



Original Article

A Prospective Comparative Study of Interval Appendicectomy Vs Conservative Management with Follow-Up in Appendiceal Mass

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ABSTRACT

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Background: Appendicular mass is a well-recognised complication of acute appendicitis, and its optimal management remains controversial. While conservative treatment is widely accepted, the necessity of routine interval appendicectomy after successful non-operative management is debated.

Aim: To compare the outcomes of interval appendicectomy versus conservative management with follow-up in patients presenting with appendicular mass.

Materials and Methods: This prospective comparative study was conducted at a tertiary care teaching hospital over a period of one year (July 2024–July 2025). A total of 100 adult patients diagnosed clinically and radiologically with appendicular mass were included. Patients were divided into two groups: Group A (n=50) underwent interval appendicectomy following initial conservative management, and Group B (n=50) received conservative management with follow-up only. Patients were followed for 12 months. Outcomes assessed included recurrence of appendicitis, need for surgical intervention, complications, and duration of hospital stay. Statistical analysis was performed using Chi-square and Student's *t* tests, with $p < 0.05$ considered significant.

Results: Initial conservative management was successful in 90% of patients in Group A and 88% in Group B. No recurrence was observed in Group A, whereas 14% of patients in Group B developed recurrent appendicitis during follow-up, with 10% requiring surgery. Complication rates were low and comparable between the groups. Total hospital stay was slightly longer in the interval appendicectomy group. The total

Conclusion: Conservative management of appendicular mass is safe and effective in most patients. Routine interval appendicectomy eliminates recurrence but may not be necessary for all cases. A selective approach with careful follow-up is recommended.

Keywords: Appendicular mass; Interval appendicectomy; Conservative management; Recurrence; Appendicitis; Follow-up.

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INTRODUCTION

Acute appendicitis is one of the most common surgical emergencies encountered in general surgical practice. In a proportion of patients, delayed presentation or progression of inflammation results in the formation of an appendicular mass, which is a localised inflammatory phlegmon consisting of the appendix, omentum, and adjacent bowel loops. The reported incidence of appendicular mass ranges from 2% to 6% of all cases of acute appendicitis and represents a significant management dilemma for surgeons (1,2).

The conventional management of appendicular mass has been conservative, commonly referred to as the Ochsner–Sherren regimen. This includes bowel rest, intravenous fluids, broad-spectrum antibiotics, analgesics, and close clinical observation. The rationale behind this approach is to allow the inflammatory process to resolve and to avoid the increased risk of complications associated with emergency surgery in an inflamed and distorted operative field. Several studies have demonstrated success rates of conservative management ranging between 80% and 90% (3,4).

Following successful conservative treatment, the necessity of routine interval appendicectomy remains controversial. Advocates of interval appendicectomy suggest that it prevents recurrence of appendicitis, eliminates the possibility of missed appendiceal pathology, including neoplasms, and provides definitive treatment (5,6). However, opponents argue that interval appendicectomy exposes many patients to unnecessary surgery, additional hospitalisation, and operative morbidity, especially when recurrence rates after conservative management are relatively low (7,8).

Recent literature supports a more selective approach, recommending interval appendicectomy only in patients who develop recurrent symptoms during follow-up. Reported recurrence rates after conservative management vary from 5% to 20%, with most recurrences occurring within the first year of initial presentation (9,10). Improvements in diagnostic imaging, antibiotic therapy, and minimally invasive surgical techniques have further influenced the evolving management strategies for appendicular mass.

Despite numerous studies, there is still no clear consensus regarding the optimal management of appendicular mass in adult patients. Differences in recurrence rates, complication profiles, and healthcare costs highlight the need for further prospective comparative studies. The present study was therefore undertaken to compare the outcomes of interval appendicectomy versus conservative management with follow-up in patients presenting with appendicular mass.

MATERIALS AND METHODS

Study Design

This was a prospective comparative study conducted to evaluate the outcomes of interval appendicectomy versus conservative management with follow-up in patients presenting with appendicular mass.

Study Setting and Duration

The study was carried out at a tertiary care teaching hospital. The study duration was 1 year, from July 2024 to July 2025.

Sample Size

A total of 100 patients diagnosed with appendicular mass were included in the study.

Study Population

Patients presenting with clinical and radiological features suggestive of appendicular mass were enrolled after obtaining informed consent.

Inclusion Criteria

- Patients aged ≥ 18 years
- Clinically and radiologically diagnosed cases of appendicular mass
- Hemodynamically stable patients
- Patients willing to participate and comply with follow-up

Exclusion Criteria

- Patients with generalised peritonitis
- Appendicular abscess requiring immediate drainage
- Suspected or confirmed malignancy
- Immunocompromised patients
- Pregnant women
- Patients are unwilling to follow up

Group Allocation

Patients were divided into two groups of 50 each:

- **Group A (Interval Appendicectomy Group):**
Patients were initially managed conservatively and later underwent elective interval appendicectomy after 6–8 weeks of resolution of the appendicular mass.
- **Group B (Conservative Management with Follow-up Group):**
Patients were managed conservatively and kept on regular follow-up without routine interval appendicectomy.

Conservative Management Protocol

Conservative treatment included:

- Nil per oral initially
- Intravenous fluids
- Broad-spectrum intravenous antibiotics
- Analgesics and antipyretics
- Close clinical monitoring

Patients showing clinical improvement were gradually started on an oral diet and discharged with oral antibiotics as required.

Surgical Procedure

Interval appendicectomy was performed under general anaesthesia using an open or laparoscopic approach, depending on the surgeon's preference and the patient's condition.

Follow-up

All patients were followed up at 1 month, 3 months, 6 months, and 12 months. Follow-up assessment included:

- Recurrence of symptoms
- Complications
- Need for emergency surgery
- Duration of hospital stay
- Morbidity and mortality

Outcome Measures

Primary outcomes:

- Recurrence rate of appendicitis
- Need for surgical intervention

Secondary outcomes:

- Complication rates
- Length of hospital stay
- Treatment-related morbidity

Statistical Analysis

Data were entered into Microsoft Excel and analysed using appropriate statistical software. Continuous variables were expressed as mean \pm standard deviation, and categorical variables as percentages. Comparison between groups was performed using the Chi-square test for categorical variables and Student's t-test for continuous variables. A *p*-value of <0.05 was considered statistically significant.

RESULTS AND OBSERVATIONS

A total of 100 patients with a clinical and radiological diagnosis of appendicular mass were prospectively studied. Patients were allocated into two groups: Group A (Interval Appendicectomy) and Group B (Conservative Management with Follow-up), each comprising 50 patients. All patients were followed for 12 months.

Table 1: Age Distribution of Patients

Age group (years)	Group A (n=50)	Group B (n=50)	Total (n=100)
18–30	21 (42%)	22 (44%)	43 (43%)
31–45	18 (36%)	17 (34%)	35 (35%)
>45	11 (22%)	11 (22%)	22 (22%)

The majority of patients were in the 18–45-year age group.

Table 2: Sex Distribution

Sex	Group A	Group B	Total
Male	30 (60%)	29 (58%)	59 (59%)
Female	20 (40%)	21 (42%)	41 (41%)

Table 3: Clinical Presentation

Symptom	Group A	Group B	Total
Right iliac fossa pain	50 (100%)	50 (100%)	100 (100%)
Fever	34 (68%)	32 (64%)	66 (66%)
Vomiting	26 (52%)	24 (48%)	50 (50%)
Anorexia	29 (58%)	27 (54%)	56 (56%)
Palpable mass	50 (100%)	50 (100%)	100 (100%)

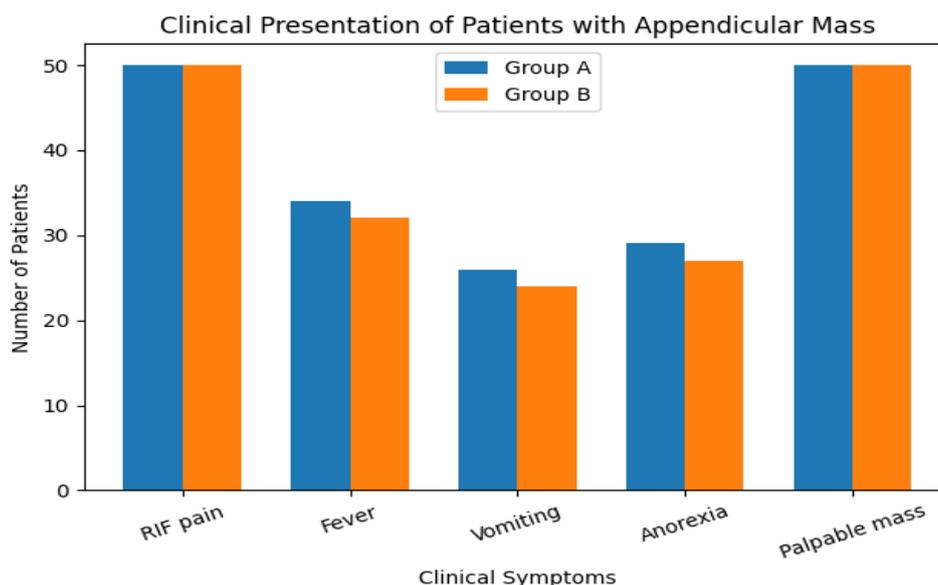


Figure 1 Clinical Presentation of Patients with Appendicular Mass

Table 4: Outcome of Initial Conservative Management

Outcome	Group A	Group B
Successful resolution	45 (90%)	44 (88%)
Failure requiring emergency surgery	5 (10%)	6 (12%)

Failure of conservative treatment occurred during initial hospital admission.

Table 5: Surgical Intervention Details

Parameter	Group A	Group B
Interval appendicectomy performed	45 (90%)	—
Emergency appendicectomy	5 (10%)	6 (12%)
Laparoscopic approach	28 (62%)	3 (50%)
Open approach	17 (38%)	3 (50%)

Table 6: Recurrence During Follow-up

Parameter	Group A	Group B
Recurrent appendicitis	0	7 (14%)
Time to recurrence (mean)	—	5.6 ± 2.1 months
Required surgery for recurrence	—	5 (10%)

Recurrence was observed only in the group that received conservative management.

Table 7: Complications

Complication	Group A	Group B
Surgical site infection	4 (8%)	2 (4%)
Intra-abdominal abscess	1 (2%)	2 (4%)
Adhesive intestinal obstruction	0	1 (2%)
No complications	45 (90%)	45 (90%)

Table 8: Duration of Hospital Stay

Parameter	Group A	Group B
Mean initial stay (days)	6.3 ± 1.4	5.7 ± 1.2
Total hospital stay, including readmissions (days)	8.8 ± 2.2	7.2 ± 2.0

DISCUSSION

The management of appendicular mass continues to be a subject of debate, particularly regarding the necessity of routine interval appendicectomy after successful conservative treatment. The present prospective comparative study evaluated and compared the outcomes of interval appendicectomy and conservative management with follow-up in adult patients presenting with appendicular mass.

In the present study, the majority of patients belonged to the 18–45-year age group, with a male predominance. These findings are consistent with previously published studies, which report a higher incidence of appendicular mass in young

adults and males (1,2). Right iliac fossa pain was the universal presenting symptom, while fever and vomiting were observed in a significant proportion of patients, comparable to observations by Meshikhes and others (3).

Initial conservative management was successful in 90% of patients in the interval appendicectomy group and 88% in the conservative follow-up group. These results are in agreement with earlier studies reporting success rates of 80–90% for conservative treatment of appendicular mass (4,5). Failure of conservative management requiring emergency surgery occurred in a small subset of patients in both groups, usually during the initial hospital admission, supporting the safety and effectiveness of conservative therapy in hemodynamically stable patients.

A major point of comparison in this study was the recurrence of appendicitis. No recurrence was observed in patients who underwent interval appendicectomy, whereas 14% of patients managed conservatively developed recurrent appendicitis during follow-up, with most recurrences occurring within the first six months. Similar recurrence rates ranging from 10% to 20% have been reported in the literature (6,7). Although recurrence was not universal, a significant proportion of patients required subsequent emergency surgery, highlighting the potential benefit of interval appendicectomy in preventing recurrence.

Complication rates were low and comparable in both groups. Surgical site infection was the most common complication in the interval appendicectomy group, while intra-abdominal abscess and adhesive intestinal obstruction were infrequent. These findings are consistent with studies showing that interval appendicectomy is associated with low morbidity when performed after resolution of inflammation (8). Importantly, the majority of patients in both groups remained free of complications, emphasising the overall safety of both management strategies.

The total hospital stay, including readmissions, was slightly longer in the interval appendicectomy group compared to the conservative follow-up group. This finding aligns with previous reports suggesting that routine interval appendicectomy may increase hospital stay and healthcare costs without benefiting all patients (9). However, patients in the conservative group who developed recurrence often required emergency surgery, which may negate the initial advantage of shorter hospitalisation.

Recent evidence has increasingly supported a selective approach to interval appendicectomy, recommending surgery only in patients with recurrent symptoms or those at high risk of recurrence (10). The findings of the present study support this evolving concept, as the majority of patients managed conservatively did not experience recurrence during follow-up. Nevertheless, the risk of recurrence and the need for emergency surgery in a subset of patients cannot be overlooked.

Overall, this study demonstrates that conservative management of appendicular mass is effective and safe in most patients, while interval appendicectomy effectively eliminates the risk of recurrence at the cost of additional surgery and hospital stay. Individualised decision-making, considering patient preference, risk of recurrence, and available resources, appears to be the most rational approach.

CONCLUSION

Conservative management of appendicular mass is safe and effective in most adult patients. Routine interval appendicectomy prevents recurrence but results in additional surgery and a longer hospital stay. A selective approach with careful follow-up and surgery reserved for recurrent cases is a rational and effective management strategy.

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