



ACCURACY OF CLINICAL DIAGNOSIS IN ACUTE APPENDICITIS

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ABSTRACT **INTRODUCTION:** Acute appendicitis is the most common abdominal emergency. The lifetime risk of developing appendicitis is approximately 7% and is usually required surgical treatment. The clinical diagnosis may be straight forward in patients who present with classical signs and symptoms, atypical presentations may result in Diagnostic confusion and delay in treatment. The delay in early diagnosis lead to disease prognosis, which lead to increase in morbidity of the patient.

MATERIALS AND METHODS: The study was conducted in department of surgery, Maharajah's Institute Of Medical Sciences, during the period of 1 year. All patients operated for appendectomy during that period were included. All the patients complete clinical history and physical examination data were collected. All patients data with operative and discharge record were correlated with the case notes wherever necessary

RESULTS: Even in the most experienced hands the diagnosis of appendicitis can be challenging, and is predominantly a clinical one. Accurate clinical history and physical examination are important to prevent unnecessary surgery and avoid complications. Probability of appendicitis depends on age, clinical settings and symptoms. Application of Alvarado scoring system in diagnosis of appendicitis can provide high degree of positive predictive value and thus diagnostic accuracy.

CONCLUSION: No symptom or sign may be ascribed to acute appendicitis as pathognomonic. Acute appendicitis in emergency setting may be successfully rolled in with high accuracy based on lack of appetite, elevated WBC count. For successful diagnosis through assessment that contains adequate evaluation of laboratory parameters in combination with clinical and radiological findings.

KEYWORDS :

INTRODUCTION

Acute appendicitis is the most common abdominal emergency. The lifetime risk of developing appendicitis is approximately 7% and usually required surgical treatment. Acute appendicitis may occur at any age, although it is relatively rare at the extremes of age.

The clinical diagnosis may be straight forward in patients who present with classical signs and symptoms, atypical presentations may result in Diagnostic confusion and delay in treatment. The delay in early diagnosis lead to disease prognosis, which lead to increase in morbidity of the patient.

Abdominal pain is the primary presenting complaint of patients with acute appendicitis. Central colicky abdominal pain followed by vomiting with migration of the pain to right iliac fossa is present in only 50% of patients. Loss of appetite is often a predominate feature. Constipation and nausea with vomitings may indicate development of peritonitis due to appendicular perforation.

Patients with acute appendicitis usually have low grade fever and appendicular perforation should be suspected if it is high grade fever. Whenever appendicitis is missed there is chance that leading to appendicular perforation, significantly increases morbidity and prolongs hospital stay. Non perforated appendicitis is less than 1 percent of mortality rate which may be as high as 5 percent or more in young and elderly patients. Delay in diagnosis will lead to complications like increased morbidity whereas overzealous diagnosis may lead to negative appendectomy rate.

Aim of the Study

The aim of this study is to assess the diagnostic accuracy of clinical and laboratory parameters in the diagnosis of Acute Appendicitis.

MATERIALS AND METHODS

- **Study Type:** Retrospective study
- **Study Center:** Department of surgery, Maharajah's Institute Of Medical Sciences,
- **Study period:** 1 year, June 2019 to May 2020.
- **Study Subjects :** All patients operated for appendectomy during that period were included.

All the patient's complete clinical history and physical examination data and blood & radiological investigations data were collected. All patients data with operative and discharge record were correlated with the case notes wherever necessary

Exclusion Criteria:

- Age < 14 years
- Appendicular Mass
- Interval Appendectomy cases
- Appendicitis with other abdominal pathologies

RESULTS

A total of 48 cases of acute appendicitis cases for which appendectomy was done and post op histopathology confirmed the diagnosis in the study period.

And the most common presenting complaint in the study is pain in right iliac fossa followed by anorexia. And the most common physical sign in consistent with the study is rebound tenderness other than RIF tenderness

The most common laboratory investigation consistent with study sample is raised WBC count

Table 1: Clinical features

Clinical complaints	No. of cases have it
Right lower quadrant pain	42 (87.5%)
Migratory pain (periumbilical to RIF)	28 (58.3%)
Fever	26 (54.16%)
Nausea	36 (75%)
anorexia	40 (83.3%)
Pain before vomiting	30 (62.5%)
Previous H/o similar complaints	16 (33.3%)

Table 2: Clinical signs

Clinical findings	No. of cases with it
Localised guarding	36 (75%)
Rebound tenderness	40 (83.3%)
Psoas sign	20 (41.6%)
Obturator sign	16 (33.3%)
Rosving sign	30 (62.5%)
Rectal tenderness	24 (50%)



BLUMBERG'S SIGN



PSOAS SIGN



OBTURATOR SIGN

Finding	Points
Migration of pain to RIF	1
Anorexia	1
Nausea and vomiting	1
RIF tenderness	2
Rebound tenderness	1
Elevated temperature (>99 F)	1
Leukocytosis (>11,000)	2
Shift to Left in P.S.	1

Table 3: Alvarado Score

- Patients with a score of ≥ 7 have a high risk of appendicitis
- A score of 6-5 is suspicious of appendicitis
- A score of < 5 is low risk for appendicitis



Figure 1: Alvarado score

In the study 83% of acute appendicitis cases in the study have Alvarado score > 7 Points. 13% of cases have score 5 to 6 points. 4 % of cases have < 5 points.

Clinical Findings	Points
Tenderness in right lower quadrant	4.5
Rebound tenderness	2.5
No difficulty with micturition	2.0
Steady pain	2.0
Leucocytosis ($> 10,000$)	1.5
Age less than 50yrs	1.5
Migration of pain to the right lower quadrant	1.0
Abdominal Rigidity	1.0

Table 4: Ohmann Score

Even in the most experienced hands the diagnosis of appendicitis can be challenging, and is predominantly a clinical one. Accurate clinical history and physical examination are important to prevent unnecessary surgery and avoid complications.

Probability of appendicitis depends on age, clinical signs and symptoms. Application of scoring systems in diagnosis of appendicitis can provide high degree of positive predictive value and thus diagnostic accuracy

DISCUSSION

The symptoms of typical migratory pain and localized signs of peritonitis in the right lower quadrant were much consistent and very much specific to acute appendicitis. The most reliable clinical findings consistent with diagnosis of acute appendicitis were tenderness, guarding, and rebound tenderness.

Voluntary muscle guarding in the right lower quadrant is common and usually precedes the tenderness.

Blood investigations like raised WBC count ($> 11,000$) and shift to left in Lineage of leukocytes in peripheral Smear were found more consistently in 83 % of cases in the study.

C – Reactive protein a biochemical marker for inflammation is not elevated in most of the acute appendicitis cases in the study. CRP did not contribute to the overall diagnostic accuracy acute appendicitis and its protocols is of no value.

The Alvarado and Ohmann Scores alone are not accurate enough to diagnose or exclude appendicitis.

They provide a us risk groups – low risk, moderate risk, high risk for appendicitis

- Low risk – further observation
- Moderate risk – further investigations like imaging
- High risk – surgical evaluation

Traditional clinical diagnosis for acute appendicitis may not present with the 'classical' appendicitis symptoms and signs. In such cases clinical history and clinical findings only may not help in diagnosing.

Patients with atypical symptoms and signs were to be admitted to hospital for a period of observation, laboratory tests and medical imaging have to be done for acute appendicitis.

CONCLUSION

No symptom or sign maybe ascribed to acute appendicitis as pathognomonic. Acute appendicitis in emergency setting may be successfully ruled in with high accuracy based on anorexia, Rebound Tenderness, elevated WBC count.

For successful diagnosis through assessment that contains adequate evaluation of laboratory parameters in combination with clinical and radiological findings have to be done.

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