Original Research Paper

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General Surgery

EVALUATING RIGHT LOWER QUADRANT PAIN THROUGH DIAGNOSTIC LAPAROSCOPY: A PROSPECTIVE OBSERVATIONAL ANALYSIS

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ABSTRACT **Introduction:** Right lower quadrant pain in abdomen is the most common type of acute abdominal pain and often presents a diagnostic challenge to the surgeon. There are numerous differential diagnoses for this symptom which can present in various ways. The systematic use of laparoscopy especially in cases of diagnostic dilemmas is a very valuable tool to arrive at the proper diagnosis as well to plan the treatment. **Objectives:** The aims of this prospective study are to define the role of diagnostic laparoscopy in evaluating right lower abdominal pain and to study the incidence of different conditions causing right lower quadrant pain using diagnostic laparoscopy. **Methodology:** In this prospective study 72 patients with right lower abdominal pain admitted to the Emergency Department and undergone diagnostic laparoscopy were evaluated. **Results:** The abnormal findings noted include appendicitis, adhesions, adnexitis, mesenteric lymphadenitis, meckel's diverticulitis, mesenteric panniculitis, hydrosalpinx and right adnexal cyst. The most common finding is appendicitis (75%). Females (67%) are commonly affected by adhesions. Females with RLQ pain were found to have more number of non gynaecological findings (85%) than gynaecological ones. About 85 percent of the patients with RLQ pain had a benefit of undergoing extended therapeutic and ancillary procedures. **Conclusion:** Laparoscopy provided its diagnostic benefit in ninety one percent of patients, who presented with right lower abdominal pain. It yielded its maximum diagnostic gain in women of child bearing age group. In these patients, the exposure to radiation by subjecting them to unnecessary radiological investigation is minimized. It had a therapeutic role in eighty percent of the patients with right lower quadrant pain.

KEYWORDS : Diagnostic laparoscopy, right lower quadrant pain, appendicitis, adhesions, gynaecological causes

INTRODUCTION

Evolution of surgical instrumentation and technique has resulted in a valuable instrument called laparoscope.

Diagnostic laparoscopy is of tremendous help in a patient with uncertain abdominal pathology. The appropriate implementation of diagnostic laparoscopy often helps to avoid expensive diagnostic studies and more importantly unnecessary laparotomy.

It is indicated if neither laboratory findings nor modern imaging techniques provide a clear diagnosis or if the use of imaging techniques is impossible because of logistic reasons or if the necessary time is not available.

Right lower quadrant pain in abdomen is the most common type of acute abdominal pain and often presents a diagnostic challenge to the surgeon. Patients with right lower quadrant pain often come to medical attention during off hours and hence require an efficient and goal directed diagnostic assessment to receive the necessary treatment as early as possible. The assessment must often be carried out at times when the availability of ancillary testing is limited.

There are numerous differential diagnoses for this symptom which can present in various ways. Acute appendicitis and diseases of female genital tract are the most frequent causes implicated. The systematic use of laparoscopy especially in cases of diagnostic dilemmas is a very valuable tool to arrive at the proper diagnosis as well to plan the treatment.

Methods of Collection of Data

1. **Study Design:** A prospective & observational study
2. **Study Period:** DECEMBER 2022 TO DECEMBER 2023.
3. **Place of Study:** Al-ameen Medical College, Vijayapura
4. **Sample Size:** 72

Inclusion Criteria

1. Patients willing to give informed consent according to annexure 1.
2. All patients who present with rt lower quadrant pain in which laborotorical and radiological examinations are inconclusive

Exclusion Criteria

1. Patients with age less than 18 years.
2. Patients with comorbid diseases like severe IHD, cervical spondylosis with active & severe hematemesis.
3. Immunocompromised.
4. All pregnant women.

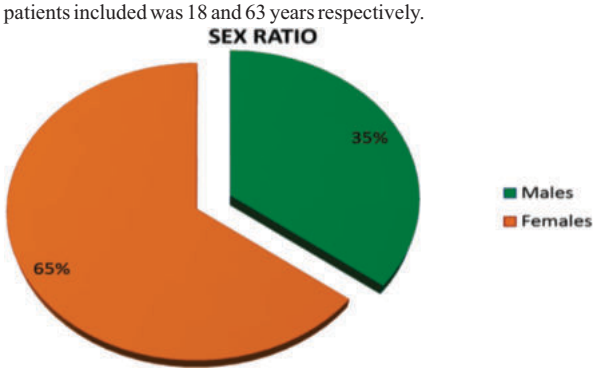
Methodology

1. The patients fulfilling the inclusion criteria will be enrolled for the study after obtaining informed consent.
2. A structured Performa is used to collect information regarding detailed clinical history, examination findings, laboratory investigations .

RESULTS

In this observational study "Diagnostic laparoscopy in the evaluation of right lower abdominal pain" 72 patients were analysed.

There were 28 males and 44 females. Lowest and highest age of the patients included was 18 and 63 years respectively.



Patients with right lower quadrant pain had associated symptoms like nausea, vomiting, fever, anorexia, burning micturition, leucorrhea and constipation. The most common associated symptom was vomiting which was found in 28 patients.

The abnormal findings that were shown by laparoscopy include appendicitis, adhesions, adnexitis, mesenteric lymphadenitis, meckel's diverticulitis, mesenteric panniculitis, hydrosalpinx and right adnexal cyst

The operative findings of these patients were compared with the clinical diagnosis and any discrepancies noted, including the resultant change in management secondary to diagnostic laparoscopy.

The laparoscopic finding of appendicitis was found in 55 patients. Among which 84% of patients had appendicitis alone. The rest 16% of patients had other coexisting findings like adhesions, adnexitis and mesenteric lymphadenitis.

Out of patients with inflamed appendix, 32 were females. Among these 32 females, 24 patients were in the age group of 18 to 25.

12 patients had adhesions involving mesentery and bowel. 6 out of these 12 patients had associated findings like appendicitis, mesenteric panniculitis and adnexal cyst.

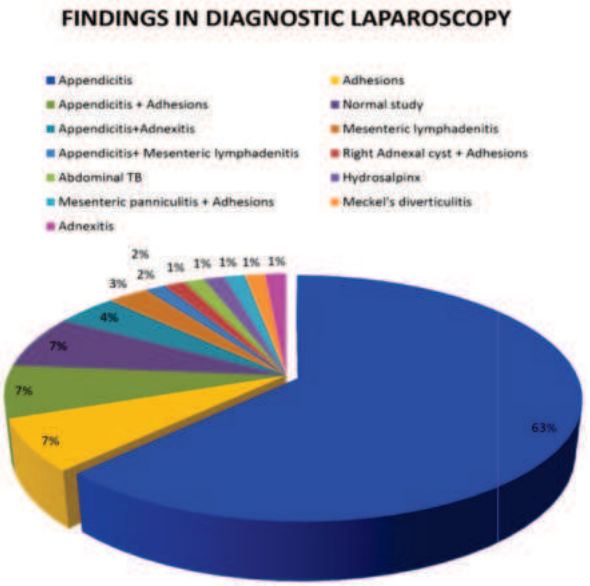
From the data analysed, it is clear that females (67%) were commonly affected by bowel adhesions.

Mesentric lymphadenitis was present in 3 patients with one of them having associated appendicitis.

Other rare laparoscopic findings shown by diagnostic laparoscopy include abdominal tuberculosis, mesenteric panniculitis and meckel's diverticulitis which together constituted less than 5% of the total cases.

Certain gynaecological findings were noted in diagnostic laparoscopy. It includes adnexitis, hydrosalpinx and right adnexal cyst.

Among 44 females in the study, 3 females were post menopausal.



The data shows that 39 out of 41 premenopausal and 2 out of 3 postmenopausal females had an abnormal finding in diagnostic laparoscopy.

Among the females with an abnormal study only 15% were due to gynaecological pathologies. Majority of them had non gynaecological causes like appendicitis and adhesions.

There were 6 patients in whom diagnostic laparoscopy revealed normal study of the visualized organs.

In the study, it was noticed that 63 (87.5%) patients had an advantage of undergoing extended definitive therapeutic or ancillary procedure.

DISCUSSION

72 patients with right lower quadrant pain were studied during the period of December 2022 to December 2023. Females underwent diagnostic laparoscopy more commonly than males for right lower quadrant pain. The reason for increased incidence of right lower quadrant pain in females than males may be due to the additional gynaecological pathologies.

The most common age group affected was 18 to 25 years. This peak can be attributed to prevalence of appendicitis in this age group which is the leading cause of right lower quadrant abdominal pain.

The commonest symptom associated with right lower quadrant pain was vomiting which was found in 38 percent of patients. This is mainly because appendicitis is the most frequent finding noticed and it is usually associated with vomiting.

The single predominant finding noted in laparoscopy which contributed to 75 percent of total findings is appendicitis. Interestingly, among patients with appendicitis, 16 percent had other concomitant pathologies found on laparoscopy, which included mainly adhesions and gynaecological causes like inflamed fallopian tubes. These are possibly due to surrounding inflammation caused by appendicitis. Females are commonly affected by adhesions. This may be due to the fact that females commonly undergo lower abdominal surgeries like caesarian section and sterilization. Females with RLQ pain were found to have more number of non gynaecological findings (85 percent) than gynaecological ones. 9 percent of the patients showed normal study of the visualized organs.

88 percent of the patients with RLQ pain had a benefit of undergoing extended therapeutic and ancillary procedures. The most common procedure done was laparoscopic appendicectomy. Other procedures include laparoscopic adhesiolysis and biopsy for mesenteric lymphadenitis and ileocaecal tuberculosis.

CONCLUSION

In this observational study, we have tried to understand the essentials of laparoscopy and its role in the evaluation of right lower abdominal pain over a period of one year and two months in 72 patients whose other routine investigations like laboratory tests and ultrasonogram abdomen were inconclusive. Laparoscopy provided its diagnostic benefit in ninety one percent of patients, who presented with right lower abdominal pain. Laparoscopy yielded its maximum diagnostic gain in women of child bearing age group. In these patients, the exposure to radiation by subjecting them to unnecessary radiological investigation is minimized. It had therapeutic role in eighty three percent of the patients with RLQ pain.

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