

Evaluation of Surgical Profile of Patients Undergoing Appendectomy: is the Common Pathology Still of Interest?

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Abstract

Background: Effective health care implies careful consideration of all associated factors before the final decision. Acute appendicitis is one of the surgical emergencies and requires effective health care, early diagnosis, and rapid intervention with effective decision-making.

Material & Methods: The present cross-sectional observational study was conducted at the department of surgery of our tertiary care hospital. 200 Patients with acute appendicitis were enrolled from the outdoor department and ward by simple random sampling. Institutional Ethics Committee Clearance was obtained before the start of the study and written and informed consent for the procedure was obtained from all the patients. Strict confidentiality was maintained with patient identity and data and not revealed, at any point in time.

Results: Abdominal pain was reported and presented by every study participant. The next most common symptom reported by the study participants was the loss of appetite which was found in 88% of subjects followed by nausea in 84% of study participants. Fever was reported from 72% of subjects and 57% of study participants suffered from vomiting. Thus, abdominal pain was the universal finding in the present study. Right iliac fossa tenderness was also found in all subjects. Abdominal mass was not found in any patient on clinical local examination. 4% of patients were known cases of diabetes and 7% of patients had experienced episodes of acute abdominal pain in the past. The previous history of heart disease was reported from only two cases. No patient was found to have lymphadenitis. The cardiovascular and respiratory examinations were normal in all the study participants.

Conclusion: The age distribution pattern was similar among both sexes, although the incidence is marginally higher in males. Acute appendicitis was more common in younger age groups. The most common presenting symptom in the present study was Abdominal pain followed by loss of appetite, nausea, fever, and vomiting. Right iliac fossa tenderness was also found in all subjects.

Keywords: Appendicitis, Appendectomy, Right iliac fossa.

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Introduction

Acute appendicitis is one of the leading causes of acute abdomen pain which requires surgical intervention. The peak

incidence of acute appendicitis is between 15-19 years among males and 10-14 years among females. The global prevalence of

acute appendicitis is approximately 7% of the total population [1]. The most important etiological factor of acute appendicitis reported is the development of luminal obstruction, which is etiologically associated with age. In younger patients (age group less than 20 years) lymphoid hyperplasia is the most common precipitating factor, while among elderly patients the obstruction of the lumen by a fecalith is the most common precipitating factor [2]. The treatment of choice for acute appendicitis is appendectomy. The benefits of early and prompt diagnosis of acute appendicitis significantly eliminate the risk of anticipated complications such as sepsis, perforation, and death [3].

Effective health care implies careful consideration of all associated factors before the final decision. Acute appendicitis is one of the surgical emergencies and requires effective health care, early diagnosis, and rapid intervention with effective decision-making [4]. The intervention related to surgical exploration in cases with suspected appendicitis involves high diagnostic accuracy, associated co-morbidities, patient's age, patient's consent, the surgeon's core medical values, priority considerations related to the use of limited resources, and expected natural course of non-operative management. Important associated factors which should be considered are the safety of diagnostic procedures and treatment alternatives as well as their impact on the patient's safety, outcome, quality-of-life, long-term survival, and health economics [5].

The decision for surgical intervention on a patient with suspected acute appendicitis can therefore be published as a research study that how various factors are associated with surgical decision-making [6]. A study by Fitz RH almost 110 years ago was able to elaborate on the pathophysiology as well as the management of acute appendicitis.

Presentation of appendicitis is very wide and variable and, in some cases, even the most experienced surgeons face difficulty in accurately commenting on the condition [7]. The previous researches on acute appendicitis are very useful and a reference for new surgeons. Hence the present study was conducted to assess and evaluate the clinical and surgical profile of patients undergoing an appendectomy.

Materials & methods

The present cross-sectional observational study was conducted at the department of surgery of our tertiary care hospital. The study duration was of one year from January 2019 to December 2019. A sample size of 200 was calculated at a 90% confidence interval at a 5% acceptable margin of error by epi info software version 7.2. 200 Patients with acute appendicitis were enrolled from the outdoor department and the ward by simple random sampling. Institutional Ethics Committee Clearance was obtained before the start of the study and written and informed consent for the procedure was obtained from all the patients. Strict confidentiality was maintained with patient identity and data and not revealed, at any point in time.

Detailed demographic history including age, sex, etc. along with the presenting complaints has been noted. Past history of the patient included any history of previous episodes of pain, history of diabetes mellitus, and heart disease were also recorded. Dietary history along with alcohol intake and smoking and diet was recorded. Blood pressure, pulse, and temperature were noted. Detailed clinical systemic examination was done for the detection of the presence of lymphadenopathy and any abnormality in the cardiovascular system and respiratory system. The local examination included detection of any abdominal mass and presence of right inguinal tenderness. All patients were subjected to hemoglobin, complete blood cells examination, serum

creatinine levels, and abdominal ultrasonography. All the data was recorded on a Microsoft Excel spreadsheet and data analysis was done at 10% alpha and 90% confidence interval using SPSS v22 software. Test of significance was applied on collected and organized data and a p-value less than 0.05 was considered as a statistically significant association between study variables.

Results

In the present study, A total of 200 patients were studied and the incidence of acute appendicitis was found much more in males i.e. 116 (58%) compared to only 84 (42%)

in females. It was also reported in the present study that acute appendicitis was more common in younger age groups of below 30 years of age and similarly as the age advances the incidence of acute appendicitis was decreased. The incidence among patients 30 years or less was 156 (78%) and it was markedly dropped down to 42 (21%) in the age group of 30 years and above age group. Similarly, in the age group of more than 50 years of age, the incidence of acute appendicitis was coming down to one percent i.e. only two cases were reported above the age of 50 years. (Table 1)

Table 1: Distribution of study participants according to age.

Parameters		No. of patients (%)
Sex	Female	84 (42%)
	Male	116 (58%)
Age	< 30 years	156 (78%)
	30-50 years	42 (21%)
	>50years	02 (1%)

Abdominal pain was reported and presented by every study participant. The next most common symptom reported by the study participants was the loss of appetite which was found in 88% of subjects followed by nausea in 84% of study participants. Fever was reported from 72% of subjects and 57% of study

participants suffered from vomiting. Thus, abdominal pain was the universal finding in the present study. Right iliac fossa tenderness was also found in all subjects. Abdominal mass was not found in any patient on clinical local examination. (Table 2)

Table 2: Distribution of patients as per the presenting complaints.

Presenting complaint	No. of patients (%)
Abdominal pain	200 (100%)
Right iliac fossa tenderness	200 (100%)
Loss of appetite	176 (88%)
Nausea	168 (84%)
Fever	144 (72%)
Vomiting	114 (57%)

In the present study 4% of patients were known cases of diabetes and 7% of patients had experienced episodes of acute abdominal pain in the past. The previous history of heart disease was reported from

only two cases. There were 9% of the patients were taking alcohol and 13% of the cases were Smokers. Out of the total, only 74% of patients were having a vegetarian diet. On systemic examination of the study

participants, it was reported that only 41% of patients were in a state of good nutrition. No patient was found to have

lymphadenitis. The cardiovascular and respiratory examinations were normal in all the study participants. (Table 3)

Table 3: Distribution of patients on the basis of history.

Findings	No. of patients (%)
Diabetes mellitus	8 (4%)
Heart disease	2 (1%)
Episodes of pain	14 (7%)
Alcohol use	18 (9%)
Smoking	26 (13%)
Vegetarian diet	148 (74%)
Good nutrition	82 (41%)

Discussion

In the present study, A total of 200 patients were studied and the incidence of acute appendicitis was found much more in males i.e. 116 (58%) compared to only 84 (42%) in females. It was also reported in the present study that acute appendicitis was more common in younger age groups of below 30 years of age and similarly as the age advances the incidence of acute appendicitis was decreased. The incidence among patients 30 years or less was 156 (78%) and it was markedly dropped down to 42 (21%) in the age group of 30 years and above age group. Similarly, in the age group of more than 50 years of age, the incidence of acute appendicitis came down to one percent i.e. only two cases were reported above the age of 50 years. A study conducted by Mungadi IA et al reported that the burden of acute appendicitis among patients of acute abdominal pain was 38.9%. The younger age group of 20-30 years was found to have a high incidence. Males were affected more than females in their study. The morbidity and mortality rate reported was 13% and 1% respectively [8]. A similar study conducted by Bakken IJ et al found that almost similar incidence of acute appendicitis for both sexes. Younger patients had high incidence than the older age groups. Perforation was found more among male patients 12-21% in compared to female patients 9-17%. They

also reported that the duration of hospital stays was less for the cases operated with the laparoscopic method than the open method [9].

Abdominal pain was reported and presented by every study participant. The next most common symptom reported by the study participants was the loss of appetite which was found in 88% of subjects followed by nausea in 84% of study participants. Fever was reported from 72% of subjects and 57% of study participants suffered from vomiting. Thus, abdominal pain was the universal finding in the present study. Right iliac fossa tenderness was also found in all subjects. Abdominal mass was not found in any patient on clinical local examination. A study conducted by Luckmann R et al reported that there was a higher incidence of acute appendicitis among males than females and a higher incidence among age group less than 30 years of age than older age groups. They reported higher rates of appendicitis during July to September in a calendar year and the month December showed the lowest rates [10]. Similar results were found in a study conducted by Okafor PI et al among the cases of acute appendicitis and found that the patients belonged to 15-60 years of age with males in higher proportion. They found fever as the most common presenting symptom, which was followed by anorexia and pain.

They reported palpable mass in the right iliac fossa. However, the present study did not report any patient with a palpable mass in the right iliac fossa [11].

In the present study 4% of patients were known cases of diabetes and 7% of patients had experienced episodes of acute abdominal pain in the past. The previous history of heart disease was reported from only two cases. There were 9% of the patients were taking alcohol and 13% of the cases were Smokers. Out of the total, only 74% of patients were having a vegetarian diet. On systemic examination of the study participants, it was reported that only 41% of patients were in a state of good nutrition. No patient was found to have lymphadenitis. The cardiovascular and respiratory examinations were normal in all the study participants. A study conducted by Addiss DG et al among 250000 cases of appendicitis reported that the age group of 10-19 years was common. They also reported that males were affected more than females. They reported that the incidence of appendicitis among females in the age group of 40-45 years was more than males in the same age group [12]. A similar study conducted by Wolkomir A et al studied seasonal variation for the cases of acute appendicitis and found a high incidence in the spring and summer months [13,14].

Conclusion

We concluded from the present study that the age distribution pattern was similar among both sexes, although the incidence is marginally higher in males. Acute appendicitis was more common in younger age groups. The most common presenting symptom in the present study was Abdominal pain followed by loss of appetite, nausea, fever, and vomiting. Right iliac fossa tenderness was also found in all subjects.

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