



## INTERVAL APPENDECTOMY IN APPENDICULAR MASS- STILL A DILEMMA? A RETROSPECTIVE STUDY

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**ABSTRACT** Appendicular mass is a well-known complication of acute appendicitis. It is conventionally treated conservatively followed by interval appendectomy. Lifetime risk of acute appendicitis is 8.6%. Appendectomy is treatment of choice for Acute appendicitis, Various schools of thought on Immediate vs Early appendectomy, Interval appendectomy, Entire conservative approach without any surgery, this study aims to evaluate the need for interval appendectomy after a successful treatment of appendiceal mass.

**KEYWORDS :** appendicular mass, interval appendectomy (IA), abscess.

### INTRODUCTION:

Lifetime risk of acute appendicitis is 8.6%<sup>(1)</sup>. Appendicitis is one of the common conditions which we encounter in our emergency dept. Appendectomy is treatment of choice for Acute appendicitis. It remains the most commonly performed abdominal surgery. 2-6% of patients present with mass formation<sup>(1)</sup>. Mass is end result of walled-off perforation which may range from phlegmon to abscess<sup>(2)</sup>. Mass has been managed conservatively Ochsner Sherren regimen (1901) and non-operative management by many surgeons. But what next is million-dollar question - interval appendectomy is traditional answer, but this approach is questioned in literature.

There are various schools of thought on immediate or early appendectomy v/s interval appendectomy and entire conservative approach without any surgery<sup>(3)</sup>. 663 surgeons in North America – IA is performed by 86% of surgeons<sup>(4)</sup>. 190 surgeons in England – 53% surgeons perform IA (4), Mid trend study in UK – 75% surgeons do so<sup>(4)</sup>. Recent trend – Junior specialists are less likely to offer IA after successful conservative management<sup>(5)</sup>.

Recent studies show that only 12-23% patients have recurrent symptoms – many are subjected to unnecessary IA<sup>(6)</sup>. Intra and post-op complications – 4-17%<sup>(7)</sup> 30% of histological examination of IA – normal with no e/o inflammation<sup>(6)</sup> requires second admission. More days of hospital stay; more work days lost. Not cost effective.

There are many studies that have reviewed the need for IA This is a paper published in, argued against the need for routine IA Study done 12yrs later gave similar conclusion, in a study “Routine interval appendectomy is unnecessary after a successful conservative treatment of an appendiceal mass” by Hamad Al et al It should be recommended selectively to those who develop recurrent symptom or recurrent acute appendicitis. Another study published 7yrs later in sept 2012, reached a similar conclusion: “Appendiceal mass should be managed nonoperatively at the initial presentation. Interval appendectomy is not indicated after successful nonoperative management”. The recurrence rate of acute appendicitis is low and appendectomy can be safely performed at that time. The risk of missing the diagnosis of an underlying malignancy is also low but we recommend additional evaluation with colonoscopy or barium enema in patient over 40 years.

In contradiction to these studies, more recent literature supports need for IA. A study done by Gerald paul et al in 2014 says that: There is a significant rate of neoplasms identified in patient over age 40 undergoing interval appendectomy. “IA should be considered following nonoperative management of complicated appendicitis/mass”. Another study by Fredrico et al done in 2017 say that: Hidden appendiceal neoplasm in acute appendicitis are rare, fortunately. However, its incidence is much higher in patients presenting appendiceal inflammatory mass. Hence, “interval appendectomy should be considered in this subgroup of patients”.

there is a catch. These papers highlight the need for IA in patients above 30 yrs of since this population subgroup is at a higher risk of malignancy. There was an 11% rate of appendiceal neoplasm in patients 30 years and older. The study results say that risk increases with increased age, with a 16% risk in patients 50 years and older. Given these findings, “we recommend consideration of interval appendectomy in all patients 30 years and older with complicated appendicitis”.

This study aims to evaluate the need for interval appendectomy after a successful treatment of appendiceal mass.

### AIMS AND OBJECTIVES:

To evaluate the need for interval appendectomy after a successful treatment of appendiceal mass.

### MATERIAL & METHODOLOGY:

**Study design:** Retrospective study Data has been collected from OPD cards, IP records and operative notes.

**Study Population** – Patients with appendicular mass who were managed conservatively and were advised interval appendectomy in MIMS, Mandya Hospital from June, 2018 to June-2020

**Study period:** 2 years

#### Sample size:

- Total number of Appendicitis patients -205
- Appendicular Mass - 36
- Interval Appendectomy – 22
- Who didn't undergo surgery – 14

#### Inclusion criteria:

- >18 years of age
- Those who were successfully managed conservatively

#### Exclusion criteria:

- < 18 years of age and pregnant
- Patients who had appendicular abscess
- Patients with failed oshner sherren regimen

### MATERIAL & METHODOLOGY:

205 patients case sheets were selected retrospectively who were diagnosed as appendicitis, of which 36 cases were appendicular mass, admitted in MIMS hospital. Mandya between 01/06/2020 to 01/06/2022. Patients who underwent interval appendectomy were documented and who didn't undergo surgery were noted. All data related to the objectives of the study were collected.

### OBSERVATIONS AND RESULTS:

Total number of Appendicitis patients were 205, of which cases of Appendicular Mass were 36. Among those Interval Appendectomy was done in 22 cases and 14 cases didn't undergo any surgery.

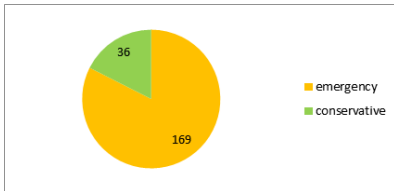
As recently as July 2020, this study was published in sages However

Most common age group was between 40-60 yrs, most common

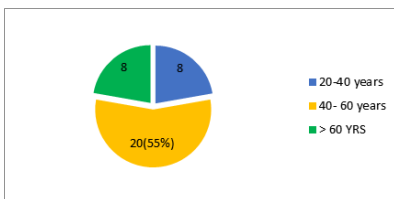
symptom of presentation was pain abdomen, most of the cases were simple mass followed by having adhesions, most cases intra-op difficulty was localization of appendix.

STTISTICS	
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Appendicular Mass	36
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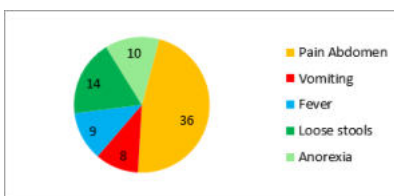
Of 205 cases 169 cases were managed by emergency appendicectomy, and 36 cases were managed by conservatively.



Most common age group was between 40-60yrs which was nearly 55%.

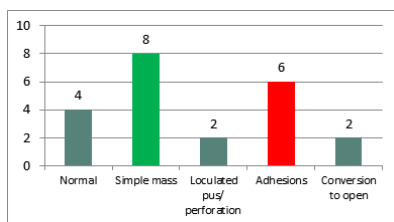


Most common symptom of presentation was pain abdomen seen in 36 cases, followed by loose stools, anorexia, fever and vomiting.



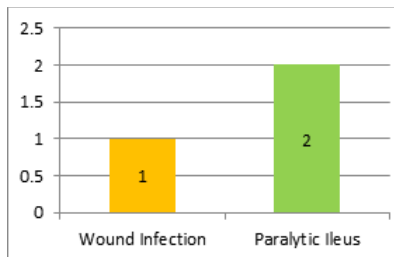
Of the 36 cases who underwent successive conservative management, 22 cases underwent interval appendicectomy and 14 cases didn't undergo surgery.

Of the cases who underwent surgery, most common intra-op finding was just simple mass, followed by adhesions and abscess.

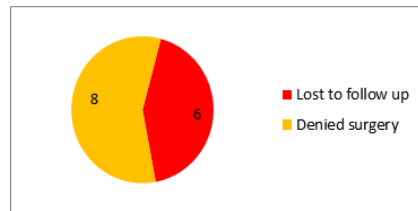


Localisation of the appendix was the most common difficulty faced intra op, followed by adhesiolysis, bleeding, trauma to bowel.

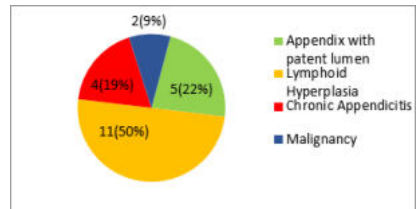
Most common post op complication was paralytic ileus followed by wound infection.



Of 14 patients who didn't turn up for surgery, 8 patients denied the procedure and 6 were lost to follow up. Of those denied 5 were asymptomatic, 2 had mild symptoms and 1 had financial reasons.



Biopsy done in 22 patients, 50% cases had lymphoid hyperplasia, 19% had chronic appendicitis, 22% had appendix with patent lumen and malignancy in 2% cases.



**DISCUSSION:**

36 patients, Male preponderance, 40- 60years. 42% of patients in my study were symptomatic after 6-8weeks.

Randomised prospective study by Yousuf et al.: Interval appendectomy performed at 6 - 12 weeks will prevent 6.7% – 10.6% of recurrent appendicitis.

Complication rate in my study is 18%, compared to 3.4 – 17% in other studies (8).

Interval appendectomy is still practiced due to risk of recurrence and chances of malignancy.

46pts- 16 had normal or obliterated appendix, others 44%- acute, 15% chronic, 15% IBD Only 9% developed recurrent abdominal pain after conservative management. 22% of patients had normal appendix with patent lumen, compared to 16% in other literature (10). Other patients were diagnosed with lymphoid hyperplasia (50%), Chronic appendicitis and malignancy (9%). 14% of patients above 40yrs of age had appendicular malignancy in my study.

Recent studies have shown that risk of appendiceal neoplasms increases to 16% in patients above 40 years of age (9).

**CONCLUSION:**

Interval Appendectomy to be planned for those who are symptomatic and for all the patients above 40 years of age. Risk of missing the diagnosis of “hidden pathology” is avoided by getting CECT abdomen and pelvis + colonoscopy.

Now the question remains:

Can Interval appendectomy be performed routinely for patients with appendicular mass?

1. With these statistics, I would like to conclude that my study supports / states that Interval Appendectomy could be a superior strategy for pts who are symptomatic and for all the patients above 40 years of age.

2. Appendectomy will provide a definite diagnosis and also rule out any underlying malignancy masquerading as a phlegmon or appendiceal mass.

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