

INCIDENTAL APPENDECTOMY DURING DIAGNOSTIC LAPAROSCOPY PERFORMED TO ASSESS THE CAUSES OF LOWER ABDOMINAL PAIN

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Abstract

Background: Diagnostic laparoscopy is a minimally invasive method for the diagnosis of intra-abdominal diseases by direct inspection of intra-abdominal organs whenever there is a diagnostic dilemma even after routine diagnostic workup. Incidental appendectomy is defined as the removal of a clinically normal appendix during non-appendiceal surgery. The goal of the study is to assess the utility of incidental appendectomy performed during diagnostic laparoscopy in patients with lower abdominal pain when other investigations have failed to produce a diagnosis. It also aims to identify the common causes of intractable abdominal pain. **Materials and Methods:** A prospective, observational, and longitudinal analysis was used in the study. In order to diagnose lower abdomen pain that was unrelenting, 60 individuals underwent diagnostic laparoscopy. In each case, an appendectomy was done in addition to any laparoscopic procedures used to treat the pain's underlying causes, such as adhesiolysis, ovarian cystotomy, etc. According to the pro forma, a thorough history, clinical examination, investigations, and follow-up were recorded for each case. Under general anaesthesia, a diagnostic laparoscopy was carried out through a 12 mm sub-umbilical incision using a 10 mm 30-degree telescope. **Results:** The 60 patients who matched our inclusion criteria underwent open Hasson's technique diagnostic laparoscopy. There were 34 women and 26 men. Right lower quadrant discomfort patients also frequently experienced nausea, vomiting, fever, anorexia, burning urination, leucorrhea, and constipation. There were 15 cases of mesenteric lymphadenopathy. The majority of the time, there were several tiny lymph nodes. The next frequent discovery was adhesions. The small bowel loops and the abdominal wall were the sites of the majority of the weak adhesions. Only one patient out of the seven who had free fluid in POD also had hemorrhagic fluid, which was roughly 10 cc in volume. Serous fluid in the POD was present in roughly 200 cc and 100 cc in two other patients. Each of the four remaining patients had 10–20 cc of mild serous free fluid in their pelvis. **Conclusion:** A diagnostic laparoscopy is a very effective tool for determining the origin of persistent abdominal pain. Despite being an invasive operation, there is little to no discomfort or morbidity related to it.

INTRODUCTION

One of the most frequent surgical operations carried out worldwide is the appendectomy. In cases of acute inflammation, as part of a procedure with linked disease, in cases of chronic pain, or in cases of abnormal appearance after unrelated abdominal or pelvic surgery, the appendix may need to be removed urgently. In an effort to avoid developing appendicitis in the future, a normal appendix has

also been accidentally removed during laparoscopic or laparotomy procedures.^[1,2]

The practise of incidental appendectomy, which was once common in gynaecological surgery, has been discouraged recently. However, laparoscopic surgery has undergone significant technological and procedural advancements over the past ten years, raising the possibility that incidental appendectomy can be carried out in a way that is safe, effective, and economical.^[3,4]

According to the majority of research, laparoscopic appendectomy has less complication, a shorter hospital stay, and less postoperative pain than traditional technique. During diagnostic laparoscopy, incidental appendectomy the removal of an appendix that is macroscopically normal has become more common, particularly in females with ARLQP. In order to prevent recurring acute appendicitis and the necessity for additional hospitalization and surgery, the method became increasingly popular among surgeons.^[5,6]

There are several schools of thought on whether accidental appendectomy should be performed or not while taking in mind the advantages and disadvantages of the procedure, even if diagnostic laparoscopy is now widely accepted as a standard tool to detect the causes of refractory abdominal discomfort.^[7] The goal of the study is to assess the utility of incidental appendectomy performed during diagnostic laparoscopy in patients with lower abdominal pain when other investigations have failed to produce a diagnosis. It also aims to identify the common causes of intractable abdominal pain.

MATERIALS AND METHODS

The prospective analysis conducted for a year is the subject of the current investigation. Patients with lower abdomen pain were admitted to the emergency room and then moved to the general surgery department of the affiliated hospital and medical college. All of the patients that were included had diagnostic laparoscopy and were assessed.

The seasoned researcher created the pre-formed pro forma. The history of the patients was entered into the patient information sheet. Before being included in the study, the patients were informed about it and asked to sign a written informed permission. Prior to the study's launch, the ethical committee was made aware of it and an ethical clearance certificate was obtained.

A prospective, observational, and longitudinal analysis was used in the study. In order to diagnose lower abdomen pain that was unrelenting, 60 individuals underwent diagnostic laparoscopy. In each case, an appendectomy was done in addition to any laparoscopic procedures used to treat the pain's underlying causes, such as adhesiolysis, ovarian cystotomy, etc.

The inclusion and exclusion criteria followed in the study were as follows:

Inclusion Criteria

Patients who presented with right lower quadrant pain but had negative results from other tests (laboratory and USG abdomen), a patient of either gender, Patients who are willing to consent to a diagnostic laparoscopy range in age from 18 to 70.

Exclusion Criteria

Patients experiencing left lower abdominal discomfort and upper abdominal pain together,

patients with trauma-related abdominal pain, Patients who have already been diagnosed with intra-abdominal tumours, children, COPD and heart illness patients, patients whose kidney or ureteric calculi have been diagnosed.

According to the pro forma, a thorough history, clinical examination, investigations, and follow-up were recorded for each case. Under general anaesthesia, a diagnostic laparoscopy was carried out through a 12 mm sub-umbilical incision using a 10 mm 30-degree telescope. In accordance with the requirements and intraoperative results, additional 5 mm functioning ports were implanted.

Two 5mm working ports, one in the left iliac fossa and one in the suprapubic area, were used to accomplish the appendectomy. After surgery, enteral feedings were initiated for the patients within 24 to 48 hours. Stitches were removed after 8 to 10 days and received routine dressings. Following surgery, patients were monitored for a year to assess for any post-operative problems, post-operative discomfort, stumpitis frequency, and any unfavorable incidental appendectomy sequelae.

The collected data was compiled in Microsoft office excel 2010 format. Data was processed using Epi Info statistical software version 7.2. Frequency and proportions were obtained from the collected data.

RESULTS

In this prospective study, 60 patients at Medical College and a nearby hospital with RLQ pain had the use of diagnostic laparoscopy examined. 272 individuals were admitted during the research period with acute RLQ discomfort. Since their investigations had come up empty, 70 people were taken into consideration for a diagnostic laparoscopy.

Ten of the 70 patients were unwilling to undergo an invasive diagnostic technique called a diagnostic laparoscopy. The study was conducted on the 60 patients who were left after they granted their consent for diagnostic laparoscopy. These patients' data were assessed, and the findings were examined. The 60 patients who matched our inclusion criteria underwent open Hasson's technique diagnostic laparoscopy. There were 34 women and 26 men. The patients who were included had an average age of 20 and a maximum age of 65, respectively.

Right lower quadrant discomfort patients also frequently experienced nausea, vomiting, fever, anorexia, burning urination, leucorrhoea, and constipation. Vomiting, which was reported by 34 individuals, was the most typical related symptom aside from abdominal pain. Other than vomiting, anorexia was determined to be the second most prevalent symptom. Fever, nausea, and vomiting were also present simultaneously. The least frequent condition among the patients who were included was diarrhoea.

Appendicitis, adhesions, adnexitis, mesenteric lymphadenitis, meckel's diverticulitis, mesenteric

panniculitis, hydrosalpinx, and a right adnexal cyst are among the aberrant findings revealed by laparoscopy. The clinical diagnosis of these patients' operations was compared with it, and any variations were noted. This included any management adjustments necessary as a result of the diagnostic laparoscopy.

There were 15 cases of mesenteric lymphadenopathy. The majority of the time, there were several tiny lymph nodes. The next frequent discovery was adhesions. The small bowel loops and the abdominal wall were the sites of the majority of the weak adhesions. Only one patient out of the seven who had free fluid in POD also had hemorrhagic fluid, which was roughly 10 cc in

volume. Serous fluid in the POD was present in roughly 200 cc and 100 cc in two other patients. Each of the four remaining patients had 10–20 cc of mild serous free fluid in their pelvis.

Only one patient, out of the four who had ovarian cysts, had a hemorrhagic cyst in the left ovary. The right ovary of three further patients contained cysts. Three patients each had terminal ileitis and colitis, three patients each had a fibroid in the posterior wall of the uterus, and one patient each had a mesenteric cyst. Five instances were classified as non-specific abdominal pain (NSAP) since a diagnostic laparoscopy failed to reveal any particular abnormalities in any of them. The findings are tabulated in Table 1.

Table 1: Distribution of cases according to laparoscopic findings

Laparoscopy finding	No. of cases
Free fluids	14
Ovarian cyst	8
Terminal colitis	6
Uterine fibroid	2
Adhesions	16
PID	2
Mesenteric lymphadenopathy	30
Mesenteric cyst	2

DISCUSSION

The most frequent cause of right lower quadrant abdominal pain (ARLQP) is appendicitis; however, many common and unusual diseases, particularly in women of reproductive age, can mimic acute appendicitis and present a diagnostic challenge. Despite advances in imaging, it may still be challenging to distinguish between gynecologic and nongynecologic causes of abdominal pain, making diagnostic laparoscopy the gold standard for accurate diagnosis and treatment in such a condition. Accurate diagnosis is the cornerstone in avoiding inappropriate treatment.^[8-10]

When standard laboratory and radiographic examinations failed to identify a cause for a patient's chronic stomach pain, a diagnostic laparotomy was the only option available. Due to the surgery's morbidity and risks, the surgeons would only perform this procedure if they believed it to be absolutely necessary. The procedure's disadvantages far outweighed its advantages. As a result, many individuals who experienced abdominal pain went untreated and received empirical treatment. However, laparoscopy has developed into a common procedure used to identify stubborn causes of stomach pain. The benefit of the technique is that there is nearly little morbidity and very little post-operative pain. Additionally, some of the problems identified during laparoscopy may be medically treated there rather than requiring a subsequent surgical treatment.^[11,12]

The most frequently impacted age range was 18 to 25. This surge can be linked to the high incidence of appendicitis, the most common cause of right lower quadrant abdominal pain, in this age range.

Vomiting was the most frequent symptom of right lower quadrant pain, occurring in 38% of patients. This is mainly because appendicitis is the most frequent finding noticed and it is usually associated with vomiting.^[9,13]

Appendicitis was the only significant laparoscopic finding, accounting for 75% of all results. It's interesting to note that 16% of appendicitis patients had additional concurrent diseases identified during laparoscopy, primarily adhesions and gynaecological reasons such irritated fallopian tubes. These may be brought on by the appendicitis-related localised inflammation.^[14] Adhesions frequently afflict females. This might be because females frequently have lower abdominal procedures like Caesarean sections and sterilisations. Over the course of a year's follow-up, no significant problems from the inadvertent appendectomy were found. All of the patients experienced adequate pain reduction.^[15]

CONCLUSION

A diagnostic laparoscopy is a very effective tool for determining the origin of persistent abdominal pain. Despite being an invasive operation, there is little to no discomfort or morbidity related to it. One of the additional benefits is that, if necessary, the operation can be converted to a therapeutic one in the same location; nevertheless, compared to open surgeries, it requires superior surgical skills and a longer learning curve.

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