



A Clinicopathological Review of 168 Patients with Acute Appendicitis in Taiz, Yemen: A Prospective Study

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Abstract

Introduction: Acute appendicitis remains a common surgical condition and the importance of specific elements in the clinical diagnosis remain controversial. A variety of neoplastic and inflammatory conditions mimic acute appendicitis. The aim of this study was to determine the presenting pattern of acute appendicitis and to review the pathological diagnosis.

Patients and Methods: This is a prospective analysis of 168 patients who had appendectomy for acute appendicitis at Authority of Al Thawra Hospital (Taiz, Yemen) during the period December to April 2020. Patient demographics, clinical features, white cell count, operative findings, outcome and histology results were recorded.

Results: A total of 168 patients underwent appendectomy during this period 73 (70.2%) of the patients were males, with a male-to-female ratio of 2.3:1. The majority of our patients were in the second decade (43.26%) with mean age of the studied population was 22.16 (range from 7 to 60 years).The most common symptoms were abdominal pain (100%), vomiting (88.5%) and anorexia (91.3%). , local tenderness and rebound tenderness were the most common presentation, WBC was >10000 in 63 (60.6%) patients, Neutrophil was >70 in 78(75%) patients. By histopathology negative appendectomy was in 12 (11.5%) patients.

Conclusions: Appendicitis is the most common general surgical emergency worldwide, but its clinical diagnosis remains challenging, clinical diagnosis should be the main method for diagnosis acute appendicitis.

Key words: Acute Appendicitis, Clinical, Histopathology, Taiz, Yemen.

Introduction

Appendicitis is the most common general surgical emergency worldwide[1,2,3] but its clinical diagnosis remains challenging [4] and may be delayed particularly in young women who have a broader range of differential diagnoses than for men. It can only be confidently diagnosed by histopathological examination.[5] A Delay in the diagnosis and treatment of acute appendicitis lead to high mortality and morbidity.[6]

Clinical feature is not always present, physical exam finding may be not conclusive and present only in 37%-53% of patient [7], scoring systems as Appendicitis Inflammatory Response (AIRS) and Alvarado scores are have been inconsistently and poorly validated. [8,9] More than that appendicitis mimics a lot of diseases that produce the same clinical features thus clinical diagnosis of acute appendicitis is associated with high rates of patients undergoing appendectomy while not having appendicitis entitled false appendectomy 26% of cases. [9]

Currently no gold standard diagnostic measures available that can accurately diagnose appendicitis.10The absolute diagnosis of acute appendicitis is after surgery and histopathological examination. [5,11]

The practice of sending all appendix specimens for routine Histopathological examination depends on the surgeon opinion that appendices should be sent for examination only if there is an obvious macroscopic abnormality at surgery.

The histopathological examination of the appendix allows the diagnosis of acute appendicitis to be confirmed, also may affect subsequent clinical management of the patient.

Specimens reported as negative for acute appendicitis are useful in eliminating acute appendicitis as a cause of symptoms and allowing further investigations to be erformed.[12]

So our aim is to study the clinical and histopathological features of acute appendicitis among patients who underwent open appendectomy in Al- Thawra hospital Authority, Taiz to evaluate our clinical assessment of acute appendicitis by feedback from histopathological exam.

Patient and Method

This was a prospective observational study of 104 patients diagnosed and treated for acute appendicitis at the Authority of Al Thawra Hospital –Taiz from December 2019 to April 2020. Patients' files were reviewed on admission and after discharge. Data retrieved included patients' demographics, clinical presentation, and duration of symptoms before presentation to the hospital, results of diagnostic investigations and evidence of complicated disease at presentation, length of hospital stay, intensive care unit (ICU) admission, negative appendectomy, and mortality rate. An Excel sheet was used for data collection and Statistical was used for statistical analysis.

Permission to conduct the study was received from the Human Ethics Committee of the University.

Results

During the study period, from December to April 2020 the total number of patients

underwent appendectomy in Authority of Al Thawra Hospital -Taiz was 168 patients which represented 36.44% of the total numbers of patients underwent emergency operation (168 of 461), which constituted the most common indication for emergency operation, were included in our study. The frequency of acute appendicitis in our hospital during the study period represented 36.44% of all indications for emergency operation. 73 (70.2%) of the patients were males, with a male-to-female ratio of 2.3:1 and the mean age of the study patients was found to be 22.16.

Common presenting symptoms were abdominal pain (100%), nausea (91.3%), vomiting (88.5%), and 25% had atypical acute appendicitis presentation.

WBC was >10000 in 63 (60.6%) patients, Neutrophil was >70 in 78(75%) patients. By histopathology, negative appendectomy was in 12 (11.5%) patients.

Operation diagnosis	Histopathological acute appendicitis		Histopathological normal appendix		Total		P value
	No	%	No	%	No	%	
Yes	78	75%	3	2.88%	81	77.88%	0
No	14	13.46%	9	8.65%	23	22.11%	
Total patients	92	88.46%	12	11.53%	104	99.99%	
P>0.05% = 0 no significant							

Discussion

Appendicitis is the most common general surgical emergency worldwide. [13,14] but its clinical diagnosis remains challenging³ and may be delayed particularly in young women.[15] The diagnosis of appendicitis based on detailed history and physical examination, application of scoring systems and inpatient clinical observation, correlated with laboratory and imaging investigation.[16] However, this is not always an easy task. Currently no gold standard diagnostic measures available that can accurately diagnosed appendicitis. The absolute diagnosis of acute appendicitis is after surgery and histopathological examination. [17,18]

Acute appendicitis mimics a lot of diseases that produce the same clinical features thus clinical diagnosis of acute appendicitis is associated with high rates of patients undergoing appendectomy while not having appendicitis entitled false appendectomy 26% of cases.[19]

Many studies have been done in the past in most parts of the world to find the accurately diagnosis for acute appendicitis before surgery and to Minimis false appendectomy. A variety of investigation and radiographic studies may be used to diagnose appendicitis. However the absolute diagnosis of acute appendicitis is after surgery and histopathological examination. [17,18]

Because we living in a war country with poor people and low investigation resources we depend on clinical diagnosis. In Yemen, as a result of the lack of national data and feedback for appendectomy we conducted this prospective study to establish the clinical and histopathology of patients present to emergency department with acute appendicitis in our hospital. Within five consecutive months; December 2019 to 30th of April 2020, 104 patients with acute appendicitis who underwent open appendectomy were enrolled in this prospective descriptive study in Authority of Al Thawra Hospital -Taiz, Yemen, constituted 36.44% of the total patients underwent emergency operation in this period.

In our study rate of appendectomy is higher in males 73 (70.19%) patients compared to females 31(29.80%) patients, Similar to study done in India reported that, males 34(56.6%) patients compared to females²⁶ (43.3%) patients²⁰, also another study done in Palestine was found males 59 (59%) patients, female 41(41%) patients²¹. On the other hand, study done in Palestine 2018 reported Female 111(56.34%) more than male 86(43.65%) patients.[20]

In our study young adults particularly those in age group <20 years are most common to undergo appendectomy, in the study done in India young adults particularly those in age group 20-30 years were most common group.[20] similar to study done in Pakistan 2011 by Ana Jalil et al young adults particularly those 2nd and 3rd decades of life were most common group (90.45%).[22]

In our study WBC count greater than 10,000 cells/UL was considered significant, Sixty (57.69%) patients with positive pathology of acute appendicitis had WBC of greater than 10,000 near to study done in 2016 Bahrain by Mohammed Zourob et al Two hundred eleven (73.8) patients with positive pathology of acute appendicitis had WBC of greater than 10,000.[23]

In our study there was significant for positive USG report for acute appendicitis and no significant for negative USG report for acute appendicitis similar finding was found by another study.[24]

Negative appendectomy (normal histopathology examination (HPE) report) was seen in 12(11.5%) patients, which was near to the study done in Ireland where negative appendectomy was (12.9%). [25] Also another study reported negative appendectomy was (13.3%).[20] in opposite side study reported higher negative rate n=29 (10.1 %) [23], In our study Negative predictive value of operative findings to identify appendicitis was 13.46% Which higher than study done in 2020 in India by Joshua CC et al. [26]

Conclusion

Appendicitis is the most common general surgical emergency worldwide, but its clinical diagnosis remains challenging, clinical diagnosis should be the main method for diagnosis acute appendicitis.

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