Capter 151

Semiological signs for the diagnosis of acute appendicitis: case report and literature review

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ABSTRACT
Inflammation of the vestigial vermiform appendix is one of the main causes of acute abdomen in emergency departments. Clinical manifestations may vary according to the patient's age, position and size of the appendix. The diagnosis is eminently clinical, and may present laboratory and imaging alterations, contributing to diagnostic confirmation. In view of the variety of clinical manifestations and differential diagnoses of the acute abdomen, the diagnosis can be challenging. Considering that the late recognition of this condition can lead to serious complications, one should be clear about the possible clinical, laboratory and imaging findings. With that, the objective of this work was to present a clinical case and a review of the literature on the clinical findings present in acute appendicitis, contributing to the early diagnosis. To support the work, current bibliographical references were used, searching for articles in the PubMed, Scielo and Lilacs databases.

Keywords: Appendicitis, Appendicectomy, Appendicitis/ diagonais, Posição Examination, Laparoscopy/classification.

1 INTRODUCTION

Acute appendicitis is one of the most common surgical emergencies worldwide. Therefore, appendectomy is one of the most frequently performed procedures and represents an important cost for the Health Systems. It mainly affects individuals in the second and third decades of life, being less common in the two extremes of age. Most studies show a slight male predominance. [1]

The typical clinical picture of appendicitis is characterized by abdominal pain, initially in the epigastric region and radiating to the periumbilical region, which after a few hours is located in the right

iliac fossa, associated with nausea, vomiting and hyporexia. However, the manifestations may vary according to the position and size of the appendix and the age of the patient. Semiological signs must be recognized and tested to aid in the diagnosis. [2, 3]

Given the variety of clinical presentation, the diagnosis of appendicitis is often challenging. The diagnosis must be made by clinical, laboratory and radiological findings. However, the use of diagnostic imaging such as abdominal ultrasound (US), computed tomography (CT) or magnetic resonance imaging (MRI) is still controversial. [4]

The most recent evidence shows that laparoscopic appendectomy is the most effective surgical treatment, being associated with a lower prevalence of surgical wound site infection and lower post-intervention morbidity, shorter hospital stay and better quality of life scores when compared to laparoscopic appendectomy. open appendectomy. [4]

Laparoscopy allowed better visualization of the abdominal cavity and the appendix, as well as its inflammatory manifestations. Thus, it is possible to identify the clinical-surgical stages of appendicitis, classify it according to its stage of evolution and consequently assess its severity and prognosis. Appendicitis is classified as Grade 0 when the appendix is normal; Grade 1 if there is hyperemia and edema; Grade 2 in the presence of fibrinous exudate; Grade 3 if there is segmental necrosis; Grade 4A presence of abscess; Grade 4B regional peritonitis; Grade 4C necrosis of the base of the appendix and Grade 5 when there is diffuse peritonitis [11].

The importance of this case report is based on the relevance of the clinical findings for the diagnosis of acute appendicitis, since the patient will not always present alterations in the complementary exams. In addition, it aims to reinforce the importance of early diagnosis in order to avoid possible complications. The objective of this study was to present a clinical case of severe acute appendicitis and to carry out a literature review regarding the semiological signs associated with appendicitis and, therefore, to help in the early diagnosis. Acute surgical abdomen of inflammatory origin demands a high degree of diagnostic suspicion – in order not to postpone the indication of surgery and to avoid morbidity and mortality resulting from delay in treatment.

2 CLINICAL CASE REPORT

Patient HVL, female, leukodermic, 72 years old, sought medical assistance at the Emergency Room complaining of hyporexia, vomiting and severe pain in the right iliac fossa for two days. She reported a previous colectomy due to complicated acute diverticulitis. Hypertensive patient using enalapril 10mg, atenolol 50mg and sertraline 50mg. The patient took only 1 pill/day. On physical examination, she was in an antalgic position, with a positive McBurney sign, Rovsing sign and iliopsoas sign. In laboratory tests, she showed an increase in leukocytes 15,490 uL, neutrophils 12,950 uL, CRP of 123.92 mg / L and blood glucose of 130 mg / dL. The computed tomography scan showed an enlarged cecal appendix, measuring around 17mm, with two appendices inside, which measured around 10mm and 6mm, with significant

densification of the adjacent fat and a minimal amount of periappendiceal fluid. The patient underwent laparoscopic appendectomy. At laparoscopy, an acute perforating appendicitis was visualized, with “loose” fecalith in the cavity and, in addition, peritonitis in the flank and pelvic region. After analyzing the inflammatory findings, it was classified as Grade IV appendicitis. Appendectomy was performed by videolaparoscopy and the material was sent to anatomopathological examination. The patient recovered well without complications and was discharged after two days of observation. The anatomopathological result revealed acute suppurative appendicitis.

Figure 1- Tomography of the abdomen showing the cecal appendix with increased caliber and appendicolith inside.

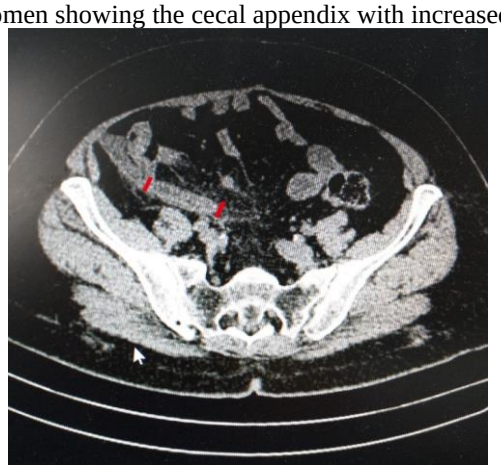

Figure 2- Perforated appendix with coprolite

3 DISCUSSION

Inflammation of the vermifoma appendix is one of the most common causes of an acute abdomen and, like any acute abdomen, requires immediate intervention. One of the main causes of appendicitis is appendicular obstruction, which is caused by fecalith, calculi, infectious processes and benign or malignant tumors [5]. In young patients, the most prevalent cause is lymphoid follicular hyperplasia due to infection, while in older patients the obstruction is usually caused by fibrosis, fecaliths or neoplasms [5].

The classic clinical picture of appendicitis is defined by abdominal pain, which is initially located in the periumbilical region and later migrates to the right iliac fossa (RIF), often accompanied by anorexia, nausea and vomiting. In addition, the patient may have changes in bowel habits and low fever. When the appendix is in an unusual position, such as in the retrocecal and pelvic regions, the clinical presentation may be atypical. At the extremes of age, symptoms may be more silent, thus making diagnosis difficult [5, 10].

In addition to these clinical manifestations, on physical examination it is possible to find some alterations that may contribute to diagnostic elucidation. Among the physical examination findings that may characterize acute appendicitis, the maximum pain is found at McBurney's point, located in the distal third of a line drawn between the superior iliac crest and the umbilicus. When there is pain on sudden decompression, it is called Blumberg's sign, indicating that there is irritation of the parietal peritoneum. Although often present, this sign is not very specific, as it can be present in any process of peritoneal irritation [8].

The Rovsing sign, in turn, refers to pain in the right iliac fossa (RIF) with palpation of the left iliac fossa, as it causes distention of the cecum with the retrograde displacement of gases, also indicating peritoneal irritation [8].

When the appendix is retrocecal, passive hip extension can cause pain in the RIF, called the iliopsoas sign. In these cases, the inflamed appendix is in contact with the psoas muscle, making it more shortened and thus making hip extension difficult. When the location is pelvic, the inflamed appendix is in contact with the right obturator internus muscle. Thus, the patient will manifest pain in the RIF with flexion and internal rotation of the hip, a maneuver called the Obturator sign [8].

Other signs that may still be present are Dunphy's sign, in which the patient manifests pain in the DIF when coughing, and Lenander's sign, which demonstrates an inflammatory process when the difference in axillary and rectal temperature is greater than 1°C [9]. Lapinsky's sign: pain on compression of the RIF while raising the stretched right lower limb. Also present in the retrocecal appendix. Martorelli's sign: Referred pain in the abdomen when percussing the heel

Although individually these signs do not confirm the diagnosis of appendicitis, when associated with the patient's clinical condition, it is already possible to direct the diagnosis. In addition, attention should be paid to the duration of symptoms, since there is a direct relationship between the average duration of symptoms and the degree of appendicitis and, consequently, the risk of complications [11].

Methods for identifying the disease have been proposed, with the standardization of information obtained from anamnesis and physical examination – and, eventually, complementary tests – traditionally used in Medicine. In the 1980s, arithmetic techniques intended to establish scores – including with the aid of computers – to facilitate the early diagnosis of acute appendicitis and prevent complications resulting from delayed treatment [7]

Laboratory tests can still help in the diagnosis of appendicitis, which may present a moderate leukocytosis of 10,000 to 18,000 cells/mm³ and alteration of C-Reactive Protein. [4,10].

Among the imaging tests that can help in the diagnosis, the most used for diagnostic confirmation is computed tomography, with the exception of children and pregnant women, who recommend an abdominal ultrasound to avoid radiation. Despite having good sensitivity and specificity, when performed early in the course of the disease, they may not show changes [6,7].

Due to the importance of an early diagnosis, in order to avoid complications such as intestinal perforation, the patient's clinic must prevail in the diagnosis, since there will not always be changes in the imaging exams.

In the case studied, because it is an elderly patient, the clinical picture initially presented milder symptoms, causing her to take a long time to seek medical help. Upon examination, in addition to symptoms compatible with appendicitis, she already had several semiological signs indicating peritoneal irritation. Despite the suggestive clinical appearance, as the patient was older, laboratory and imaging tests were important to exclude differential diagnoses.

4 CONCLUSION

The diagnosis of acute appendicitis must be made early to avoid intestinal perforation, which is associated with greater postoperative complications. The association of semiological signs, symptoms and laboratory tests indicating inflammation already strongly indicate the diagnosis of appendicitis, and imaging tests should be performed to exclude possible differential diagnoses. However, in the absence of alterations in the imaging exams, the clinic should prevail, since in the initial stages it may not present alterations. Thus, it is important to have knowledge of the semiotic maneuvers that corroborate acute appendicitis, during the physical examination, in order to have an earlier diagnosis.

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