



## ORIGINAL RESEARCH PAPER

## General Surgery

### COMPARISON OF ULTRASONOGRAPHIC AND COMPUTED TOMOGRAPHIC FINDINGS IN THE DIAGNOSIS OF ACUTE APPENDICITIS

#### KEY WORDS:

**Adnan Sahin**

Eskisehir Osmangazi University, Department of General Surgery, Eskisehir/TURKEY

**Bartu Badak\***

Eskisehir Osmangazi University, Department of General Surgery, Eskisehir/TURKEY  
\*Corresponding Author

#### ABSTRACT

Acute appendicitis (AA) is the most commonly performed emergency abdominal surgery. The aim of this study was compare advantages, accuracy and limitations USG (ultrasonography) and CT (Computed tomography) in the definitive diagnosis of AA.

#### Introduction:

Acute appendicitis is the the most common urgent abdominal surgery worldwide. (1) Acute appendicitis patients often present with a characteristics symptom complex. But symptoms and findings may not always typical. Missed or delayed diagnosis can lead to complications like perforation or morbidity. (2) Patients with acute appendicitis are mainly managed on the basis of disease history, physical examination and laboratory findings like total white blood cell (WBCs), C-reactive protein, granulocytes.. Although most studies show an great association with elevated WBCs and acute appendicitis it may have variable situations according to the patients. (3) Current advanced imaging methods for diagnosis acute appendicitis are ultrasonography, computed tomography and magnetic resonance imaging. But these techniques are not adequate and cost effective.

#### Material and Methods:

The hospital records of 117 patients with a preliminary diagnosis of AA who underwent appendectomy surgery between 2017 January1-2018 January 31 in Eskisehir Osmangazi University General Surgery Department were reviewed retrospectively. We researched that patients preoperative CT and abdominal ultrasonography (USG) findings were correlated that with the results of postoperative pathologic results. We evaluated the efficacy of radiological examinations in the diagnosis.

#### Results:

In the 71 of 117 patients (60.6%) postoperative pathologic results were reported as appendicitis. The diagnosis of appendicitis was made using only USG in 59 patients (83.03%). The number of patients diagnosed with only CT was 12 (1.4%), and all of the patients had the diagnosis with both tests. 54 of the 71 patients who had diagnosed AA with USG prior to surgery, postoperative pathologic diagnosis were reported as appendicitis. 68 of the 71 patients who had diagnosed AA with CT before surgery, postoperative pathologic diagnosis were reported as appendicitis. When the radiological tests were compared with the postoperative pathologic results; the positive predictive value ultrasound and CT were 84,72% and 89,18% respectively. The accuracy of USG and CT were 77,78% and 86,99% respectively.

	Predictivity	Accuracy
USG	%84.72	%77.78
CT	%89.18	%86.99

#### Discussion:

AA is the most common acute abdomen surgery in all age groups worldwide. Although classical symptomatology in diagnosis of AA are well known , it can be difficult to examine the causes of abdominal pain. (4) Emerg Med Int 2012;2012:823095. The pain which was mostly localized than generalized is the most symptom in AA patients. (%98.27) Second most common symptom for AA patients is vomiting (%76.8) followed by anorexia (%72.9), nausea (%55), fever (%49.1), diarrhea (%4.8) and dysuria (%3.1). (5) AA is an inflammatory process. Among this many clinicians use

biomarkers for diagnosis. WBCs is the most common marker in inflammatory processes and also in AA. (6)

In USG examination for AA diagnosis measurement of posteroanterior diameter is very important. If the diameter is less than 5mm, the diagnosis of appendicitis is avoided. The diameter of the inflamed appendicitis is greater than 6mm. If the diameter of the appendicitis is less than 5 mm, it is definitely not appendicitis. (7) The findings supporting the appendicitis in CT were increased appendiceal diameter, increase in periappendicular fat density, appendicolite, fluid collections and lymphadenopathy. The findings supporting the appendicitis in CT were increased appendiceal diameter, increase in periappendicular fat density, appendicolite, fluid collections and lymphadenopathy. (8) In the study of Behzatoğlu et al., the sensitivity of usg and bt was found to be 73% and 96% accuracy 86% and 94%, respectively. (9) In our study, US and CT results were compared; sensitivity %84.72 versus %89.18, accuracy %77.78 vs %86.99 is in favor of bt. The results were evaluated in accordance with the literature findings. As a result patients history and physical examination are important in the diagnosis of AA. However, imaging methods should be used for the cases. As a result of our study CT was intended to be superior to USG in the diagnosis of AA.

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