



ROLE OF INTERVAL APPENDICECTOMY IN CONSERVATIVELY MANAGED APPENDICULAR MASS

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ABSTRACT **Objective:** To study the role of interval appendicectomy in patients diagnosed with appendicular mass managed conservatively **Methods:** A prospective observational study at Navodaya Medical College, Raichur, included 50 patients with radiologically confirmed appendicular mass. Group A (n=25) was managed conservatively using the Ochsner-Sherren regimen. Group B (n=25) underwent interval appendicectomy after 6–8 weeks. Outcomes evaluated included recurrence, complications, hospital stay, and histopathological findings. **Results:** Recurrence occurred in 12% (Group A) and 16% (Group B on HPE). Major complications like adhesive obstruction (20%), enterocutaneous fistula (16%), and sepsis (20%) occurred in Group B. Mean hospital stay was 3.54 days (Group A) vs. 5.43 days (Group B). **Conclusion :** Conservative management with follow-up is safer and more effective than routine interval appendicectomy due to lower morbidity and comparable recurrence rates.

KEYWORDS : Appendiceal mass, Ochsner-Sherren, Interval Appendicectomy, Conservative Management

INTRODUCTION

¹ Acute appendicitis is the most common surgical emergency worldwide, with a lifetime risk of 7–8% . One of its potential complications is the formation of an ^{2,3}appendiceal mass —seen in 2–6% of cases —where an inflamed or perforated appendix is surrounded by adjacent tissues like the cecum, ileum, and notably, the greater omentum. This creates a localized phlegmon or abscess, which helps contain the infection and prevents diffuse peritonitis. Appendiceal mass is more common in elderly males and typically presents with delayed or atypical symptoms.

Its composition varies with the severity and duration of inflammation, appearing either as a solid inflammatory phlegmon or a pus-filled abscess. Imaging with ultrasonography or contrast-enhanced CT (CECT) aids in confirming the diagnosis and excluding other conditions such as ileocecal tuberculosis or cecal malignancy.

⁴Over the decades, the optimal management of appendiceal mass has remained a topic of considerable debate among surgeons. Three main treatment strategies have emerged and are currently practiced globally:

1. Immediate appendicectomy during the acute phase, regardless of mass formation.
2. Conservative (non-operative) management, followed by interval appendicectomy typically after 6–8 weeks once the mass resolves.
3. Exclusive conservative management without interval appendicectomy, with long-term follow-up.

⁵The Ochsner-Sherren regimen forms the cornerstone of conservative treatment and includes hospital admission, bowel rest, intravenous hydration, broad-spectrum intravenous antibiotics, and image-guided percutaneous drainage of any associated abscess. The goal is to allow resolution of inflammation and avoid the risks of immediate surgery in a hostile, inflamed operative field.

Traditionally, following successful conservative management, an interval appendicectomy (IA)⁶ is advised to prevent potential recurrence of appendicitis and to identify rare underlying pathologies such as carcinoid tumors, mucocoeles, Crohn's disease, or appendiceal

neoplasms. Advocates of interval appendectomy argue that up to 20% of conservatively treated cases may recur, and that surgical removal after inflammation has subsided allows safer dissection and better identification of occult malignancies.

However, the necessity of routine interval appendectomy has been increasingly challenged in recent years. Emerging studies suggest that the rate of recurrence after conservative management alone may be relatively low (6–20%), and even when recurrence does occur, it tends to have a milder clinical course. These findings have led to a shift in practice towards selective rather than routine use of interval appendectomy. Moreover, interval surgery, though elective, is not without risks—it may lead to wound infection, intra-abdominal sepsis, adhesive small bowel obstruction, and unnecessary removal of a normal appendix.

On the other hand, immediate appendicectomy during the phase of mass formation is associated with a high complication rate—up to 36%, including iatrogenic bowel injury, fistula formation, incomplete removal due to difficult anatomy, and even inadvertent right hemicolectomy in cases of misdiagnosed malignancy. For this reason, immediate surgery is now largely reserved for cases that fail to respond to conservative measures, or where imaging suggests a high likelihood of underlying malignancy or generalized peritonitis.

Given the lack of consensus, the optimal approach to appendiceal mass remains unclear. This has prompted many researchers to conduct prospective and retrospective studies comparing outcomes between conservative-only management and conservative management followed by interval appendicectomy. Yet, despite an increasing body of literature, the decision-making is often influenced by local protocols, surgeon preference, and patient-specific factors such as age, comorbidities, and response to initial treatment.

In light of this ongoing controversy, we undertook a prospective observational study to compare the outcomes of patients diagnosed with appendiceal mass who were managed conservatively alone versus those who underwent interval appendicectomy after initial non-

operative treatment. Our objectives were to evaluate the necessity, benefits, and risks associated with interval appendectomy, particularly in the context of hospital stay, complications, and histopathological findings. This study aims to contribute to the evidence base guiding rational, cost-effective, and patient-centered management of appendiceal mass

MATERIALS AND METHODS

All patients diagnosed with appendicular mass in the Department of General Surgery at Navodaya Medical College were included in this prospective observational study during the period of July 2023 to December 2024.

Inclusion Criteria

1. All patients with clinical findings & investigation reporting in favour of appendiceal mass were included
2. All age group from 5 to 70 years
3. Non pregnant females
4. Patients willing for follow up
5. Patients voluntarily consenting for the study

Exclusion Criteria

1. Patients of age less than 5 years of age & more than 70 years
2. Pregnant females
3. Patients not consenting for the study
4. Patients with generalised peritonitis.
5. Patients with other masses of the abdominal wall, urological or gynaecological origin

As per institutional protocol, data was collected using a pre-made questionnaire on the day of admission which included demographics, complete history, general physical examination, comorbidities and drug history. Patients were diagnosed with appendicular mass based on clinical evaluation, appropriate investigations and imaging studies. Patients were allocated in two groups namely group A or group B randomly using randomization tables.

Initially all patients were treated conservatively as by Oschner & Sherren regimen. After successful management of appendicular mass patients, group A patients were advised to come periodically for follow up or as soon as any recurrence of symptoms appear. Patients with recurrence were admitted and appendicectomy was done either by open or laparoscopic procedure. Patients who did not turn up for review were closely followed up by telephonic conversation and their complaints if any were recorded. Group B patients were advised to come for interval appendectomy in 6 to 8 weeks. On their readmission they underwent appendicectomy either by open or laparoscopic procedure. Specimens were sent for HPE. All were followed up for minimum 6 months for any complication and to assess prognosis.

Data Analysis plan: The data collected from the patients was coded and entered into MS Excel sheet and master chart was prepared. The data was presented in the form of Tables. Univariate analysis was reported as mean and standard deviation and associations were established using chi square test for Multivariate analysis. The association was considered statistically significant if the p value was less than 0.05. SPSS Version 22 software was used for statistical analysis

RESULTS

A total of 50 patients with appendicular mass were included, with a mean age of 26–50 years and a male predominance. Group A (n=25) received conservative treatment alone, while Group B (n=25) underwent interval appendicectomy after 6–8 weeks.

Among participants, 26% were aged 12–25 years, 40% were 25–50 years, and 34% were 51–70 years. Males comprised 58% of the cohort. Age and sex distribution were similar across both groups.

Recurrence occurred in 3 patients (12%) in Group A and was histologically confirmed in 4 patients (16%) in Group B, suggesting that 84% underwent unnecessary surgery.

Complication rates were significantly higher in Group B (56%)—including bowel obstruction (20%), enterocutaneous fistula (16%), and sepsis (20%)—compared to just 8% in Group A (2 cases of adhesive obstruction).

Mean hospital stay was longer in Group B (5.43 days) than in Group A (3.54 days). These findings indicate that conservative management

with follow-up offers lower recurrence, fewer complications, and shorter hospital stay compared to routine interval appendicectomy.

Table 1 : Recurrence (Based On HPE Report)

Recurrence	Group A	Group B
Yes	3	4
No	22	21
Total	25	25
Proportion	0.24	0.64

Table 2 : Complications

Complications	Group A	Percentage	Group B	Percentage
Adhesive Obstruction	2	8%	5	20%
EC Fistula	0	Nil	4	16%
Sepsis	0	Nil	5	20%
Total	2	8%	14	56%

Table 3 : Duration Of Hospital Stay

Duration of Hospital stay	Group A	Group B
Less than 5 days	23	15
5 to 10 days	2	8
>10 days	0	2
Mean	3.54	5.43

DISCUSSION

Appendiceal mass forms as a natural defense mechanism to contain perforation-related infection. With the advent of better imaging and antibiotics, conservative management has gained wide acceptance.

Routine interval appendicectomy was once considered necessary to prevent recurrence and detect malignancy. However, numerous studies suggest low recurrence rates with conservative treatment alone:

⁷Youssef et al. Found IA prevented recurrence in only 10.6% at 6 weeks and 6.7% at 12 weeks. ⁸Price et al. Observed recurrence in only 6.2% with conservative management. ⁹AlQurashi et al. Argued IA adds little benefit while increasing risk

In our study, recurrence in the conservative-only group was 12%, similar to prior findings. Group B's HPE revealed appendicitis in only 16%, confirming unnecessary surgery in 84%. Complications were significantly higher in the IA group (56%), including fistula formation, sepsis, and adhesive obstruction. Group A had minimal complications (8%). Hospital stay was also shorter in conservatively treated patients, indicating lower healthcare burden.

CONCLUSION:

¹⁰Recent literature does not support routine interval appendicectomy following conservative management of appendiceal mass. In our study, the recurrence rates in both the interval appendicectomy group and the conservative management group were comparably low. However, the complication rates and duration of hospital stay were significantly higher in the interval appendicectomy group. Therefore, we conclude that conservative management with regular follow-up is a safer and more effective approach, and surgical intervention should be reserved for patients with recurrence

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