



LAPAROSCOPIC EVALUATION IN UNEXPLAINED ABDOMINAL PAIN

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ABSTRACT

Introduction: Unexplained abdominal pain is a common presentation and its difficulty as well as delay in specific diagnosis is common issue for clinicians. Such patients can undergo a number of investigations with failure to reach any diagnosis. The aim of this study was to evaluate the use of laparoscopy in the diagnosis and management of patients with unexplained abdominal pain. **Method:** This cross-sectional study was conducted at Bir Hospital, Kathmandu, Nepal from January 2016 to December 2018. A total of 76 patients of unexplained abdominal pain not diagnosed by routine clinical examination and investigations were included in the study. These patients were subjected to diagnostic laparoscopy for evaluation of their conditions and to confirm the diagnosis. Patients diagnosed with gynecological problems were consulted and managed with gynecologist. The findings and the outcomes of the laparoscopy were recorded and data was analyzed. **Results:** Unexplained abdominal pain was common in females than in males. The most common laparoscopic findings were appendicitis followed by abdominal tuberculosis. 90.41% patients achieved pain relief after laparoscopic intervention. **Conclusion:** Laparoscopy is safe and beneficial in majority of patients with unexplained abdominal pain. Training and experience in laparoscopic surgery is essential for General surgeons to provide maximum benefit to these difficult patients.

KEYWORDS: Diagnostic laparoscopy, unexplained abdominal pain, abdominal tuberculosis, appendicitis.

INTRODUCTION

Unexplained abdominal pain is one of the common presentations, in general, surgical practices. Almost 40% of patients remain undiagnosed even after thorough investigation for various diagnostic purposes.^[1-4] Poor quality of life is a burden for developing countries and also has been associated with prolonged abdominal pain^[5] and significant levels of depressive symptoms which also adds to the cause.^[6] The most common organic conditions include intestinal adhesions,^[7,8] especially in patients with a past history of abdominal operations, abdominal tuberculosis,^[9] appendicular pathology, biliary causes, mesenteric lymphadenopathy (could also be as a result of infective causes of gastrointestinal tract such as colitis, gastroenteritis or enteric fever apart from tuberculosis), and hernia; while functional conditions include irritable bowel disease, functional dyspepsia, and various motility disorders. Abdominal wall pain is also common and frequently mistaken for visceral pain.^[10,11] In spite of investigations such as ultrasonography, computed tomography scan, etc., it is cumbersome for specific diagnosis. It represents a major diagnostic challenge to the surgeon.^[12] With the advent of laparoscopic surgery, a new tool has been added to our knowledge. The use of this minimally invasive technique in the diagnosis and management of

unexplained abdominal pain has been attempted earlier by the various author.^[13,14] By visualization of pathological sites through laparoscopy, identification and diagnosis has been easier for general surgeons which adds on to his clinical experience and offers him for more independent approach which is not possible otherwise.^[4,15] 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 do not recommend it as a treatment for adhesions in patients with chronic abdominal pain.^[16,17] Laparoscopic surgery has modified the management of many surgical diseases.^[18] Diagnostic laparoscopy is now accepted as the preferred primary approach to many disease processes.^[19]

In the present study, our objective is to evaluate the use of laparoscopy in the diagnosis and management of patients with unexplained abdominal pain.

METHOD

This cross-sectional study was conducted in Bir hospital, Kathmandu from January 2016 to December 2018. In this study period, 150 patients with unexplained vague abdominal pain of more than six months duration presented to general surgery outpatient department. All

patients were thoroughly interrogated and examined in detail. This included rectal examination by surgeon and vaginal examination by gynaecologist. Routine investigations were done uniformly in these patients, like complete blood picture, ESR, urine routine examination, blood sugar, blood urea nitrogen & serum creatinine, plain x-ray abdomen, x-ray chest and ultrasonography of abdomen and pelvis. Few patients were subjected to additional investigations as indicated by their specific clinical presentation e.g., stool routine examination & occult blood, upper and lower GI endoscopy, serology for tuberculosis, contrast gastrointestinal studies, ascitic fluid examination, liver function test, intravenous urography, cystoscopy and CT abdomen & pelvis. Diagnosis was made in 74 patients after routine clinical examination and these above-mentioned investigations. Rest of the patients were advised for invasive procedure of laparoscopy for their diagnosis. Out of 150, only 76 patients were willing to participate and gave consent for laparoscopy. A written consent was taken before inclusion in the study. Patients with unexplained abdominal pain of more than 6 months duration who had normal or inconclusive investigations were included in the study. Patients with previous abdominal surgery, uncorrected coagulopathy, known medical, gynaecological or surgical cause of pain, unfit for laparoscopy due to cardiac or pulmonary conditions, and patients with pregnancy were excluded from the study. Patients who diagnosed with gynaecological problems after laparoscopy were also excluded. The procedure of laparoscopy was performed with patient in supine position under general anaesthesia. All patients received one gram of cephalosporin as antibiotic prophylaxis. The standard three trocar technique was used with 10 mm optical port at umbilicus and two 5 mm lateral working ports. Additional 5 mm port was placed in few cases according to the type and the site of intervention. The whole abdominal cavity was inspected carefully starting from peritoneal surfaces, liver, gall bladder, anterior surface of stomach, spleen, small bowel up to ileocaecal junction, caecum, appendix, large bowel and rectum. Inner surfaces of abdominal and pelvic walls were closely inspected and any intraperitoneal fluid was aspirated for bacteriological and cytological examination. In females the gynaecological organs were also inspected and an experienced gynaecologist's consultation was done as per required. After confirming the diagnosis, surgical interventions were made accordingly. Adhesions were released and dissected with the scissors in majority of cases. Electrocautery was used mainly for haemostasis and also as dissections in few cases. Other laparoscopic procedures like appendectomy, ovarian cyst aspiration or deroofing and biopsies were performed according to the patient's condition. Postoperatively standard NSAID was used for pain relief in all patients. Patients were fortnightly followed up for two months and their assessment regarding abdominal pain was done. The pain was classified as worse, unchanged, less pain and disappearance of pain or no pain. Less pain and no

pain/disappearance were referred as positive outcomes, while unchanged and worse pain was referred as negative outcomes. Other outcome measures included diagnosis made, operative time, hospital stay and postoperative complications. All information and results were collected on a designed Performa and data was analyzed on SPSS version 25. Descriptive statistics like frequency, percentage, mean and standard deviation were calculated.

RESULTS

The age of patients was ranged between 14 and 60 years with mean age was 38.4 ± 7.90 . The incidence of unexplained abdominal pain is 53.34% (76 out of 150 patients). This symptom of pain was more common in females 51 (67.1%) than in males. Of these females 48 were married and rests were unmarried. The mean duration of abdominal pain was 8.2 ± 3.6 months. Final diagnosis was made in 70 (92.10%) out of 76 patients who had laparoscopy. Eleven patients had gynaecological problems as shown in figure 1. In 6 out of 76 (7.90%) patients no diagnosis was established. The most common laparoscopic findings in rest of patients were abdominal tuberculosis, appendicitis and adhesions. All laparoscopic findings were confirmed by histopathology except in hernia patients. Abdominal tuberculosis and appendicitis were the most common pathological diagnoses. One patient required laparotomy for severe pelvic adhesions. Diagnoses made on laparoscopy and procedures performed are shown in figure 1. The average duration of laparoscopic procedure was 82 minutes and postoperative hospital stay ranged from two to eight days. Among the postoperative complications 3 (3.9%) had fever and chest infection, 2 (2.6%) patients developed wound infection, 1 (1.31%) with fever alone. 3 patients were lost from follow up. Out of 73 patients who came for regular follow up, positive outcome for pain relief was achieved in 66 patients (90.41%), while negative outcome was noted in 7 patients (9.59%).

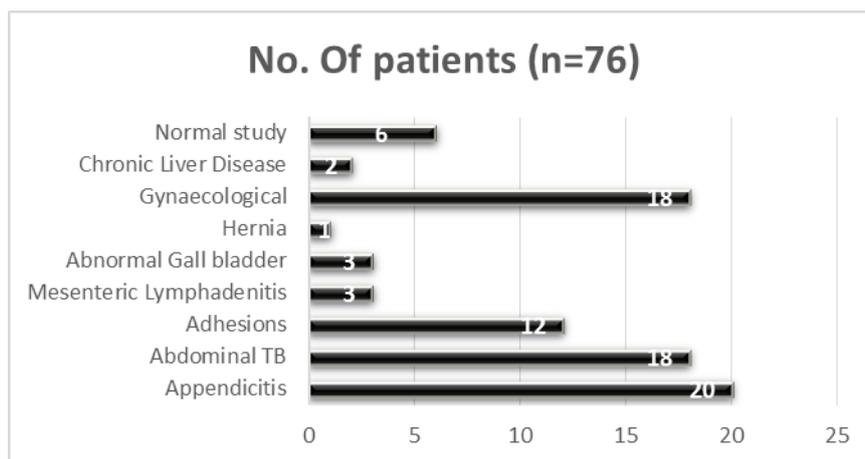


Figure 1. Bar diagram showing frequency of various diagnoses.

DISCUSSION

Unexplained abdominal pain warrants extensive investigation in regard for underlying cause and its diagnosis and laparoscopy provides essential tool to mitigate this situation. Our study of 76 cases revealed positive laparoscopy in 70 (92.1%) of cases. It is consistent with the other published literature.^[19-22] Seventy-six percentage of laparoscopically evaluated cases in chronic abdominal pain were positive in study by Kontoravdiset and his colleagues.^[23] High percentage of positive laparoscopies, as in our study and other literature has proved the significant role of laparoscopy in management of unexplained pain abdomen.

Appendicitis was the cause of unexplained pain in 20 (26.31%) patients in our study. Most of them had chronic variant of appendicitis that is difficult to diagnose by routine investigations.^[24] All the patients reported cure of pain after laparoscopic appendectomy. Literature view has shown frequency of chronic appendicitis in patients with chronic abdomen pain from 2.7–15.7% with improvement in pain after appendectomy in up to 95% of patients.^[25-28] Abdominal tuberculosis was the one of the common pathology detected in our study. Peritoneal tuberculosis is difficult as size of the tubercles is usually less than 5 mm, which are not detected on ultrasonography or CT scan. Laparoscopy provides specimen for definite histopathological diagnosis. Rodriquez de Lope et al. diagnosed 14 cases of tubercular ascites with the help of peritoneal biopsy.^[29] We diagnosed 18 cases of abdominal tuberculosis with laparoscopy. Out of these, 15 had peritoneal tuberculosis while three patients had intestinal tuberculosis who underwent resection of bowel. Laparoscopy confirmed the diagnosis with the help of gross appearance or peritoneal biopsy. WHO reported there is high incidence of tuberculosis in developing countries which was reflected in regional studies.^[30,31] Study by Samina et al revealed tuberculosis in 26.98% of cases, pelvic inflammatory disease 20.63%, endometriosis 14.28%, adhesions 9.52% and ovarian cysts 7.93%.^[32] In patients where adhesions are a suspected cause of abdominal pain, surgical exploration is the only way to confirm

their presence.^[33] Adhesions cause abdominal pain because they restrict the movement of abdominal organs especially gut.^[34] An Indian study described adhesions as the most common cause of chronic abdomen pain, which was in 30% of cases. Literature also showed frequency of detected adhesions on laparoscopy from 18–31.5%.^[35,36] Laparoscopy has become the least invasive way of diagnosing the presence of adhesions. Adhesiolysis were done laparoscopically in 12 (15.78%) patients in our study with good results. One patient underwent laparotomy because of severe pelvic adhesions and adhesiolysis was done. Inguinal, femoral, and sciatic hernias can all be identified and treated during laparoscopy. In a small study of 20 patients with sciatic hernias, Miklos et al showed that laparoscopic surgical repair could result in significant symptom relief.^[37] Hernias should always be included in the differential diagnosis of unexplained abdominal pain, and laparoscopy is a very useful tool in the diagnosis and treatment of hernias associated with pain. We diagnosed and treated successfully one patients of inguinal hernia with laparoscopy in our study. Numbers of other abdominal pathologies are described for the cause of unexplained abdominal pain in literature. We detected the following otherpathologies in our study, mesenteric lymphadenitis (3.95%), chronic liver disease (2.64%), and abnormal gall bladder (3.95%). All these pathologies were dealt accordingly with favourable results. Sixty-six (90.41%) patients have achieved positive outcome regarding pain relief. Fifty-six (84.85%) reported complete relief of pain and 10 (15.15%) reported reduction in pain; while 7 out of 73 (9.59%) patients reported negative outcome with no improvement in pain. Di Lorenzo has reported pain relief in 60.2% of cases, pain reduction in 23.1% and no improvement in 16.7% of patients.^[36]

CONCLUSION

Laparoscopy is safe, beneficial and minimally invasive technique in majority of patients with unexplained abdominal pain. Diagnostic and therapeutic application is sensible and undeniable, where the diagnostic dilemma exists. General surgeons should acquire training and

experience in laparoscopic surgery to provide maximum benefit to these difficult patients.

Conflict of interest: None.

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