

| Symptoms | Presents (%) | Absents (%) |
|----------------------|--------------|-------------|
| Pain | 35 | 0(0.0) |
| Vomiting | 16(45.7) | 19(54.3) |
| Fever | 12(34.3) | 23(65.7) |
| Abdominal distension | 4(11.4) | 31(11.4) |
| Bowel symptoms | 3(8.6) | 32(8.6) |

Table 4: Location of pain

| Location | Number of Cases (%) |
|-----------------|---------------------|
| Upper abdomen | 12(34.3) |
| Lower abdomen | 15(42.9) |
| Diffuse abdomen | 8(22.9) |

Table 5: Previous history of abdominal operation

| History of operation | Number of Cases (%) |
|----------------------|---------------------|
| Present | 11(31.4) |
| Absent | 24(68.6) |

[Table 5] shows the 11 patients (31.4%) with chronic abdominal pain had previous history of abdominal operation. All of them are with history of tubectomy, none of them had intra-abdominal adhesion. On diagnostic laparoscopy, the most common finding was appendicitis which was found in 17 (48.6%) cases. In these patients, during laparoscopy, no other abdominal and pelvic abnormality was noted except that appendix appeared chronically inflamed and fibrosed. The various positions of appendix on diagnostic laparoscopy were noted. All 17 (48.6%) patients underwent laparoscopic appendectomy. The resultant effect of appendectomy on chronic abdominal pain is shown in Table-6. The second common cause findings were abdominal tuberculosis which was found in 9 (25.7%) cases.

Table 6: Findings at laparoscopy and treatment adopted

| Operative findings | Treatment | Number of Cases (%) |
|--------------------------|-------------------|---------------------|
| Appendicitis | Appendectomy | 17 (48.6) |
| Tuberculosis | Cat 1 ATT | 9 (25.7) |
| Fimbrial cyst | B/L cyst excision | 2 (5.7) |
| Ovarian cyst | Aspiration | 3 (8.6) |
| Cirrhosis of liver | Symptomatic | 1 (2.9) |
| Acalculous cholecystitis | Cholecystectomy | 1 (2.9) |
| Normal study | Observation | 2 (5.7) |

From [Table 6] it is evident that most common findings were appendicitis (48.6%) which was found in 17 cases. At laparoscopy no abdominal and pelvic abnormality was noted except that appendix appeared abnormal. The second common findings were abdominal tuberculosis (25.7%) which was found in 9 cases. All patients proven with omental biopsy, then treated with CAT 1 anti-tubercular drugs. These abnormalities some were thickened and adherent to adjacent structure. Some curved and felt rigid. HPE s/o chronic appendicitis. Two patient had B/L fimbrial cyst, laparoscopy was converted to open. Fimbrial cyst excision with right oophorectomy done. Three patient had ovarian cyst, laparoscopy aspiration done. One patient had cirrhosis of liver, managed conservatively. One patient had thickened gall bladder wall, laparoscopic cholecystectomy done. In two patients no abnormality was found and kept on observation.

Table 7: Outcome of abdomen tuberculosis

| Change of pain | Number of Cases (%) |
|-----------------|---------------------|
| Pain resolution | 8(88.9) |
| No change | 1(11.1) |
| Total | 9(100) |

Nine patients were treated with anti-tubercular drugs following confirmation by histopathological report. Eight patients had resolution of pain (88.9%) and in another one patients (11.1%) there was no change [Table 7]. All 17 patients underwent laparoscopic appendectomy. The resultant effect of appendectomy on chronic abdominal pain is shown in [Table 8].

Table 8: Effect of appendectomy on chronic abdominal pain

| Change of pain | Number of Cases (%) |
|-----------------|---------------------|
| Pain resolution | 17(100) |
| No change | 0(0.0) |
| Total | 17(100) |

DISCUSSION

Chronic abdominal pain is a common problem, dealt with by a variety of medical specialists. Even after an extensive work up in some patients, no pathological condition is found by non-invasive investigation and the pain is often attributed to unsubstantiated diagnosis. Diagnostic laparoscopy makes it possible for the surgeon to visualize

surface anatomy of intra-abdominal organs with greater details better than any other imaging modality. Laparoscopy may be useful to establish a histological diagnosis of intra-abdominal tuberculosis.^[8] Deep parenchymal organs, process of the retroperitoneal space, and the inner surface of the hollow organs cannot always be noticed using laparoscopy. Another limitation of laparoscopy is that it does not allow the surgeon to palpate organs. Before laparoscopy is performed in chronic abdominal pain, pre-operative imaging studies have to be undertaken. As in our material, most of the patients have been studied by endoscopies and ultrasound before laparoscopy. The subjective benefit of laparoscopy for both the operating surgeons and for the patients is the definitive answers that no serious pathology is found intra abdominally. Therefore the placebo effect of laparoscopy may explain at least partly the patient's pain relief.

Before laparoscopy is performed in chronic abdominal pain, pre-operative imaging studies need to be undertaken. In present study, the patients have undergone endoscopies and ultrasound before laparoscopy. In their study, Arya et al found that the most common findings were intestinal and peritoneal tuberculosis and attributed this to the high incidence of tuberculosis among Indian population.^[9] In present study the most common finding was chronic appendicitis followed by tuberculosis. This can be explained by the fact that majority of our patients belonged to 2nd decade of life where appendicitis is quite common. Appendix as a cause of chronic abdominal pain should always be kept in mind and the patients should be thoroughly investigated for the same. Removal of appendix in patients with inconclusive findings has been a matter of debate since ages. In their study, Fayez et al analyzed records of patients with chronic abdominal pain undergoing appendectomy. They reported that in about 92% of patients appendices that were removed had abnormal histological findings and 92% of patients had resolution of pain subsequent to appendectomy.^[10] Onders et al, reported improvement in pain in 74% of patients with chronic right lower abdominal pain.^[11] In present study, 17 (48.6%) patients underwent appendectomy for chronic abdominal pain had resolution of pain was observed in all 15 patients (100%). In various studies laparoscopy has also proved beneficial and efficacious in treatment of chronic abdominal pain of any origin. Laparoscopy has a great deal to offer an early diagnosis of abdominal tuberculosis and treatment.^[12] Krishnan et al, reported that in patients suspected to have abdominal tuberculosis without evidence of extra abdominal disease, early laparoscopy may be useful to establish a histological diagnosis with acceptably low morbidity (8%).^[13] In another study, Rai et al

reported abdominal tuberculosis in 23 (92%) patients.^[14] In present study, common finding in abdominal tuberculosis were peritoneal and visceral tubercles, varying from 2 mm to 1 cm in size. Ascites and small bowel adhesions were also observed in few patients. The importance of diagnostic laparoscopy cannot be overstated in patients with tubercular peritonitis particularly in areas where sophisticated pathological or genetic investigations are not available. In our study the diagnosis of tuberculosis was successfully established in 9 (25.7%) patients. All these patients showed significant improvement and resolution in symptoms with anti-tubercular therapy. Despite multiple advantages laparoscopy has some limitations as well. Deep parenchymal organs, retro-peritoneal space and the inner surface of the hollow organs cannot always be noticed using laparoscopy and the pathologies in these regions need careful observation in order to avoid and inadvertent complication.^[15] Another limitation of laparoscopy is loss of dexterity which may be helpful in diagnosing several conditions. Additionally, laparoscopy has more steep learning curve as compared to open surgery.

CONCLUSION

These findings suggest that the chronic abdominal pain of unknown origin represents a significant problem in surgical patients. Due to improvement in instrumentation and greater experience in the laparoscopy, the procedure no longer limited to visualization. This study showed that laparoscopy is an effective approach in the management of patients with chronic abdominal pain. Advantages of diagnostic laparoscopy are that it is minimally invasive, safe and efficacious. Additionally, diagnostic and therapeutic procedure can be performed at same time. Nevertheless, patient selection and appropriate operative technique are essential for rewarding outcome. Diagnostic laparoscopy reduces overall hospital stay, post-operative complications including pain, early return to work, avoids ugly scar. Hence cost effective with same result comparison to open.

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