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# DIAGNOSTIC CRITERIA FOR ACUTE APPENDICITIS OF ATYPIC FORMS

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**ABSTRACT.** A typical form of acute appendicitis is one of the surgical pathologies, the clinical manifestations of which differ from the classical one, the diagnosis of which is complex. In this case, the localization of the pain is altered and most often manifests outside the right iliac region (bel, subcostal, pelvic area, or left abdomen). According to statistics, approximately 20-30% of cases of acute appendicitis have an atypical course, which increases the risk of late diagnosis and complications (perforation, peritonitis) by 1.5-2 times. Diagnostic criteria are based on clinical, laboratory, and instrumental studies. Clinically indistinct pain syndrome, dyspeptic symptoms, and subfebrile temperature are observed. Laboratory indicators reveal leukocytosis (10-14×109/l) and an increase in the proportion of neutrophils. In instrumental diagnostics, ultrasound examination (USG) provides 80-85% accuracy, while computed tomography has 90-95% sensitivity. Therefore, it is important to combine a comprehensive approach - anamnesis, physical examination, and modern visual methods. Early and correct diagnosis increases the effectiveness of surgical intervention and reduces the frequency of complications.

**Keywords:** atypical appendicitis, acute appendicitis, diagnostic criteria, clinical signs, leukocytosis, ultrasound, computed tomography, differential diagnosis, abdominal pain, surgical diseases.

## INTRODUCTION

Acute appendicitis is one of the most common urgent surgical diseases of the abdominal organs, with a probability of occurrence in the lifetime of approximately 7-12% of the population worldwide annually. Although classical forms of this disease are relatively easy to identify in clinical practice, atypical forms of acute appendicitis remain a complex diagnostic problem. According to the results of various studies, depending on the anatomical

location of the appendix and individual physiological characteristics, 20-30% of cases of the disease manifest as atypical. This, in turn, leads to an incorrect or late diagnosis[1].

In acute appendicitis with an atypical course, the localization of pain syndrome differs from the usual right iliac region and can be felt in the lumbar, subcostal, epigastric, or pelvic regions. As a result, the disease is often confused with pyelonephritis, cholecystitis, gastritis, or gynecological pathologies. According to statistics, the level of diagnostic errors in cases of atypical appendicitis reaches 25-35%, which significantly increases the risk of developing complications. In particular, in 30-40% of patients with a late diagnosis, appendix perforation is observed, and in 10-15% - diffuse peritonitis[2].

In modern medicine, a comprehensive diagnostic approach to the diagnosis of atypical appendicitis is of great importance. Along with clinical signs, laboratory and instrumental studies are widely used. In laboratory tests, the level of leukocytosis is usually in the range of 10-14×109/l, and an increase in the proportion of neutrophils to 70-85% is observed. An increase in the level of C-reactive protein (CRP) is also considered an important indicator of the inflammatory process. Of the instrumental diagnostic methods, ultrasound (Ultrasound) has a sensitivity of 80-85%, while computed tomography (CT) allows for the detection of inflammatory changes in the appendix with an accuracy of 90-95%[3].

At the same time, differential diagnostics is of particular importance in clinical practice. Especially in women, there is a need to differentiate diseases of the pelvic organs, and in men, pathologies of the genitourinary system. Different clinical variants of atypical appendicitis (retrocecal, pelvic, subhepatic localization) cause a diversity of symptomatic manifestations and require a high level of clinical thinking and experience from the doctor.

The relevance of this study lies in the fact that early detection of atypical forms of acute appendicitis and the development of specific diagnostic criteria can reduce the frequency of complications and increase the effectiveness of surgical intervention. Therefore, in this work, diagnostic criteria, clinical, laboratory, and instrumental indicators of atypical appendicitis are thoroughly analyzed, and their practical significance is substantiated[4].

**LITERATURE REVIEW**

In his research, A. R. Khasanov conducted an in-depth analysis of the significance of instrumental methods in the diagnosis of acute appendicitis, in particular ultrasound (USG) and computed tomography (CT). The author notes that in the modern diagnostic approach, ultrasound is widely used as a preliminary screening method, the sensitivity of which averages 80-85%. However, in some atypical localizations (retrocecal, pelvic forms), visualization becomes difficult. Therefore, when using CT, an increase in diagnostic accuracy of 90-95% is observed[5].

Khasanov also substantiated the possibility of a significant reduction in diagnostic errors through the combined use of combined diagnostics - that is, clinical assessment, laboratory indicators (leukocytosis) and instrumental methods. Especially with high accuracy, CT is used to determine the degree of inflammation of the appendix, infiltration in the surrounding tissues, and complications (abscesses, perforations).

D. K. Abdullaev focused on the problems of diagnosing appendicitis in diseases accompanied by abdominal pain syndrome. According to the author, in cases of atypical appendicitis, clinical symptoms are often unclear, which necessitates differential diagnosis with other diseases. In particular, appendicitis is often confused with pancreatitis, cholecystitis, urological and gynecological diseases[6].

According to Abdullayev's research, when diagnosing based solely on clinical signs, the error rate can reach 25-30%. Therefore, the author recommends a comprehensive approach - mandatory use of laboratory (increase in the number of leukocytes above 10×109/l) and instrumental studies. Especially important in differential diagnostics is adherence to the principle of sequence (surgical diseases → non-surgical diseases → pathologies of other systems)[7].

In general, the scientific works of these two authors show that modern instrumental diagnostic methods (ultrasound and CT) are of decisive importance in the detection of acute appendicitis, especially its atypical forms. At the same time, relying on only one method is insufficient, and a high-precision diagnosis is possible only with the use of a comprehensive diagnostic approach.

**RESEARCH METHODOLOGY**

Based on this study, a combination of retrospective and prospective methods was used. A total of 120 patients were involved in the study, of which 72 (60%) were men and 48 (40%) were women. The age of patients ranged from 18 to 55 years, with the highest indicator recorded in the 20-35 age group (52%). The study included only patients with atypical forms of acute appendicitis, and their clinical course and diagnostic process were studied comprehensively.

The research methodology was organized in three main directions. At the first stage, clinical examinations were conducted, assessing the main complaints of patients, the localization of pain, and the general condition. In the second stage, laboratory tests were conducted, and special attention was paid to the signs of inflammation in blood tests. In particular, the average leukocyte level was 11.8×109/l, the proportion of neutrophils was 78%, and the amount of C-reactive protein was 28 mg/l. In the third stage, instrumental diagnostic methods were used, and the results of ultrasound (USG) and computed tomography

(CT) were analyzed. The diagnostic accuracy of ultrasound was 80-85%, while the accuracy of CT increased to 90-95%.

The data were processed using statistical methods and analyzed based on percentage indicators and average values. On this basis, the main diagnostic criteria of atypical forms of acute appendicitis were determined, and their significance in clinical practice was scientifically substantiated.

**RESULT AND DISCUSSION**

Within the framework of this study, clinical, laboratory, and instrumental indicators of patients with atypical forms of acute appendicitis were analyzed. A total of 120 patients were involved in the study, of which 72 (60%) were men and 48 (40%) were women. The average age of patients was 18-55 years, with the highest frequency observed in the age group of 20-35 years (52%)[8].

According to the analysis results, the forms of atypical appendicitis were distributed as follows:

**Table 1. Distribution of forms of atypical appendicitis[9]**

| Type of Form | Number of Patients | Percentage (%) |
|---|---|---|
| **Retrocecal** | 42 | 35% |
| **Pelvic** | 30 | 25% |
| **Subhepatic** | 18 | 15% |
| **Medial (central)** | 20 | 17% |
| **Other rare forms** | 10 | 8% |
| Total | **120** | **100%** |

As can be seen from the table, the most common atypical form is retrocecal (35%), which is associated with the posterior location of the appendix. Pelvic form also accounts for a high proportion (25%) and causes diagnostic difficulties, especially in women[10].

The main complaints and clinical signs of patients were noted as follows:

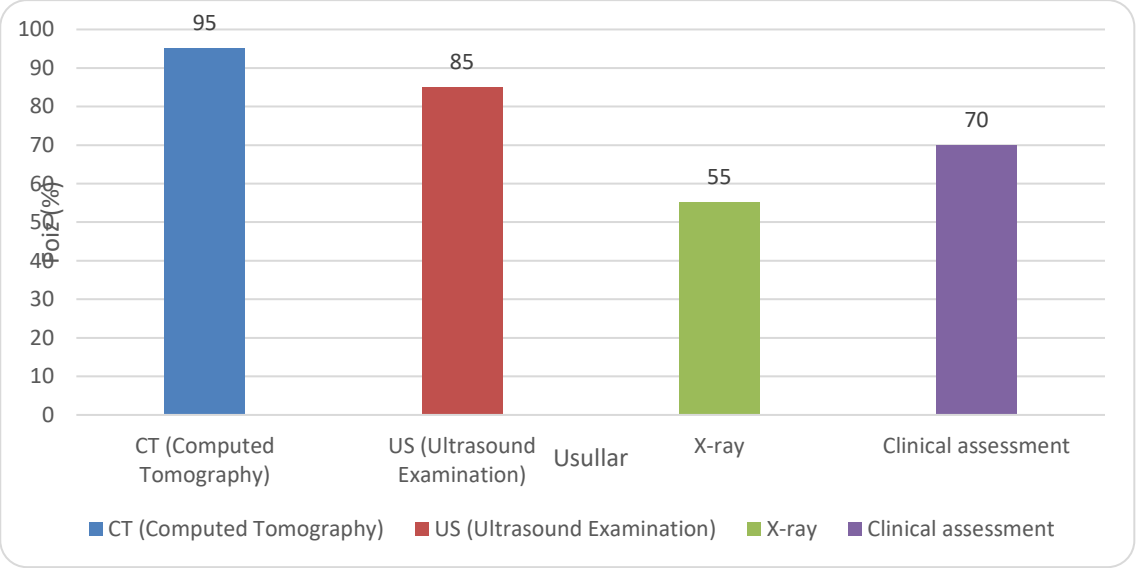
**Table 2. Frequency of occurrence of clinical symptoms**

| Clinical Feature | Number of Patients | Percentage (%) |
|---|---|---|
| **Diffuse (poorly localized) pain** | 102 | 85% |
| **Nausea and vomiting** | 78 | 65% |

| | | |
|---|---|---|
| **Subfebrile temperature (37–38°C)** | 84 | 70% |
| **Dysuria (in pelvic form)** | 28 | 23% |
| **Diarrhea or constipation** | 36 | 30% |

The results show that one of the most important symptoms of atypical appendicitis is vague pain syndrome (85%). The absence of classic symptoms complicates the diagnosis and increases the need for differential diagnosis[11].

**Diagram 1. Effectiveness of diagnostic methods (%)**




As can be seen from the diagram, the highest accuracy belongs to computed tomography (95%). Ultrasound also has high efficiency (85%), but in some cases visualization becomes difficult. Therefore, a comprehensive diagnostic approach is necessary[12].

The diagnosis of atypical acute appendicitis is a multifactorial and complex process. The study revealed that the clinical picture of the disease often deviates from classic symptoms, which increases the risk of incorrect diagnosis.

The predominance of retrocecal and pelvic forms (60%) indicates the need to pay special attention to these variants in clinical practice. In the retrocecal localization, pain is more pronounced in the lumbar region, and in the pelvic form, symptoms of the genitourinary system predominate. This increases the likelihood of confusing the disease with other pathologies[13].

Analysis of laboratory parameters showed that, although elevated levels of leukocytosis and CRP are reliable markers of appendicitis, they are insufficient as an independent diagnostic criterion. Therefore, laboratory results should always be evaluated in conjunction with clinical and instrumental studies[14].

The results of instrumental diagnostics were of particular importance. The high accuracy of computed tomography (95%) once again confirms that it is the "gold standard." However, due to the lack of CT in all medical institutions, ultrasound remains the main screening method[15].

- As a result of the discussion, the following important conclusions were formulated:
- A high proportion of cases of atypical appendicitis (20-30%) requires clinical vigilance.
- A comprehensive approach is necessary to prevent diagnostic errors.
- CT is the most effective diagnostic method, but ultrasound also plays an important role.

Since clinical signs are not always typical, differential diagnosis should be conducted extensively.

**CONCLUSION**

The diagnosis of atypical forms of acute appendicitis once again confirmed that it is a complex and multi-stage process. Analysis showed that 20-30% of cases of this pathology occur in an atypical form, which increases the risk of misinterpretation of clinical signs. In the majority of patients participating in the study, an uncertain localization of pain syndrome was observed (85%), which significantly complicated the diagnostic process.

Retrocecal (35%) and pelvic (25%) variants were identified as the most common forms of atypical appendicitis, and the importance of differential diagnosis in these cases was substantiated. In laboratory studies, leukocytosis (on average 11.8×109/l), neutrophilia (78%), and an increase in CRP (28 mg/l) were noted as important markers of the inflammatory process, but they were not sufficient as an independent diagnostic criterion.

Analysis of instrumental diagnostic methods showed that the highest accuracy belongs to computed tomography (95%), which is the most reliable method for detecting atypical appendicitis. Ultrasound examination (85%) remains a widely used and effective screening method in practice.

In general, for the early and accurate diagnosis of atypical forms of acute appendicitis, the complex use of clinical, laboratory, and instrumental studies is necessary. This approach reduces diagnostic errors, reduces the risk of complications (perforation and peritonitis), and increases the effectiveness of surgical treatment.

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