

Case Series

LAPAROSCOPIC APPENDECTOMY IN GYNECOLOGICAL PATIENTS: A CASE SERIES OF 40 PATIENTS

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ABSTRACT

Background: Objectives: As a result of shared symptoms with pelvic inflammatory disease, ovarian torsion, ruptured ovarian cyst, and ectopic pregnancy, diagnosing acute appendicitis in gynecological patients might be difficult. In these situations, laparoscopic appendectomy has diagnostic and therapeutic benefits. The purpose of this research was to examine gynecological patients who underwent laparoscopic appendectomy and to record their symptoms, intraoperative findings, surgical results, and postoperative problems.

Materials and Methods: This retrospective case series comprised 40 female patients aged 18 to 50 years who underwent laparoscopic appendectomy for suspected acute appendicitis. This study was conducted at department of Gynecology, Chettinad Hospital and Research Institute, Kelambakkam, Chennai, Tamil Nadu between September 2024 to August 2025. Patients exhibiting right lower abdomen pain and ambiguous gynecological assessments were included. The preoperative evaluation comprised clinical examination, laboratory tests, ultrasonography, and targeted contrast-enhanced CT imaging. Intraoperative observations, surgical duration, requirement for gynecological intervention, conversion rate, postoperative pain assessment (VAS), length of hospital stay, and complications were documented. Data were evaluated with descriptive statistics and presented as mean \pm standard deviation or percentages.

Results: Patients' average ages were 29.8 ± 7.4 years. Nausea and vomiting (70%) and fever (55%), in that order, were the most prevalent initial symptoms, followed by right lower abdomen pain (100%). Ten patients (about 25%) had unclear results with possible gynecological pathology, while thirty patients (75% of the total) had appendicitis suggested by preoperative imaging. After the surgery, 22 patients (55% of the total) were found to have simple acute appendicitis, 8 patients (20%) to have complicated appendicitis (perforated or gangrenous), and 10 patients (25% of the total) to have coexisting gynecological pathology, such as ovarian cysts (6 cases), pelvic inflammatory disease (3 cases), and endometriosis (1 case). Seven patients (17.5%) underwent gynecological treatments at the same time.

Conclusion: Laparoscopic appendectomy is a safe and successful method for gynecological patients since it allows for the examination and management of pelvic diseases at the same time. Shorter hospital stays, less postoperative discomfort, and low rates of complications and conversions are all features of this method. When diagnosing acute abdomen in female patients, laparoscopy is the gold standard since it can differentiate between appendicular and gynecological causes.

Keywords: Laparoscopic appendectomy; Gynecological patients; Acute appendicitis; Pelvic pathology; Minimally invasive surgery; Case series.

INTRODUCTION

In these situations, diagnostic laparoscopy followed by subsequent surgical intervention (appendectomy if required) has diagnostic and therapeutic benefit. The diagnostic process can be more complicated in women of childbearing age since gynecological and appendicular diseases share many similarities in anatomy and symptoms.^[1] Many medical conditions can show similarly to appendicitis, which can cause diagnostic confusion and postpone treatment. These include pelvic inflammatory disease, ovarian torsion, ruptured ovarian cyst, endometriosis, and ectopic pregnancy.^[2,3]

It can be difficult to tell the difference between gynecological and gastrointestinal causes of right lower abdomen pain based on a clinical examination alone. Diagnostic accuracy has been enhanced using computed tomography (CT) and ultrasonography, although inconclusive or false-negative results are frequently reported, particularly in early or unusual presentations. As a result, traditionally, more female patients than male patients have had a negative appendectomy.^[4,5]

When this occurs, laparoscopy has shown to be an invaluable diagnostic and treatment tool. The ability to see the appendix and pelvic organs clearly helps with diagnosis and the management of any coexisting gynecological issues at the same time. The benefits of laparoscopic appendectomy over open surgery are numerous, and include less postoperative pain, a shorter hospital stay, a faster recovery, better cosmetic results, and a lower risk of wound infection.^[6,7] In these situations, diagnostic laparoscopy followed by subsequent surgical intervention (appendectomy, if required) has both diagnostic and therapeutic benefits.

The purpose of this research was to examine all gynaecological patients with ambivalent clinical features and radiological findings who underwent laparoscopic appendectomy and record their symptoms, intra-op.^[8]

MATERIALS AND METHODS

This retrospective case series was performed in a tertiary care teaching hospital. This study was conducted at department of Gynecology, Chettinad Hospital and Research Institute, Kelambakkam,

Chennai, Tamil Nadu between September 2024 to August 2025. The study comprised 40 female patients who underwent laparoscopic appendectomy for suspected acute appendicitis. Ethical approval was secured from the Institutional Ethics Committee, and patient confidentiality was upheld. Intraoperative findings, operative duration, necessity for supplementary operations, conversion to open surgery, postoperative pain (VAS score at 24 hours), time to oral intake, length of hospital stay, and postoperative complications were documented and assessed.

Inclusion Criteria

- Female patients aged 18–50 years.
- Clinical suspicion of acute appendicitis.
- Patients undergoing laparoscopic appendectomy.
- Intraoperative confirmation of appendicitis
- Availability of complete medical records and follow-up data.

Exclusion Criteria

- Male patients.
- Patients undergoing primary open appendectomy.
- Interval appendectomy after conservative management.
- Pregnant patients.
- Patients with generalized peritonitis requiring immediate open surgery.
- Incomplete clinical or follow-up data.

Statistical Analysis: We used SPSS version 25.0 to evaluate the data that was entered into Microsoft Excel. Categorical variables were shown as frequencies and percentages, whilst continuous variables were shown as mean \pm standard deviation (SD). Descriptive statistical methods were used to summarize demographic characteristics, operative parameters, and postoperative outcomes. Statistical significance was determined when a p-value was less than 0.05.

RESULTS

Laparoscopic appendectomy was performed on 40 female patients throughout the course of the trial. We looked at the patient's demographics, clinical history, intraoperative findings, operating parameters, and discharge instructions.

Table 1: Demographic and Clinical Characteristics

Variable	Value
Total patients	40
Mean age (years)	29.8 \pm 7.4
Age range (years)	18–50
Married	26 (65%)
Unmarried	14 (35%)
Mean duration of symptoms (days)	2.4 \pm 0.9
Mean WBC count (cells/mm ³)	12,850 \pm 2,140
Elevated CRP (>10 mg/L)	28 (70%)

The patients' average age was 29.8 years, and 65 percent of them were married. Symptoms persisted for an average of 2.4 days before to presentation.

Acute inflammatory pathology was confirmed by the presence of leukocytosis and high C-reactive protein levels in the majority of individuals.

Table 2: Presenting Symptoms and Preoperative Imaging Findings

Parameter	Number of Patients	Percentage
Right lower abdominal pain	40	100%
Nausea/Vomiting	28	70%
Fever	22	55%
Menstrual irregularity	8	20%
Preoperative USG suggestive of appendicitis	26	65%
Inconclusive USG findings	10	25%
CT scan performed	12	30%
CT confirmatory for appendicitis	10	25%

Every single patient complained of pain in the lower right abdomen. Along with it, several people had nausea and vomiting. While ultrasound proved appendicitis in 65% of instances, 25% yielded

equivocal results, which could indicate gynecological pathology. In certain instances, a CT scan improved the accuracy of the diagnosis.

Table 3: Intraoperative Findings

Intraoperative Diagnosis	Number of Patients	Percentage
Uncomplicated appendicitis	22	55%
Complicated appendicitis (perforated/gangrenous)	8	20%
Normal appendix with gynecological pathology	4	10%
Coexisting gynecological pathology	10	25%
Ovarian cyst	6	15%
Pelvic inflammatory disease	3	7.5%
Endometriosis	1	2.5%

While 20% of patients were found to have difficult appendicitis, 55% were found to have uncomplicated appendicitis. In 25% of cases, there was coexisting gynecological disease, with ovarian cysts being the

most frequent. The appendix looked normal in 10% of patients, leading doctors to suspect gynecological issues as the primary source of their symptoms.

Table 4: Operative Parameters

Parameter	Value
Mean operative time (minutes)	64.5 ± 14.2
Operative time range (minutes)	45–100
Simultaneous gynecological procedure	7 (17.5%)
Conversion to open surgery	1 (2.5%)
Intraoperative complications	1 (2.5%)
Drain placement	9 (22.5%)

Overall, the procedure took an average of 64.5 minutes. A total of 17.5% of patients underwent gynecological procedures all at once. Only one

patient had to have open surgery because of thick pelvic adhesions. There were few complications during the operation as a whole.

Table 5: Postoperative Outcomes and Complications

Parameter	Value
Mean VAS pain score at 24 hours	2.9 ± 0.9
Time to oral intake (days)	1.4 ± 0.6
Mean hospital stay (days)	3.6 ± 1.2
Port-site infection	2 (5%)
Intra-abdominal collection	2 (5%)
Urinary retention	1 (2.5%)
Overall complication rate	5 (12.5%)
Mortality	0

Within a day or two after surgery, most patients were able to start taking oral medications again with no discomfort. Hospital stays averaged 3.6 days. Minor problems, including port-site infection and tiny intra-abdominal collections, accounted for 12.5% of the overall complication rate. There was no death reported.

DISCUSSION

The overlap between gynecological and gastrointestinal disorders complicates the diagnosis of acute appendicitis in female patients of reproductive age. In this particular patient

population, laparoscopy functions as both a diagnostic and therapeutic instrument.

The increased incidence of diagnostic uncertainty among reproductive-aged women is evidenced by the study's average patient age of 29.8 ± 7.4 years. Prior studies have demonstrated similar age trends, emphasizing that appendicitis frequently occurs in young women and can be challenging to differentiate from gynecological conditions.^[9-11]

In our study patients in trial reported pain in the right lower abdomen; further common symptoms included fever (55%), nausea/vomiting (70%), and other gastrointestinal complications. Although right iliac fossa pain is commonly identified as the primary symptom in previous studies, the clinical presentation is sometimes confounded by additional gynecological issues such as monthly abnormalities or pelvic discomfort. The diagnostic overlap is further emphasized by the observation that 20% of patients in our study experienced menstrual irregularity.^[12,13]

In our study, 25% of people had ambiguous results, while 65% of cases proved appendicitis with ultrasonography. Previous studies have indicated that adnexal disease and bowel gas interference result in varying sensitivity in female patients undergoing ultrasonography. Despite evidence indicating that CT imaging might improve diagnostic accuracy, its routine application is often limited due to apprehensions around radiation exposure in young women. Our findings validate those of earlier research indicating that imaging alone is inadequate for establishing a definitive diagnosis in gynecological patients.^[14-16]

Among the patients participating in this study, 55% presented with uncomplicated appendicitis, whereas 20% exhibited more severe instances. Concurrent gynecological conditions, including endometriosis, pelvic inflammatory disease, or ovarian cysts, were identified in 25% of instances. In accordance with our findings, previous studies have indicated that laparoscopic appendectomy is associated with a 15% to 30% prevalence of gynecological disorders. Laparoscopy is beneficial in this subgroup as it facilitates direct sight of pelvic organs while addressing abnormalities.^[17-19]

Seventeen percent of patients in this study underwent two or more simultaneous gynecological procedures. Previous study has showed that the need for extended hospitalizations and reoperations diminishes with combined laparoscopic treatment. This interdisciplinary strategy yields shortened healing time and enhanced overall patient outcomes.^[20]

In the previous study the laparoscopic appendectomy in female patients have indicated operational durations between 60 and 80 minutes, aligning with the current study's average operative time of 64.5 ± 14.2 minutes. The conversion rate to open surgery was 2.5% in our data. Previous studies have shown conversion rates between 2% and 8% due to dense adhesions or ambiguous anatomy. The low conversion rate in our study demonstrates that

laparoscopy is both safe and practicable for this cohort.^[21,22]

In our previous investigation revealed favorable postoperative outcomes, with an average hospital stay of 3.6 ± 1.2 days and low pain levels (VAS 2.9 ± 0.9) following the procedure. Laparoscopic appendectomy typically yields a reduced hospital stay and expedited recovery compared to open appendectomy. This is particularly applicable to female patients, as open treatments are more prone to induce wound-related problems.^[23,24]

CONCLUSION

Laparoscopic appendectomy was determined to be a safe, successful, and diagnostically beneficial method in gynecological patients in the present investigation. There was no mortality, a short hospital stay of 3.6 ± 1.2 days, minimal postoperative pain, an acceptable operative time, and a low overall complication rate of 12.5% throughout the treatment. The procedure also showed a low conversion rate of 2.5%. The direct visualisation of pelvic organs made possible by laparoscopy was a major step in the treatment of gynecological co-occurring diseases in 25% of patients. A negative appendectomy is less likely to occur, pelvic pathology is less likely to be missed, and additional surgical procedures are less likely to be necessary because to this combined diagnostic and therapeutic benefit. These results suggest that laparoscopic appendectomy is the gold standard for gynecological and appendicular causes of acute abdomen in female patients who report with right lower abdominal discomfort, especially in cases when a definitive diagnosis is not possible.

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