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## Role of laparoscopy in diagnosing abdominal and pelvic pathologies

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#### Abstract

**Aims & Objectives:** To study the role of laparoscopy in diagnosing the unknown abdominal and pelvic pathologies.

**Methodology:** This is a prospective observational study conducted in the department of surgery at RMMCH for the duration of 2 months.

**Results:** This prospective study consists of 60 patients, in which most of the patients comes under the age group of 11-30 years. Majority of females were affected than male patients about 56.6%. According to the indications for diagnostic laparoscopy, number of patients for abdominal pain for evaluation was 50(83.4%) compared to other indications. More number of patients (13) were diagnosed with Koch's abdomen in regard to other diagnosis made after diagnostic laparoscopy. Most commonly used laparoscopic procedure was Biopsy in 33 patients. Among the patients who reported with diagnosis, in 10 patients pre-operative diagnosis confirmed, in 17 patients diagnosis has changed, in 6 patients no diagnosis could be made, and 27 patients were diagnosed after diagnostic laparoscopy.

**Conclusion:** Laparoscopy is helpful in diagnosing and confirming an unknown case made on clinical and laboratory evaluation. It extensively reduces delay in operative intervention and also reduces morbidity and shortens the post-operative recovery interval. It's a low risk procedure and also provides diagnostic accuracy and therapeutic options.

**Keywords:** Laparoscopy, abdominal pain, ascites, adhesiolysis, staging laparoscopy, biopsy

#### Introduction

Acute abdomen is a condition of various symptoms combined with severe abdominal pain which requires emergency surgery. Acute disease of or injury to the internal organs are risk factors to this condition. Sudden onset of abdominal pain associated with nausea or vomiting are the main presentations of patients in this case. Thorough history and physical examination should be done to approach a patient with acute abdomen. For the management of acute abdomen certain diagnosis and therapy should be undertaken. Efficient diagnostic procedures are used to identify acute abdominal pain.

Diagnostic laparoscopy is a key to solve the dilemma of nonspecific acute abdomen. It's a surgical procedure with a thin viewing tube by which the doctors use to view abdomen by passing through a small cut in the abdominal cavity.

Diagnostic laparoscopy was first introduced in 1901 and its value was proved in 1950s and 1960s. Emergency diagnostic laparoscopy with surgical intervention was proposed in 1990.

Diagnostic laparoscopy is usually done in hospital under general anesthesia. A tube called trocar is inserted into the incision. Carbon dioxide gas passed into the abdomen through tube helps expand the area to make it easy for surgeons for viewing the organs more clearly. A tiny camera is fitted into the trocar to view inside pelvis and abdomen. The gas, laparoscope and instruments are removed after the examination and the cuts are closed.

On or before the day of examination one may need to stop taking medicines including narcotic pain relievers. The incision may be sore afterwards so doctor may prescribe a pain reliever. The gas used may cause shoulder pain and can irritate diaphragm and cause increase urge to urinate. A few hours in the hospital will help to recover.

Rapid and thorough inspection of the abdominal and pelvic cavity which is not possible with the open approach can be obtained through this procedure.

The emergency laparoscopic approach improves the diagnostic accuracy and therapy for patients with acute abdomen and is therefore nowadays recommended and accepted worldwide.

### Methodology

**Study Type:** Prospective Observational study.

**Study Place:** The study was conducted in the department of Surgery, Rajah Muthiah Medical College Hospital, Annamalai University, Annamalai Nagar, Tamil Nadu.

**Study Period:** The study was conducted for a period of two months (Feb 2019-March 2019).

### Study recruitment procedures

- The recruitment of subjects was carried out with the help of physician who has the knowledge of patient's medical history.
- The subjects selected were the patients who were treated as inpatients.
- The study procedure was completely explained to the patients.
- The patients included in the study were selected based on inclusion and exclusion criteria.

### Inclusion Criteria

- Patients who were treated for abdominal and pelvic pains.
- Patients with ascites of unknown etiology were included.
- Patients of both the gender.
- Patients those who were above 11 years of age.

### Exclusion Criteria

- Patients who had hemodynamic instability.
- Patients with multiple adhesions or 3 or more abdominal operations.
- Patients who were unable to tolerate general anesthesia.
- Patients who need emergency care were excluded.

### Study Method

1. The study method involves selection of patients based on the inclusion criteria.
2. Interpretation of results.
3. Conclusion.
4. Report submission.
5. Collected data will be stored in department library for future reference in the form of thesis book.

### Observation and Results

This study consists of total 60 patients to study the role of laparoscopy in diagnosing abdominal and pelvic pathologies.

**Table 1:** Age-Wise distribution.

Age (Years)	No: Of Patients	Percentage
11-20	14	23.3
21-30	14	23.3
31-40	8	13.4
41-50	7	11.6
51-60	8	13.4
>60	9	15
Total	60	100

The age group included in this study was above 11 years, in which most of them were under 11-30 years.

**Table 2:** Gender-Wise distribution.

Gender	No: Of Patients	Percentage
Female	34	56.6
Male	26	43.4

Based on the gender wise distribution, the numbers of female patients were more 56.6% compared to male patients 43.4%.

**Table 3:** Indications for diagnostic laparoscopy.

Indications	No. of Patients	Percentage
Abdominal pain for evaluation	50	83.4
Staging known malignancy	7	11.6
Ascites for evaluation	3	5

In this study, 50(83.4%) had abdominal pain as indication for DL and in 7(11.6%) patients had staging known malignancy and 3(5%) patients had ascites for evaluation.

**Table 4:** Diagnosis made after diagnostic laparoscopy.

Diagnosis	No. of Patients	Percentage
Acute appendicitis	7	11.7
Chronic appendicitis	5	8.3
Koch's abdomen	13	21.7
PID	4	6.7
Malignancy	10	16.7
Adhesions	8	13.3
Appendicular Mass	3	5
Appendicular mass + PUH	2	3.3
Cirrhosis + PUH	3	5
Chocolate cyst of ovary	1	1.7
No definite diagnosis	4	6.7

Among the 60 patients who underwent laparoscopy, 13(21.7%) patients were diagnosed with Koch's abdomen, 10(16.7%) patients with GI malignancy, 8(13.3%) with Adhesions, 7(11.75%) with Acute Appendicitis, 5(8.3%) with Chronic Appendicitis, 4(6.7%) with PID, 3(5%) each with Appendicular mass and Cirrhosis + PUH, 2(3.3%) with Appendicular mass + PUH. In 4(6.7%) patient with no definite diagnosis.

**Table 5:** Laparoscopic procedures performed.

Laparoscopic Procedure	No. Patients
Appendectomy	9
Biopsy	33
Adhesiolysis	6
Bx+ App	2
Adh + App	4
No intervention	6

In this study, laparoscopic procedures performed were Biopsy in 33 patients, appendectomy in 9 patients, adhesiolysis in 6 patients, adhesiolysis along with appendectomy in 4 patients, biopsy along with appendectomy in 2 patients. In 6 patients no intervention was done.

**Table 6:** Effect of diagnostic laparoscopy.

Diagnostic Status	No. of Patients	Percentage
Confirmed	10	16.66
Changed	17	28.33
Failed	6	10
Diagnosis after DL	27	45

In 10 cases, preoperative diagnosis was confirmed based on laparoscopy whereas in 17 cases the diagnosis had changed. In 27 cases in which no preoperative diagnosis was made after laparoscopy. In 6 cases no diagnosis could be made and laparoscopic diagnosis was normal.

### Conclusion

- Laparoscopy is helpful in diagnosing and confirming an unknown case made on clinical and laboratory evaluation.
- It extensively reduces delay in operative intervention and also reduces morbidity and shortens the postoperative recovery period.
- This approach provides diagnostic accuracy and therapeutic options.
- By this approach we can initiate definitive treatment for patients in earlier stages and reduce patients suffering.
- Laparoscopy is a low risk procedure with minimally invasive method that requires only small incisions. And it is safe, less time consuming with lesser morbidity and mortality.
- In females with doubtful appendicitis of tubo-ovarian pathologies it is specifically important.
- It is superior to imaging modalities and helpful in post-laparotomy abdominal pain cases.

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