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The Role of Diagnostic Laparoscopy In Chronic Abdominal Pain

Medical Science

KEYWORDS : Chronic abdominal pain, Diagnostic Laparoscopy, Chronic pain in abdomen, Intestinal adhesions.

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ABSTRACT

Abstract: The aim of the present study was to evaluate the role of Diagnostic Laparoscopy in Chronic Abdominal pain. Laparoscopy can identify abnormal findings and improve the outcome in a majority of patients with chronic abdominal pain.

Materials & Methods: Our study included 50 cases of chronic abdominal pain for 6 months or more and with no remarkable findings on clinical examination and unyielding imaging studies. The final outcome of the study was measured in terms of finding the cause of pain and the subsequent treatment given.

Results: In our study, we were able to reach the final diagnosis with Histopathological examination and pelvic fluid analysis in 88% of patients and the study was inconclusive in 12% of patients. The commonest disease in our study was abdominal tuberculosis (TB) followed by intestinal adhesions.

Conclusion: Diagnostic Laparoscopy is a safe, efficacious, rapid and cost effective mean of diagnosing and treating the cause of chronic abdominal pain. The advantage of diagnostic laparoscopy can be clustered with therapeutic procedures, which helps in relieving the patient's symptoms.

INTRODUCTION

"Diagnosis should precede treatment whenever possible".[1]

Chronic abdominal pain is a significant clinical problem that often is difficult to diagnose, locate and frustrating for the patient as well as for the physician hence becoming a challenge for the surgeon. Chronic abdominal pain may or may not be associated with obvious organic findings. In each case the psychological and organic aspects may be extremely difficult to separate. Diagnostic laparoscopy is useful for the evaluation of chronic abdominal pelvic pain and is associated with excellent results and low risk. Diagnostic Laparoscopy represents a less invasive method of general abdominal exploration compared with open laparotomy and in many cases, provides a therapeutic option that offers the patient equivalent results with less invasive surgery and all of the associated benefits of the laparoscopic approach.(2) When Laparoscopy is applied only for diagnosis it can prevent unnecessary abdominal explorations in 13-18% of patients.(3,4)

General Surgeons became more interested in the field of Diagnostic Laparoscopy in early 1980's after the advent of Laparoscopic Cholecystectomy.(5) Currently, diagnostic laparoscopy is getting wide acceptance as an alternative to laparotomy. This is primarily due to the growing experience and familiarity with Laparoscopic surgery and improvement in instrumentation.(6)

Diagnostic Laparoscopy in the hands of surgeons proved to have an impact as an investigation and even therapeutic technique where the diagnosis remained uncertain after the laboratory and non-invasive investigation of selected patients with chronic abdominal disorders. It is a minimally invasive procedure which has a high percentage of accuracy in diagnosis and impact in the further management of selected patients.(7)

In this study we have tried to evaluate the importance of Diagnostic Laparoscopy as a tool for diagnosing chronic abdominal pain.

MATERIALS & METHODS

This was a Prospective study done at Dr D Y Patil Medical College, Hospital and Research Centre, Pimpri, Pune during June 2012 to September 2014.

The sample size was calculated as 50 cases of chronic abdominal pain.

The Institute Ethical Committee approval was taken before the commencement of the study.

The study included those patients who had chronic abdominal pain of duration 6 months or more & presenting themselves to Surgery & Obstetrics & Gynecology OPD.

The patients with acute pain in abdomen, abdominal wall sepsis, pregnant females & patients with Cardio-respiratory distress were excluded from studies.

After taking a detailed history of the patient & ruling out the exclusion criteria, patients were enrolled in the study and then

subjected to biochemical and radiological investigation & then subjected to Diagnostic Laparoscopy under general anaesthesia.

The Laparoscopic instruments used were of Karl Storz (™) Image 1.

Pneumoperitoneum was created using CO2. Two ports were inserted, one 10 mm port at the umbilicus & other 10 mm port at the epigastric region. The third port of 5 mm was placed in right or left Iliac region depending on the pathology detected.

Inspection of the complete peritoneal cavity was done looking for liver, spleen, small intestine, stomach and of the uterus, ovary & fallopian tubes in females.

In case of solid lesion biopsies were taken from the lesions & send for HPE. If intraperitoneal fluid was present, suctioning of the fluid was done & sent for analysis.

As and when a specific pathology was diagnosed, appropriate therapeutic surgical procedure was done.

RESULTS

- On laparoscopic examination Abdominal Koch's was diagnosed in 13 patients, with 7 patients having peritoneal seedlings and 6 patients having enlarged mesenteric lymph nodes.
- Of the 11 patients with adhesions, 9 patients had history of previous surgery, 1 patient had history of peritonitis and 1 patient had band of Ladd.
- Of the 7 patients with Chronic Appendicitis, 4 patients had faecolith and 3 patients had long kinked appendix.
- Of the 6 patients with PID, 4 patients had salpingitis and 2 patients had oophoritis.
- Of the 3 patients with Endometriosis, 2 patients had Endometriosis on the Ovary and 1 patient had it on the fundus of the uterus.
- Of the 2 patients with Malignancy, 1 patient had malignancy of the caecum and 1 patient had malignancy of descending colon.
- Of 8 patients, there were NO findings on laparoscopy in 6 patients and 2 patients had enlargement of 2 to 3 mesenteric lymph nodes.

DISCUSSION

Age Distribution: In our study, 34% of the patients were in the age group of 26 to 35 yrs, with a mean age of 41 which is comparable to the study done by Al Akeely in which the mean age of presentation was 39.1 yrs and to the study done by Raymond P.Onders in which the mean age of presentation was 42 yrs.[7,9]

Gender distribution: Out of 50 patients who presented with chronic abdominal pain, 32 patients i.e 64% were females and 18 i.e 36% were males which is comparable to the study done by Prafull K Arya in which there were 67.3% female patients presented with chronic abdominal pain.(10)

Site of Pain: Out of 50 patients, generalized abdominal pain was present in 24 patients (48%). After laparoscopic examination abdominal Koch's was present in 12 patients, adhesions in 7 patients and malignancy in 2 patients. No diagnosis could be established in 3 patients. Pain in the upper abdomen was present in 6 patients (12%) of which abdominal Koch's was present in 2 patients and adhesions (band of Ladd) in 1 patient. No diagnosis could be established in 3 patients with pain in upper abdomen.

Pain in lower abdomen was present in 14 patients and in the right iliac fossa in 6 patients. In patient with pain in lower abdomen, chronic appendicitis was present in 5 patients, PID in 5 patients, adhesions in 2 patients (in operated cases of appendectomy) and 2 patients had endometriosis. In patients who presented with pain in right iliac fossa, chronic appendicitis was present in 2 patients, PID in 1 patient , adhesions in 1 patient who had history of appendectomy, endometriosis in 1 patient who was diagnosed to have ovarian endometriosis and abdominal Koch's in 1 patient.

Total Leucocyte count : Total Leucocyte count was high in 14 patients (28%) of which 6 patients were diagnosed to have abdominal Koch's, 4 patients had PID, 3 patients had chronic appendicitis and 1 patient had malignancy. In the study done by Cengiz et al and Oya et al leucocytosis was present in 40% and 32% of the patients with abdominal Koch's respectively.(18,19)

ESR : ESR was high in 8 patients (16%) of which 5 patients had abdominal Koch's and 3 patients had PID. In the study done by Cengiz et al , ESR was high in 94% of the patients with abdominal Koch's. (18)

Tuberculin Test : Tubeculin test was strongly positive test with an induration of more than 15 mm in 4 patients and they were diagnosed to have abdominal Koch's ($p < 0.05$), 8 patients had a positive tuberculin test with an induration of more than 10 mm but less than 15 mms. These patients had a history of BCG vaccination during their childhood which may be the reason for a positive tuberculin test.(17)

History of previous surgery : In our study out of 50 patients, 9 patients had history of previous surgery of which 3 patients had undergone appendectomy, 2 patients had a history of Cholecystectomy, 2 patients had undergone hysterectomy, 2 patients had undergone laparotomy for duodenal perforation, and in these patients the incidence of adhesions was high ($p < 0.05$) which is comparable to the study done by Gamal I Moussa et al in which the incidence of adhesions was high in patients who had a history of previous surgery. (8)

Laparoscopic findings : On laparoscopic examination Abdominal Koch's was diagnosed in 13 patients, with 7 patients having peritoneal seedling and 6 patients with enlarged mesenteric lymph nodes. Of the 11 patients with adhesions, 9 patients had history of previous surgery, 1 patient had history of peritonitis and 1 patient had band of Ladd. Of the 7 patients with chronic appendicitis, 4 patients had faecolith and 3 patients had a long kinked appendix. Of the 6 patients with PID, 4 patients had salphingits and 2 patients had oophoritis. Of the 3 patients with endometriosis, 2 patients had endometriosis on ovary and 1 had on the fundus of uterus. Of the 2 patients with malignancy, 1 patient had malignancy of the caecum and 1 patient had malignancy of the descending colon. In 8 patient, there were no findings on laparoscopy in 6 patients and 2 patients had enlargement of 2 to 3 mesenteric lymph nodes. These patients were subjected to surgical procedures according to their findings on laparoscopy and the final diagnosis was established after the reports of biopsy, fluid analysis for cytology and microscopy and histopathological examination.

Surgical Procedure : At Laparoscopy, biopsy was taken in 17 patients, adhesiolysis in 11 patients, pelvis fluid for analysis was collected in 9 patients, appendectomy was done in 7 patients and no intervention was required in 6 patients. Biopsy was taken in 17 patients (34%) of which 7 samples were taken of the peritoneal seedings, 9 from the mesenteric node for caecal malignancy. Adhesiolysis was done in 11 patients(22%) of which 6 patients had intraperitoneal adhesions, pelvic adhesions were found in 4 patients and band of Ladd found in 1 patient was excised.

Pelvic fluid for cytology and culture/sensitivity was collected in 9 patients(18%) and appendectomy was done in 7 patients(14%)

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after which it was send for Histopathological examination. No intervention was done in 6 patients. These results are comparable to the study done by Prafull K Arya in which biopsy was taken in 12 patients, adhesiolysis in 10 patients, pelvic fluid for analysis collected in 7 patients and appendectomy was done in 13 patients.(10)

Final Diagnosis : Final diagnosis after reports of Histopathological examination and pelvic fluid analysis was established in 88% of the patients and was inconclusive in 12% of the patients. The most common findings was abdominal koch's which was found in 15 patients i.e in 30% of the patients which is comparable to the study done by Mallik et al in which 82% patients were diagnosed to have abdominal koch's.(16)

Abdominal tuberculosis is a common disease in India, as was seen in our study. Laparoscopy is a useful tool in the diagnosis of abdominal tuberculosis. Common findings in abdominal tuberculosis are peritoneal or visceral tubercles.

The second most common finding was adhesions found in 11 patients i.e 22% of the patients which is comparable to the study done by Prafulla K Arya, adhesions was the second most common finding present in 24% of the patients.(10)

In a study done by Gamal I. Moussa in which adhesions were found in 26.8% of the patients. 9 of them had past history of intra-abdominal operation (post-operative adhesions). In our study of the 11 patients with adhesions 9 patients had history of previous surgery.

In our study chronic appendicitis was found in 7 patients i.e in 14% of the patients which was confirmed by HPE. In a study by Gamal I. Moussa chronic appendicitis was the cause of unexplained chronic abdominal pain in 12.5% patients and all were managed by Laparoscopic appendectomy, complete relief of pain was observed in 5 patients and pain reduction in 2 patients. In our study pain was relieved in 6 patients after appendectomy.(8)

Pelvic inflammatory disease was identified by adhesions in the pelvis and fluid collection in the pouch of douglas and the fluid collected and sent for analysis. In our study PID was found in 9 patients i.e 18% of patients. This is comparable to Gamal I Moussa in which theincidence of PID was 14.2%. Pelvis inflammatory disease is a common cause of chronic abdominal pain in females.(8)

In our study malignancy was found in 2 patients i.e in 4% of patients which is comparable to the study done by Mohammed Hamad Al Akeely in which malignancy was found in 2% of the patients and confirmed o biopsy. (7) Biopsy showed adenocarcinoma of the caecum in 1 case with intermediate lymph node metastasis and adenocarcinoma of the descending colon with mesenteric lymphadenopathy in the other case.

In our study, of the 50 patients examined no specific cause of chronic abdominal pain could be found in 6 patients i.e in 12 % of the patients, which is comparable to the study done by Prafull K Arya in which no cause of chronic abdominal pain was found in 10% of the patients.

Complications: Complications were seen in 3 patients (6%) ($p < 0.05$) in which trocar site bleeding was present in 1 patient, bloating in 1 patient and post operative shoulder pain in 1 patient. This is comparable to the study done by Gamal I Moussa in which the rate of complications was 5.2%.(8)

No patient required conversion to open surgery and thus unnecessary laparotomies were avoided.

Causes of chronic abdominal pain : Surgical cause of pain was found in 35 patients, gynaecological cause in 9 patients and no specific cause of pain could be established in 6 patients. Thus, by diagnostic laparoscopy of chronic abdominal pain could be made in 88% of patients ($p < 0.05$) and only in 12% patients no cause of chronic abdominal pain, with minimal complication rate. This is comparable to the study done by Gamal I Moussa, no specific pathology was found in 14.2% of the patients, which is comparable to our study.(16)

CONCLUSION

To conclude, Diagnostic Laparoscopy is a safe, efficacious, rapid and cost effective means of diagnosing as well as treating the cause of chronic abdominal pain.

The advantage of diagnostic laparoscopy over the non invasive methods is the ability to perform therapeutic procedure at the same time, which may help in the confirmation of the diagnosis or relief of pain.

In our study we had a higher incidence of surgical causes of chronic abdominal pain compared to gynaecological causes owing to the smaller sample size.

Diagnostic laparoscopy in chronic abdominal pain, is a significant examination which increase our understanding of many underlying abdominal disorders. However it should be undertaken only after a complete diagnostic evaluation has been carried out. It permits the effective surgical treatment of many conditions encountered at time of diagnostic laparoscopy.

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