

Role of Ultrasonography in Diagnosis of Acute Appendicitis and Its Management at GSL Medical College and Hospital, Rajahmundry.

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Abstract: Acute appendicitis is one of the commonest conditions treated at emergency. Despite of advances in diagnostic medicine and therapeutics, the diagnosis of appendicitis remains essentially clinical, requiring clinical acumen and surgical knowledge. Maximum incidence noted in 2nd to 4th decade of life with male predominance. Recently USG is shown to be effective in the diagnosis. Management varies from conservative to emergency appendectomy. In this hospital based study comprising 100 patients, admitted to surgical department with a preliminary diagnosis of acute appendicitis, patients of both sexes and all age groups except pregnancy, appendicular mass were included in the study. Out of 100 cases (68 males and 32 females), 78 patients are clinically positive and 86 are ultrasonographically positive, appendectomy were performed in all cases. Final diagnosis by histopathological report was confirmed in 97 cases. The overall negative appendectomy rate was 3%. Sensitivity and Specificity of USG found to be 95% and 66% respectively.

Keywords: Appendicitis, Appendectomy, Ultrasonography, CT, MRI, Histopathological Examination.

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I. Introduction

Acute appendicitis is the most common cause of an acute abdomen in young adults and as such the associated symptoms and signs have become a paradigm for clinical teaching. Though extraordinary advances in modern diagnostic investigations have been achieved, the diagnosis of acute appendicitis remains essentially clinical, requiring a mixture of observation, clinical acumen and surgical knowledge¹. Sir Heneage Ogilvie said Acute appendicitis is one of the commonest conditions which the surgeon is called upon to treat as an emergency, which requires utmost skill and care of the attending surgeon, besides good clinical evaluation². The treatment of acute appendicitis primarily has remained surgery i.e. appendectomy but depends on the mode of clinical presentation. Presentation of acute appendicitis, though remains the same, age incidence varies from relatively rare in infants to maximum peak incidence in early twenties, more severe form is noticed in extremes of age. Despite the advances in diagnostic medicine and therapeutics over the past forty years, the accurate diagnosis of appendicitis and pain in the right iliac fossa remains a clinical challenge. Even after years of tremendous progress, it is difficult to predict which patient will develop appendicitis. Till today, we don't have any means of preventing appendicitis, though one can definitely prevent dangerous complications by timely surgical intervention³. Copes approach, formulated fifty years ago, was based on clinical acumen and early surgery (Appendectomy) to avoid the risk of peritonitis⁴, and is considered correct by most surgeons even today. A decision made by junior doctors, who often decide on surgery in the emergency room, may be wrong half the time⁵. Negative appendectomy rates at 25-35% are not uncommon, and morbidity rates of a negative appendectomy often parallel those of surgery for acute appendicitis⁶. On the other hand, a delay in diagnosis is associated with increased risk of perforation, which increases the morbidity, mortality and other late complications. To decide between the lesser of the two evils, that is, a negative appendectomy or an appendicular perforation can often be a vexing problem. The need for a diagnostic aid in doubtful cases is recognized. Ultrasonography has been proposed as an ideal noninvasive adjunct to diagnosis in suspected appendicitis cases. Our study included clinical study and management of acute appendicitis and the use of ultrasonography, which has emerged as a useful investigation in improving the accuracy in diagnosis of acute appendicitis and thereby reducing negative appendectomies⁷.

II. Objectives Of The Study

1. To study the different modalities of presentation of acute appendicitis, the diagnosis and its management.
2. To study the role of ultrasonography and to evaluate the sensitivity and specificity of ultrasonography in the diagnosis of acute appendicitis.
3. To study various complications of acute appendicitis and their management.

III. Materials And Methods

Material for this study was obtained from the patients admitted in the Department of General Surgery, GSL medical college and hospital from September 2018 to January 2019, who were diagnosed to be suffering from Acute Appendicitis. Simultaneously follow-up was done for a period of at 30 days. A total of 100 cases were taken for detailed study.

INCLUSION CRITERIA FOR THE STUDY 1. Patients admitted with acute abdomen irrespective of age and sex. 2. Patients diagnosed to be suffering from acute appendicitis provisionally and ultrasonographically.

EXCLUSION CRITERIA FOR THE STUDY 1. Patients admitted with hollow viscus perforation with peritonitis. 2. Appendicular mass. 3. Patients not willing for admission or surgery. 4. Pregnancy

IV. Figures And Tables

TABLE 1- AGE DISTRIBUTION TABLE 2- SEX DISTRIBUTION

Age Group	No of patients	percentage
21-30	17	17%
31-40	25	25%
41-50	33	33%
51-60	14	14%
61-70	11	11%
total	100	100%

SEX	No of patients	percentage
MALE	63	63%
FEMALE	37	37%

Table 3 : Comparison of clinical results with USG

Measurement	Clinical	Ultrasonography
Accuracy	78%	85%
Sensitivity	79.3%	85.57%
Specificity	33.3%	66.6%
PPV	97.4%	97.65%
NPV	4.76%	12.5%

V. Conclusion

The results of our study are summarized as follows: The total number of cases operated were 100 cases Acute appendicitis suspected clinically in 79 cases and sonologically in 86 cases. The ratio of male to female patients was almost 1.63:1. Most cases of acute appendicitis were found in the age group of 11 - 29 years of age. Right iliac fossa pain was found in 91 cases. The rest had atypical pain. Anorexia and Nausea/vomiting were found in 53% and 55% respectively, Fever was present in 46 cases. Total leucocyte count above 10,000 is seen in 55% of cases. The overall accuracy of clinical diagnosis was 78%, sensitivity was 79.3% and specificity was 33.3%. All cases sent for USG, revealed 86 out of 100, sonologically positive. Histopathological examination of the resected appendix proved acute appendicitis (80/100 cases), acute suppurative (11/100 cases) and recurrent appendicitis (6/100 cases) and normal appendix (3/100 cases) 11 USG revealed accuracy of 85%, sensitivity of 85.57% and specificity of 66.6%.

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