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## Conservative Approach to Uncomplicated Appendicitis: Is it Feasible During a Pandemic A Paradigm Shift of the Future

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### Abstract

The present study aimed to know the feasibility of conservative management of acute uncomplicated appendicitis. The patients admitted in RIMS for uncomplicated acute appendicitis in department of general surgery or department of surgical oncology at RIMS, Raichur from July 2021 to July 2022. 80 patients were included in the study and 80 patients were divided into two groups with 40 patients in each group. There were male predominance in both the groups and most of the patients belonged to 21-60 years of age. The commonest type was acute appendicitis which was 70% followed by perforated appendicitis. Most of the patients with acute appendicitis were treated conservatively. 58 patients were treated conservatively and 22 patients were treated by surgery. Conservative management is more emphasized in managing appendicitis (acute and uncomplicated).

## INTRODUCTION

During the COVID-19 pandemic, all efforts should be deployed in order to evaluate the feasibility of postponing surgery until the patient is no longer considered potentially infectious or at risk of perioperative complications. If surgery is deemed necessary, the emergency surgeon must minimise the risk of exposure to the virus by involving a minimal number of healthcare staff and shortening the occupation of the operating theatre. In case of a lack of security measures to enable safe laparoscopy, open surgery should be considered<sup>[1]</sup>. Current data suggest that non operative treatment is safe. It appears effective as initial treatment in 97% of children with acute uncomplicated appendicitis and the rate of recurrent appendicitis is 14%<sup>[2]</sup>.

Acute appendicitis (AA) is the most common general surgical emergency worldwide<sup>[3]</sup>. The lifetime risk of developing AA is 6.7% and 8.6% in females and males respectively<sup>[4]</sup>. >30,000 appendectomies are performed in England alone each year. Mortality from uncomplicated AA is extremely low at 0.1%, however, mortality increases with delay in presentation<sup>[3]</sup>. The risk of appendix rupture increases significantly from 36 h after onset of symptoms<sup>[6]</sup>. Gangrenous appendicitis occurs in 10% of patients and perforation or abscess is seen in up to one fifth and both are associated with increased complications<sup>[7]</sup>. In the UK, operative intervention within 48 h of presentation is recommended for AA<sup>[8]</sup>. Laparoscopic appendectomy offers clear advantages over open appendectomy including less postoperative pain, fewer surgical site infections, decreased length of hospital stay (LOS) and quicker return to normal function<sup>[9]</sup> and accounts for around 94% and 98% of appendectomies performed in males and females respectively<sup>[10]</sup>.

There is a growing evidence base that AA not complicated by gangrene or perforation can be managed without surgery<sup>[11,12]</sup>, is associated with shorter time away from work or education, significantly lower overall complication rate at 5 years after the episode of AA and is cheaper<sup>[13,14]</sup>. However, AA can return after successful non-operative management<sup>[9]</sup>. Despite these considerations, operative treatment remains the first line treatment for nearly all cases of AA in the UK., management with antibiotics usually reserved for those presenting with AA complicated by phlegmon or abscess<sup>[15]</sup>.

The aim of the present study was to know feasibility of conservative management of acute uncomplicated appendicitis.

## MATERIALS AND METHODS

The patients admitted in RIMS for uncomplicated acute appendicitis in department of general surgery or department of surgical oncology at RIMS, Raichur from

July 2021-July 2022. 80 patients were included in the study and 80 patients were divided into two groups with 40 patients in each group.

- **Group 1: Conservative group:** NBM, I.V antibiotics, analgesics, I.V fluids.

If complications/doubt full complications appear surgery is performed-open/laparoscopy.

- **Group 2: Surgery group:** open/laparoscopic appendectomy.

Written informed consent was obtained from all participating patients. This study was done at Dept of General surgery. The complete data was collected in a specially designed case recording sheet (CRS), from the patients by taking detailed history and by doing detailed clinical examination.

Patient is selected for study depending on inclusion and exclusion criteria.

Inclusion and exclusion criteria for the study

### Inclusion Criteria:

- AGE group 10-60 years.
- Uncomplicated acute appendicitis.
- No other general co-morbidities.

### Exclusion Criteria:

- Increased blood count.
- Complicated appendicitis.
- Recurrent appendicitis.

## RESULTS AND DISCUSSIONS

There were male predominance in both the groups and most of the patients belonged to 21-60 years of age.

The commonest type was acute appendicitis which was 70% followed by perforated appendicitis.

Most of the patients with acute appendicitis were treated conservatively.

58 patients were treated conservatively and 22 patients were treated by surgery.

SARS-CoV-2 (COVID-19) brought widespread concerns of the spread of infection during aerosol generating procedures (AGPs) such as surgery, and particularly, laparoscopic surgery<sup>[16,17]</sup>. In addition, research into COVID positive patients having surgery reported high mortality rates even following minor procedures<sup>[18]</sup>. Compounding this, there was a lack of personal protective equipment (PPE) for surgeons at the start of the pandemic<sup>[19]</sup>.

There were male predominance in both the groups and most of the patients belonged to 21-60 years of

**Table 1: Demographic data**

Gender	Group 1	Group 2	Total
Male	28	30	58
Female	12	10	22
Age groups in years			
<20 years	4	5	9
21-40 years	16	15	31
41-60 years	12	13	25
>60 years	8	7	15

**Table 2: Type of appendicitis**

Type of appendicitis	Group 1	Group 2	Total
Acute Appendicitis	28	28	56
Perforated Appendicitis	8	7	15
Suppurative Appendicitis	3	4	7
Appendicular Mass	1	1	2

**Table 3: Management of acute appendicitis**

Management	Group 1	Group 2	Total
Conservative	20	18	38
Surgery	10	8	18
Total	30	26	56

**Table 4: Management of appendicitis**

Management	Group 1	Group 2	Total
Conservative	28	30	58
Surgery	12	10	22
Total	40	40	80

age. The commonest type was acute appendicitis which was 70% followed by perforated appendicitis. Most of the patients with acute appendicitis were treated conservatively. 58 patients were treated conservatively and 22 patients were treated by surgery. CT is highly sensitive at detecting AA and is known to reduce the rate of negative appendicectomies significantly, making routine CT imaging perhaps with a lower radiation dose a future consideration<sup>[20]</sup>. It is not apparent why patients in this study who had an USS were significantly more likely to have conservative management. It may be that they were clinically less convincing and the USS was used to exclude other pathology (especially gynaecological) rather than confirm appendicitis. Alternatively, the sonographers may have preferred USS to make the diagnosis of AA, rather than CT scan, an approach that is recommended by the recent WSES Jerusalem Guidelines<sup>[21]</sup>.

Now, in the pandemic situation the treatment concepts for acute appendicitis have been challenged for medical, epidemiological and organizational reasons. Therefore, the first line therapy with antibiotics for uncomplicated acute appendicitis in the COVID-19 pandemic has been recommended in UK and USA<sup>[22,23]</sup>. At the same time, laparoscopic appendicectomy remained the recommended standard for acute appendicitis in Germany-even during COVID-19 pandemic<sup>[24]</sup>.

## CONCLUSION

Conservative management is more emphasized in managing appendicitis (acute and uncomplicated) patients during this pandemic. However, duration of stay in conservatively treated patient was longer. This

goes against with the other fundamental principle; reducing overcrowding in hospital. Hence, this brings to the dilemma, which is a better option during this pandemic., conservative or surgical approach On the other hand, surgical approach increases numbers of medical personnel being in direct contact with patients as it involves of both surgical and anesthesiology departments. However, conservative management is always a better alternative to operative management, when it is uncomplicated and continuously monitored. This principal can be applied in situation of any pandemic.

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