

Original Research Article

Study of acute appendicitis among surgery inpatients of a secondary care hospital

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ABSTRACT

Background: Pain in abdomen is one of the most common symptoms which patients presented at emergency department, which seeks urgent medical attention and treatment. Acute appendicitis is one among the predominant acute abdominal surgical emergency. This condition may be associated with complications and significant rise in morbidity and even mortality if there is a delayed diagnosis and treatment.

Methods: This was a hospital based descriptive study of the patients admitted in the department of General Surgery of JSS Hospital, Chamarajanagar, between June 2017 and August 2019, with clinically diagnosed acute appendicitis, which was confirmed on ultrasonography, postoperatively confirmed by histopathology.

Results: The present study showed that acute appendicitis was most common among the age group of 11-30 years (57.3%) and more among the males (58.8%). The surgery done for acute appendicitis was open appendectomy, done for 82.4% of the cases, 16.2% of the cases required laparotomy with peritoneal lavage and drainage, due to abscess formation, perforation and associated small bowel perforation.

Conclusions: The most common age group affected with appendicitis in our study was 11-30 years. The most common intra operative finding was inflamed appendix, which showed that simple appendicitis is more common than complicated appendicitis in our study and appendectomy is the preferred surgery for acute appendicitis.

Keywords: Acute appendicitis, Pain in abdomen, Appendectomy

INTRODUCTION

Pain in abdomen is one of the most common symptoms which patients presented at the emergency department, which seeks urgent medical attention and treatment. Acute appendicitis is one of the most commonly presenting surgically correctable acute abdominal emergencies.

The appendix, this underdeveloped residuum of the caecum has no known function and is commonly termed as a 'vestigial' organ, yet appendicitis continues to be the most common acute abdominal condition that requires immediate surgical treatment. Acute appendicitis is the

most common abdominal surgical emergency with a lifetime incidence of 7-10%.^{1,2}

Acute appendicitis may present with associated complications and significant rise in morbidity and mortality if diagnosis and treatment are delayed. Appendicitis remains a clinical diagnosis despite of the advances in medical imaging. Emergency appendectomy remains the primary option in the treatment of acute appendicitis. It is considered to be a low-risk surgical procedure; with reported mortality rates between 0.03 and 0.24%.³ Classical cases are diagnosed clinically whereas atypical clinical presentation, especially in paediatric age group, where delayed diagnosis continues to be major cause of complicated appendicitis.

Appendectomy is the preferred surgery to prevent acute complications of abscess, perforation, peritonitis, septicemia, septic shock and death. All specimens after appendectomy should be analyzed by microscopy by a pathologist to reach to confirm diagnosis and exclude malignancies.⁴

The objective of the study was to assess the prevalence of acute appendicitis among surgery inpatients of a secondary care setup, depending on different factors such as age and sex-wise distribution, presenting symptoms, varying intra operative findings and the surgery performed.

METHODS

Our study was a hospital based, descriptive study, of the patients admitted in the Department of General Surgery at JSS Hospital, Chamarajanagar affiliated to the JSS Medical College, Mysore during the time between June 2017 and August 2019.

Patients who were clinically diagnosed to have acute appendicitis, confirmed by ultrasonography of abdomen. A pretested, semi-structured questionnaire was used to collect all the necessary information. Among a total of 435 patients admitted under the Department of General Surgery, 68 patients were diagnosed to have acute appendicitis, confirmed by radiological imaging, underwent surgery and the diagnosis was also confirmed histopathologically.

Inclusion criteria

All patients with clinically diagnosed acute appendicitis diagnosed clinically and confirmed by sonology and laboratory investigations.

Exclusion criteria

Patients with appendicular mass, other urological and gynecology related pain in abdomen and patients not willing for the study.

As this study was conducted in a peripheral secondary care hospital, all patients underwent open appendectomy due to the unavailability of laparoscopy instruments.

The data was collected and analysed using Microsoft Excel and presented in number and percentages.

RESULTS

The present study showed that acute appendicitis was most prevalent in the age group of 21-30 years (29.4%), followed by 11-20 years (27.9%), 31-40 years (17.6%), 41-50 years (10.2%) and least in the age group above 61 years (1.5%) followed by 51-60 years age group as well as children less than 10 years (both 5.9%) as shown in Table 1.

Table 1: Age wise distribution of the appendicitis patients.

Age group (in years)	N (%)
<10	4 (5.88)
11-20	19 (27.94)
21-30	20 (29.41)
31-40	12 (17.65)
41-50	7 (10.29)
51-60	4 (5.88)
>60	2 (2.94)
Total	68 (100)

Prevalence of acute appendicitis was found to be more among the males (58.8%) than females (41.1%) as shown in Table 2.

Table 2: Sex wise distribution of the appendicitis patients.

Sex	N (%)
Female	28 (41.18)
Male	40 (58.82)
Total	68 (100)

The commonest and the predominant symptom were found to be pain in abdomen, which was seen in all the patients and was also the isolated symptom in 48.5% of the patients. Vomiting was the commonest associated symptom (36.76%), followed by fever (16.1%), nausea (7.4%) and dysuria (4.4%) and the least associated symptoms were loose stools (1.4%), constipation (1.4%) and loss of appetite (1.4%) as shown in Table 3.

Table 3: Distribution of the patients as per the most common presenting clinical feature.

Presenting clinical feature	N (%)
Pain in abdomen	68 (100)
Vomiting	25 (36.76)
Fever	11 (16.18)
Nausea	5 (7.35)
Dysuria	3 (4.41)
Loose stools, constipation, loss of appetite	3 (4.41)

Table 4: Distribution of the patients as per the most common intraoperative finding.

Intraoperative finding	No. (%)
Inflamed appendix	48 (70.59)
Perforated appendix	7 (10.29)
Appendicular abscess	7 (10.29)
Recurrent appendicitis	3 (4.41)
Early mass formation	2 (2.94)
Peritonitis secondary to jejunal perforation	1 (1.47)
Total	68 (100)

Intra operatively 70.5% of the patients were found to have only inflamed appendix- simple appendicitis whereas 29.5% of the patients were found to have complicated appendicitis, most commonly appendicular abscess (10.3%) or perforated appendix (also 10.3%), recurrent appendicitis (4.4%) and early mass formation (2.9%). Friable appendix and peritonitis secondary to small bowel perforation was seen in 1.5% of the cases (Table 4).

Table 5: Distribution of the patients as per the surgery performed.

Surgery performed	N (%)
Open appendectomy	56 (82.35)
Laparotomy with peritoneal lavage with drainage	11 (16.18)
Laparotomy with resection and anastomosis of small bowel	1 (1.47)
Total	68 (100)

According to our study, open appendectomy was the most common surgery done for acute appendicitis done for 82.4% of the cases. 16.2% of the cases required laparotomy with peritoneal lavage and drainage, due to appendicular abscess, perforation, early mass formation and small bowel perforation (Table 5).

DISCUSSION

In our study the age range of the patients affected with acute appendicitis was found to be 6-68 years and the mean age was found to be 25.76, out of 68 patients operated, 39 patients were from the age group of 11-30 years range, which was comparable to those found in Talukder et al, Shreshta et al, Swagata et al, whereas Subedi et al reported mean age of 42 years.⁵⁻⁸

In our study the male: female ratio was 1.43: 1, which shows men are more affected than women, whereas male to female ratio was 1.27: 1 in Swagata et al.^{7,8}

In our study lower abdominal pain was the commonest presenting symptom (100%), followed by nausea or vomiting in 30% of the patients. Subedi et al reported that 98% of the patients with acute appendicitis presented with pain in the periumbilical region migrating to the right iliac fossa.⁸

In our study acute appendicitis was confirmed intra operatively among 48 (70.59%) patients, 7 (10.29%) had appendicular abscess and 7 (10.29%) patients had perforated appendix. These findings were comparable to those reported by Dey et al.⁹

Although laparoscopic appendectomy is considered superior to open appendectomy in terms of earlier return to normal function and less chances of postoperative wound infection and subsequent bowel obstruction and

lesser postoperative morbidity, due to the non-availability of laparoscopic instruments at our hospital, all patients who were diagnosed to have acute appendicitis underwent open appendectomy.^{1,10} Intra operatively the patients who were found to have complicated appendicitis, underwent laparotomy with peritoneal lavage and drainage to prevent the formation of intraperitoneal abscess.¹¹

CONCLUSION

In our study the most common age group affected with appendicitis was found to be 11-30 years, with males being affected more than females with the most constant and common symptom of abdominal pain. The most common intra operative finding was inflamed appendix which showed that simple appendicitis is more common than complicated appendicitis.

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