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Role of Diagnostic Laparoscopy in Undiagnosed Pain Abdomen

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Abstract: ***Undiagnosed chronic pain abdomen can be troublesome for the patient so much so that it affects the quality of life of the patient. Even ultrasonography and CT Scans also don't show any pathology despite continuous pain abdomen. In those cases diagnostic laparoscopy is of help to a great extent.***

Keywords: diagnostic laparoscopy in undiagnosed pain abdomen

1. Introduction

Diagnostic laparoscopy is minimally invasive surgical procedure that allows the visual examination of intra abdominal organs in order to detect a pathology despite new radiological techniques like USG, CT Scan, MRI, the diagnosis of acute abdomen can be difficult at times.

History and examination are helpful but at times pose a diagnostic dilemma. Diagnostic laparoscopy is more accurate, panoramic, safe and less invasive than a exploratory laparotomy in a vast majority of cases.

Diagnostic laparoscopy has been embraced by surgeons for diagnosis of wide range of abdominal diseases which has not been diagnosed with non invasive tests.

2. Materials and Methods

In this prospective study a total of 60 patients with undiagnosed or chronic abdominal pain at Surgery and Gynaecological out patient department and Emergency room of Mahatma Gandhi Medical College and Hospital, Jaipur were studied. All these patients were thoroughly interrogated and examined in details. Following investigations were done uniformly in all these patients.

1) Complete blood counts
2) Random Blood sugar, renal function tests, liver function tests.
3) Ultrasound whole abdomen
4) Endoscopy upper / lower GI.

Diagnosis was possible in 24 patients (40%) after routine clinical examination and investigations. The main diagnosis of these patients were Utero adnexal mass, Appendicitis, Pelvic inflammatory disease, renal calculi. Details are shown in table 1. Ultrasonographic Findings

Table 1

USG Findings	*No of cases*
Utero Adnexal	12
Appendicitis	6
Renal calculi	3
Pelvic Inflammatory Disease	3
USG-NAD	36
Total	**60**

All the remaining 36 agreed for an invasive procedure like laparoscopy.

The inclusion and exclusion criteria is shown as following

Inclusion criteria

1) Chronic abdominal pain with normal or inconclusive investigations and clinical examination.

Exclusion criteria

1) Patients undergoing some definitive elective abdominal procedure.
2) Uncorrectable coagulopathy and pregnancy.
3) Age <10 years.

Informed consent was taken from all the patients. Clearance from ethical committee from our institution was also obtained.

Laparoscopic procedure was performed under general anaesthesia. 10mm port used through umbilical port. The secondary ports are inserted under laparoscopic vision.

During Diagnostic laparoscopy:-

A systemic examination of abdomen was performed in following order- left lobe of liver, around the falciform ligament to the right lobe of liver, Gall bladder, Stomach, ascending colon, caecum, appendix, ileocaecal junction and terminal ileum (Meckels diverticulum), transverse colon, sigmoid colon, pelvis, fallopian tubes, round ligament and anterior culde sac, uterus and adnexa.

The abdominal cavity was inspected for fluids, a sample was taken if free fluid was present for laboratory tests for culture and sensitivity, peritoneal lavage and adhesiolyis done to improve the vision.

Appropriate biopsies, cytology, cultures were taken.

1) If no pathology was to be treated with surgical intervention, then completion of diagnostic laparoscopy was done and after removal of instruments and gas, ports were closed.
2) If pathology found and it needed surgical intervention, was dealt with laparoscopy.

3. Results

Patients age varied from 11-60 years, 44 out of 60 were female. In 36 cases (60%) the USG report read NAD(no abnormality detected). However upon entering the peritoneal cavity with laparoscope a different picture was revealed which consisted as shown in Table 2

Table 2: Diagnostic laparoscopy Findings

Diagnostic laparoscopic findings	*No. of cases*
Chronic Appendicitis	26
Acute Appendicitis	6
Tuberculosis	2
Right ovarian cyst with Chronic Appendicitis	2
Total	**36**

Final Diagnosis based on Biopsy and cytobiochemical findings are as follows

Table 3: Final Diagnosis Table

Findings	*No of cases*	*Percentage*
Chronic Appendicitis	26	43%
Acute Appendicitis	6	10%
Ovarian Cyst/ Uterine Fibroid	14	23%
PID	6	10%
Tuberculosis(GI/Genital)	2	2%
Adhesions	6	12%
Total	**60**	**100%**

Biopsy revealed the uteroadnexal pathologies in 14 cases (one dermoid cyst, two mucinous cystadenoma and one intramural fibroid). Also in 2 cases, ovarian cyst was coexistent with appendicitis. In them appendicectomy was done along with ovarian cystectomy.

Culture positive PID were present in 4 cases, the causative organisms included Pseudomonas, E coli and N gonorrhoea. TB of gastrointestinal tract was detected in one case where mesenteric lymphadenitis was also present while TB of genital tract was present in one case and was identified by detecting AFB in fluid aspirate and biopsy.

4. Discussion

Lower abdominal pain has been a challenge to surgeons and gynaecologists. Before the era of therapeutic laparoscopy these patients use to undergo a battery of costly investigations over a period of months while remaining dissatisfied. Main aim of this study was to evaluate the role of laparoscopy as a major diagnostic tool.

Chronic and acute appendicitis was the most common cause of abdominal pain in the present study and results of present study were comparable to those of study by Miller in 1996.

The incidence of Pelvic Inflammatory disease (10%) in the present study is comparable to Al Bareek (2007) and Arya et al 2004) and can be explained due to fact that in the present study majority of patients were female.

The incidence of ovarian cyst as the cause of abdominal pain in the present study was comparable to that Clarke et al (1986) and Shrenk et al (1994).

In present study 2 conversions occurred mainly due to non progression of the surgical dissection as appendix was surrounded by dense adhesions, so it was considered safe to convert to laparotomy.

The diagnostic accuracy of the present study was comparable to that of Onders and Mittendorf (2003), Al Bareeq et al (2007). In present study diagnosis was established using laparoscopy in 60 patients (100%).

So diagnostic laparoscopy is a useful tool for diagnosis, staging and exclusion of cancer. It decreases the number of laparotomies. In many specific conditions it may be more effective investigation than CT scan. In target biopsy under vision, histological diagnosis is possible in all patients. One of the objective of this study was to find less invasive alternative instead of more invasive diagnostic approach like exploratory laparotomy or blind open appendicectomy. During laparoscopy thorough visualisation of peritoneal cavity was done and finally only 2 patients were converted to open, which was needed for effective surgical treatment.

There have been no major procedure related complications. Laparoscopy is invasive procedure is usually performed under general anaesthesia. Few side effects of general anaesthesia like nausea and vomiting. But these are negligible in comparison to experience after laparotomy.

On follow up- majority of these patients have peace of mind. Therefore it can be concluded that laparoscopy is a very safe, quick, cost effective and useful diagnostic tool in undiagnosed lower abdominal pain. Laparoscopy shortens hospital stay and minimizes hospital visits, thus decreasing patient expenses. Laparoscopy should be performed as an early investigation in these patients because diagnosis should precede treatment wherever possible.

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