

ROLE OF CT SCAN IN DIAGNOSIS OF ACUTE APPENDICITIS

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Article Info: Received 10 April 2019; Accepted 29 April. 2019

Cite this article as: S., Meena, D., & Meena, G. L. (2019). ROLE OF CT SCAN IN DIAGNOSIS OF ACUTE APPENDICITIS. *International Journal of Medical and Biomedical Studies*, 3(5).

DOI: <https://doi.org/10.32553/ijmbs.v3i5.231>

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Conflict of interest: No conflict of interest.

Abstract

Background: To evaluate the diagnostic accuracy of the spiral-CT in patients with clinically suspected acute appendicitis.

Methods: Appendiceal spiral-CT was performed in 50 patients (21 women and 29 men) with clinically suspected acute appendicitis. Scans were obtained from the L4 level to the symphysis pubis using 5 mm collimation without i.v., oral, or rectal contrast material. Prospective diagnoses based on CT findings were compared with histopathological results

Results: In our study appendix diameter test sensitivity was 97.56%, specificity was 77.78 %, positive predictive value was 95.27%, negative predictive value was 87.50% and diagnostic accuracy was 94.00%.

Conclusion: The accuracy of computed tomography in diagnosing acute appendicitis was high. The results emphasize the role of computed tomography as an accurate modality in daily routine diagnostics for acute appendicitis in all clinical emergency settings.

Key words: Appendicitis, CT scan, Accuracy.

Introduction:

Appendicitis should be considered in any person with undiagnosed abdominal pain. The incidence peaks between the ages 15 and 24. The concept that right lowers quadrant pain in women of childbearing age is more complex clinical problem than in men and they historically had higher rates of negative laparotomy.¹ Anderson reported decreased diagnostic accuracy for appendicitis among women, particularly in the third decade of life.² Clinical diagnosis of appendicitis is usually made on the basis of history, physical examination and laboratory studies but a variety of approaches have been used for diagnosis including ultrasound, helical computerized tomography (CT), clinical scoring systems, and neural network.³ However, approximately 20-35% of patients with suspected appendicitis present with diagnostic dilemma mainly in the extremes of life, ovulating females and young children.⁴

Aim of this study was to to evaluate the diagnostic accuracy of the spiral-CT in patients with clinically suspected acute appendicitis.

METHODS

Appendiceal spiral-CT was performed in 50 patients (21 women and 29 men) with clinically suspected acute appendicitis. Scans were obtained from the L4 level to the symphysis pubis using 5 mm collimation without i.v., oral, or rectal contrast material. Prospective diagnoses based on CT findings were compared with histopathological results and clinical follow-up.

The criteria used to diagnose acute appendicitis were: (a) a thickened appendix of more than 7 mm or (b) inflammatory changes in the periappendiceal fat.

If the CT findings were negative for acute appendicitis and surgery not performed, the results were

correlated with other corroborating diagnostic investigations or clinical follow-up **RESULTS**

Table 1 : Diameter of appendix in CT scan

Diameter of appendix in CT scan	No. of patients	Percentage
Diameter <6 MM	8	16.00%
Diameter >6 MM	42	84.00%
Mean diameter of appendix in CT scan	7.61±1.43 mm	

In our study mean diameter of appendix in CT scan was 7.61±1.43 mm. <6mm diameter was consider as normal.

Table 2 : Correlation between appendix diameter and histopathological findings

Appendix diameter	Histopathology		Total
	Normal	Abnormal	
>6 mm	2	40	42
≤6mm	7	1	8
Total	9	41	100

In our present study 94% of the diameter of appendix test are true whether level was raised or it was normal only 6% of the tests done for diameter of appendix done estimation gave false report.

Table 3 : Diagnostic accuracy of appendix diameter

Sensitivity	97.56%
Specificity	77.78%
Positive predictive value	95.27%
Negative predictive value	87.50%
Diagnostic accuracy	94.00%

In our study appendix diameter test sensitivity was 97.56%, specificity was 77.78 %, positive predictive value was 95.27%, negative predictive value was 87.50% and diagnostic accuracy was 94.00%.

DISCUSSION

Appendicitis needs to be considered in the differential diagnosis of almost every patient with acute abdominal pain⁵. Early diagnosis remains the most important goal in these patients and is made in most cases based only on history and clinical examination. The typical presentation begins with

periumbilical pain due to irritation of visceral nerves. Followed by anorexia and nausea. The pain then localizes to right lower quadrant as inflammatory process involves parietal peritoneum overlying appendix. Fever ensues, followed by development of leukocytosis.

In present study, out of total 100 patients 82.00% were have positive HPE finding and 18.00% were have negative HPE finding. Similar result were observed by Rasoul,et al⁶ and Kimaro,S.et al⁷.

CONCLUSION

The accuracy of computed tomography in diagnosing acute appendicitis was high. The results emphasize the role of computed tomography as an accurate modality in daily routine diagnostics for acute appendicitis in all clinical emergency settings.

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