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ORIGINAL ARTICLE

Correlation between ultrasonographic and surgical findings in acute appendicitis patients

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ABSTRACT:

Background: Surgical and medical professionals still struggle with acute stomach pain. Acute appendicitis is a common cause of both abdominal pain and surgical crises. The present study assess correlation between ultrasonographic and surgical findings in patients with acute appendicitis. **Materials &Methods**: 70 adult patients of either gender reporting with acute appendicitis underwent USG with portable 3.5 MHZ sector probe and a 5 MHZ sector probe scan of the right lateral quadrant. **Results:** Out of 70 patients, males were 45 and females were 25. Common findings were fever seen in 34 patients, nausea/ vomiting in 56, RLQ tenderness in 62, rebound tenderness in 45, shift in pain in 28 and loss of appetite in 51 patients. Position of appendix was subcecal in 5, pre- ileal in 2, pelvic in 14, retrocecal in 46, post- ileal in 2 and subhepatic in 1 patient. Sonographic diagnosis was positive in 65 and negative in 5 cases. The difference was significant (P< 0.05). **Conclusion:** In addition to clinical findings, ultrasonography has a defined role and is the best non-invasive approach for treating acute appendicitis.

Keywords: Acute appendicitis, subhepatic, Ultrasonography

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INTRODUCTION

Surgical and medical professionals still struggle with acute stomach pain. Acute appendicitis is a common cause of both abdominal pain and surgical crises.[1] Appendicitis patients exhibit a wide range of clinical signs, some of which may be mistaken for symptoms of other illnesses. A small number of alternative diagnoses typically allow for a high degree of diagnostic accuracy in young men.[2] On the other hand, acute gynecological infections, which closely resemble acute appendicitis, are frequently seen in young women. If appendicitis is not treated, it can rupture and result in potentially deadly complications, particularly in youngsters and the elderly. Appendicitis is a surgical emergency.[3]

Acute appendicitis patients usually present with diffuse abdominal pain or with central abdominal pain that shifts to the right lower quadrant (RLQ). It is common for children to vomit. Signs of an acute intra-abdominal process can be seen on a clinical examination.[4] These include cutaneous hyperesthesia, muscle guarding, rebound and localized discomfort, and rectal tenderness.The use of ultrasonography as a diagnostic tool for individuals with acute appendicitis has been the subject of several publications.[5]A blind-ended, non-compressible, aperistaltic tube with a diameter greater than 6 mm that emerges from the tip of the cecum and has a gut signature is one of the five ultrasonographic criteria for acute appendicitis. Regardless of appendiceal diameter, the visualization of an appendix with an appendicolith is likewise considered a positive test. On ultrasonography, a healthy appendix can, nevertheless, also be seen.[6,7] The present study assessed correlation between ultrasonographicand surgical findings in patients with acute appendicitis

MATERIALS &METHODS

The present study was conducted on 70 adult patients of either gender reporting with acute appendicitis. All patients gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Recorded were parameters like the complaints that were brought forward, their length, intensity, symptom beginning order, progression, pattern change at the time of presentation, and so on. Using a graded compression approach, a portable 3.5 MHZ sector probe and a 5 MHZ sector probe scan of the right lateral quadrant was used to perform the ultrasonographic examination.The results were subjected to statistical analysis. P value less than 0.05 was set significant.

RESULTS

Table I Patients distribution

Total- 70		
Gender	**Male**	**Female**
Number	45	25

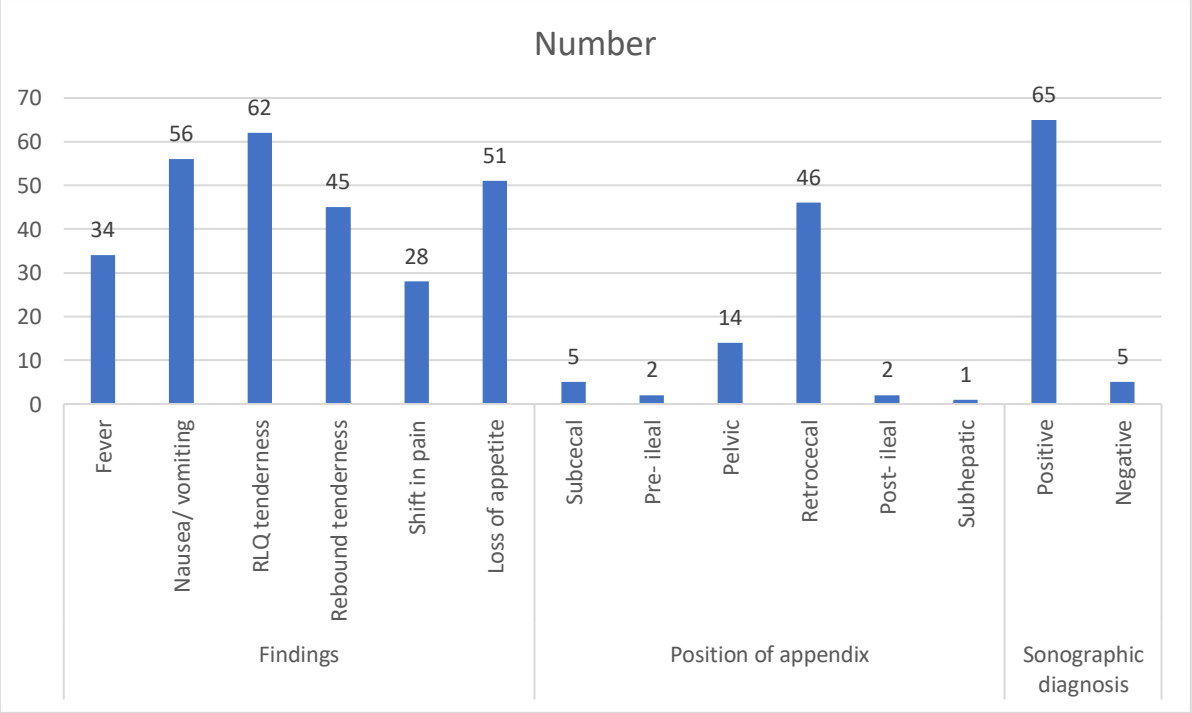
Table I shows that out of 70 patients, males were 45 and females were 25.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Findings	Fever	34	0.05
	Nausea/ vomiting	56	
	RLQ tenderness	62	
	Rebound tenderness	45	
	Shift in pain	28	
	Loss of appetite	51	
Position of appendix	Subcecal	5	0.01
	Pre- ileal	2	
	Pelvic	14	
	Retrocecal	46	
	Post- ileal	2	
	Subhepatic	1	
Sonographic diagnosis	Positive	65	0.04
	Negative	5	

Table II, graph I shows that common findings were fever seen in 34 patients, nausea/ vomiting in 56, RLQ tenderness in 62, rebound tenderness in 45, shift in pain in 28 and loss of appetite in 51 patients. Position of appendix was subcecal in 5, pre- ileal in 2, pelvic in 14, retrocecal in 46, post- ileal in 2 and subhepatic in 1 patient. Sonographic diagnosis was positive in 65 and negative in 5 cases. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

A patient with appendicitis typically presents with a usual series of symptoms, including poorly localized periumbilical pain.[8,9] Only 50–60% of patients have this conventional presentation, and when unusual patterns of disease are seen, the diagnosis may go unnoticed or be delayed. Atypical symptoms are seen in about one-third of people with acute appendicitis.[10,11] The spectrum of differential diagnosis encompasses several conditions such as

acute cholecystitis, renal colic, ovarian and tubal disorders, gastroenteritis, mesenteric lymphadenitis, and peptic ulcer.[12,13]The present study assess correlation between ultrasonographicand surgical findings in patients with acute appendicitis

We found that out of 70 patients, males were 45 and females were 25.Puylaert et al[14] conducted a prospective study on 111 consecutive patients who were suspected of having appendicitis to examine the diagnostic accuracy and clinical significance of abdominal ultrasonography. Using tiny, high-resolution linear array transducers, abdominal compression was used to move or compress fat and bowel during the ultrasonography procedure. Of the 52 patients who underwent surgery and were later found to have appendicitis, 39 had a clear positive result on ultrasonography (sensitivity: 75%). None of the 31 individuals whose appendicitis was conclusively ruled out underwent a positive ultrasonography examination (specificity, 100%). The sensitivity was significantly lower in patients with a perforated appendix (28.5%) compared to those with acute non-perforating appendicitis (80.5%) or appendiceal mass (89%). However, since patients with a perforated appendix require surgery, the low sensitivity had no effect on clinical management.Out of the 111 patients, 29 (or 26%) had their recommended management altered as a result of ultrasonography. In the 16 patients who turned out to have a condition other than appendicitis, it also resulted in the accurate diagnosis. They came to the conclusion that appendicitis can be diagnosed with the help of ultrasonography.

We observed that common findings were fever seen in 34 patients, nausea/ vomiting in 56, RLQ tenderness in 62, rebound tenderness in 45, shift in pain in 28 and loss of appetite in 51 patients. Position of appendix was subcecal in 5, pre- ileal in 2, pelvic in 14, retrocecal in 46, post- ileal in 2 and subhepatic in 1 patient. Sonographic diagnosis was positive in 65 and negative in 5 cases. Patra et al[15] assessed the clinical and ultrasonographic diagnostic accuracies in 38 individuals with acute appendicitis. Patients aged 20 to 29 were shown to have an increased incidence of acute appendicitis (37% in prospective studies and 42.9% in retrospective studies, respectively). In both prospective and retrospective trials, the Modified Alvarado score (MAS) demonstrated sensitivity of 47.7% and 59.6%, and specificity of 87.5% and 91.6%, respectively. In both prospective and retrospective investigations, the results of ultrasonography revealed sensitivity of 82.1% and 92.7%, and specificity of 76.4% and 72.7%, respectively.

The effectiveness and clinical value of appendix ultrasonography were evaluated by Franke et al[16] during a standard clinical examination. An appendix ultrasound was conducted on 870 patients (38%) (range: 16-85%). With regard to appendix ultrasonography, the overall sensitivity ranged from 13 to 90%, the specificity from 82 to 100%, the positive predictive value from 50 to 100%, and the negative predictive value from 68 to 96%. In terms of the results of a single ultrasound scan, only the target phenomenon (44%) was found to have appropriate sensitivity; the other criteria did not. There was no relationship found between the appendix's ultrasound results and the clinician's diagnostic accuracy, the rate of unsuccessful appendicemas, or the rate of perforated appendices.

CONCLUSION

Authors found that in addition to clinical findings, ultrasonography has a defined role and is the best non-invasive approach for treating acute appendicitis.

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