

## ETIOLOGY AND CLINI- CAL MANIFESTATIONS OF ACUTE INFLAMMA- TORY ABDOMEN: A NARRATIVE REVIEW

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**Abstract:** Objective: To analyze the main etiologies of acute inflammatory abdomen, clinical manifestations and therapeutic approach carried out in each case. Bibliographical Review: Acute abdomen is a clinical condition characterized by pain and severe sensitivity, which may begin suddenly or progressively due to some peritoneal irritation. It is characterized by a situation of difficult evolution as well as categorization according to its severity, which generates delays in emergency management and increased morbidity and mortality. The causes of abdominal origin responsible for inflammatory-type acute abdomen are acute appendicitis, acute cholecystitis, acute pancreatitis, diverticulitis, pelvic inflammatory disease, intracavitary abscesses and peritonitis. The main focus in cases of acute abdomen is the accurate early diagnosis of the etiology, in order to initiate appropriate treatment. The treatment of acute inflammatory abdomen is mostly surgical. In selected cases, clinical treatment is necessary before the patient has an operation indicated. Final considerations: Given the difficulty of establishing an accurate diagnosis at the first moment and due to the large number of manifestations, it is important that during the initial examination some serious diseases that require surgical intervention are excluded, as delays in diagnosis and treatment affect the patient's prognosis.

**Keywords:** Acute inflammatory abdomen, Abdominal pain, Appendicitis.

## INTRODUCTION

Acute abdomen is a clinical condition characterized by pain and severe sensitivity, which may begin suddenly or progressively due to some peritoneal irritation. It is characterized by a situation of difficult evolution as well as categorization according to its severity, which generates delays in emergency management and increased morbidity and mortality. Pain that affects the abdominal region represents around 10% of all cases in an emergency department, being a frequent reason for the patient to return to the emergency room (MAGLIN HN and MCCOIN N, 2021; BURLET KJ, et al., 2018).

The chance of abdominal pain disappearing over time is minimal and, as a result, the patient visits a care unit several times, given the recurrence of undiagnosed and untreated discomfort. Due to the complex psychophysiology of abdominal pain and, in some cases, the presentation of uncontrollable pain, as well as the patient's great suffering, it is essential for clinical intervention to determine the urgency and underlying pathology (DANIELS J, et al., 2019; MAGLIN HN and MCCOIN N, 2021).

The main focus in cases of acute abdomen is the accurate early diagnosis of the etiology, in order to initiate appropriate treatment. However, approximately 40% of patients who seek medical help with complaints of abdominal pain remain undiagnosed (CACCIATORE et al., 2019).

Given the difficulty of establishing an accurate diagnosis at the first moment and due to the large number of manifestations, it is important that during the initial examination some serious diseases that require surgical intervention are excluded, such as appendicitis, cholecystitis, peptic disease, embolism, mesenteric thrombosis, bridles, wall hernias and neoplasms (VELISSARIS et al., 2017).

Therefore, the following narrative review of the literature aims to review the main pathophysiological characteristics of inflammatory acute abdomen, with emphasis on the main causes, clinical manifestations, diagnosis and management of this pathology.

## LITERATURE REVIEW

Acute abdomen refers to a complex intra-abdominal syndrome that results in intense pain and compromised health that requires an immediate and precise approach. Considered a clinical urgency triggered by multiple factors and composed of five classifications, its etiological diagnosis is often difficult and compromises the patient's clinical status (CACCIATORIFA, et al., 2019).

According to Townsend et al., (2015) acute abdomen is described as acute abdominal pain, of severe intensity, of sudden or progressive onset, lasting less than seven days, and its persistence for more than six hours becomes a strong indication of pathology requiring surgery.

## MAIN ETIOLOGIES

There are a wide range of factors that can trigger an acute abdomen. Some examples address various classes of disorders of the digestive organs located in the abdominal cavity, spleen, liver, peritoneum, mesenteric organs, vascular and retroperitoneal structures (MOTA E, et al., 2019).

The causes of abdominal origin responsible for inflammatory-type acute abdomen are acute appendicitis, acute cholecystitis, acute pancreatitis, diverticulitis, pelvic inflammatory disease, intracavitary abscesses and peritonitis. Perforating infections include peptic ulcers, gastric cancer, amoebiasis, perforation of the appendix and gallbladder. Obstruction occurs due to strangulated hernia, bridas, ascaris, gallstones, volvulus, intussusception and pyloric obstruction.

Ectopic pregnancy, hemorrhagic ovarian cyst, tumor necrosis, endometriosis and ruptured spleen end in the hemorrhagic form. The vascular form develops from thrombosis of the mesenteric artery, torsion of the great chin and pedicle of an ovarian cyst and splenic infarction (MERCK SHARP AND DOHME (MSD), et al., 2020).

Extra-abdominal causes of acute thoracic abdomen include pulmonary and myocardial infarction, lower lobe pneumonia, pneumothorax, pulmonary embolism and acute pericarditis. Hematological include sickle cell crisis and acute leukemia. Neurological include herpes zoster, nerve root compression and tabes dorsalis. Metabolic are related to diabetic ketoacidosis, Addisonian crisis, porphyria. Poisoning conditions also include risk factors and include lead poisoning, venomous animal bites and narcotics withdrawal (MARQUESCUM, et al., 2021).

## CLINICAL MANIFESTATIONS

The clinical condition consists of abdominal pain of visceral origin with an insidious onset and progressive character, with worsening intensity over time. Its character may change as the condition progresses, changing from visceral pain to parietal pain (if there is associated peritonitis), in addition to constitutional signs, such as nausea, vomiting, fever, hyporexia and tachycardia. There is diffuse peritonitis in cases of perforation (BOKEMEYER A, et al., 2020; SARTELLI M, et al., 2021). The associated clinic directs reasoning to specific causes (SAVERIO S, et al., 2020).

According to Shafasheck et al., (2021) in addition to abdominal pain, the patient may present nausea, vomiting, fever, changes in feces or urine, bleeding and other signs that can be found on physical examination such as abdominal muscle rigidity, antalgic positions, signs of hemorrhage and classic signs of

## DIAGNOSIS

Just like the clinic, management must be based on the etiological hypothesis. In appendicitis, the Alvarado Score is a useful diagnostic tool, using the signs, symptoms and laboratory of the disease (SAVERIO S, et al., 2020). Imaging exams also help in the diagnosis, with ultrasound being the initial exam, although it does not rule out the diagnosis due to its low negative predictive value. Therefore, the investigation can be continued with abdominal CT (SAVERIO S, et al., 2020; SARTELLI M, et al., 2021). Subsequently, acute pancreatitis is diagnosed with the presence of two of three criteria - abdominal pain with sudden onset, persistent, severe, usually epigastric pain radiating to the back; elevation of enzymes three times above the upper limit of normal (amylase and lipase) and/or radiological characteristics of acute pancreatic inflammation on imaging exams, whether on magnetic resonance imaging (MRI), transabdominal ultrasound or contrast-enhanced computed tomography (CT) (CROCKETT SD, et al., 2018; BOKEMEYER A, et al., 2020). Usually, an abdominal CT is not necessary, as abdominal pain and enzyme elevation confirm the diagnosis first (BOKEMEYER A, et al., 2020; CARNEIRO RS, et al., 2021).

The diagnosis of cholecystitis is clinical and has several symptoms, including pain in the right upper quadrant or epigastric quadrant, fever and leukocytosis related to inflammation of the gallbladder. On physical examination, a positive Murphy's sign supports the diagnosis. However, additional examination such as abdominal ultrasound may be requested; if the diagnosis remains doubtful, a cholecystography may be performed (ZAKKO SF, et al., 2020). When suspected diseases of the hepatobiliary system,

elevated inflammatory parameters are useful, as is a possible investigation for the presence of gallstones (BOKEMEYER A, et al., 2020; SARTELLI M, et al., 2021).

In uncomplicated diverticulitis, the diagnosis is clinical, with acute and constant abdominal pain that is normally in the left lower quadrant and hypogastric region, palpable mass and abdominal distension, and may have changes in bowel habits. It is generally associated with fever and elevated inflammatory parameters (white blood cells, C-reactive protein). An abdominal CT may be requested for: patients without a previous diagnosis of diverticular disease or when the condition is not typical (SARTELLI M, et al., 2020; HANNA MH and KAISER AM, et al., 2021).

The acute condition associated with an abscess represents complicated diverticulitis (HANNA MH and KAISER AM, et al., 2021). In case of diagnostic doubt in acute inflammatory abdomen, diagnostic laparoscopy is a good exam, as it is possible to confirm the diagnosis and offers direct therapeutic options. Therefore, it is the ideal exam for patients with an atypical condition and progressive worsening.

## TREATMENT

The treatment of acute inflammatory abdomen is mostly surgical. In selected cases, clinical treatment is necessary before the patient has an operation indicated. The main causes of inflammatory acute abdomen are: Acute cholecystitis, acute appendicitis, acute diverticulitis and acute inflammatory pelvic disease (ZAKKO SF, et al., 2020).

In general treatment, the most important aspect is to identify the need for surgery, as occurs in appendicitis and cholecystitis (SAVERIO S, et al., 2020; SARTELLI M, et al., 2021). In pancreatitis, the standard treatment is conservative, with clinical

compensation and fluid resuscitation in order to avoid pancreatic necrosis (CROCKETT SD, et al., 2018; CARNEIRO RS, et al., 2021). In the case of uncomplicated acute diverticulitis, treatment is conservative with antimicrobials. In the presence of complications, exploratory laparotomy and Hartmann resectosigmoidectomy are indicated (SARTELLI M, et al., 2020; HANNA MH and KAISER AM, 2021).

In summary, the treatment of acute inflammatory abdomen is surgical in most cases. The choice of the operation to be performed, conventional, laparoscopic or robotic surgery, depends on the available hospital resources and the surgeon's expertise. The surgeon's greatest commitment must be to treating the patient using the method with which he has the best results.

## FINAL CONSIDERATIONS

The clinical picture of acute abdomen is characterized by pain, usually of sudden onset or progressive evolution, with several possible etiologies and which requires diagnostic definition and immediate therapeutic management. In this sense, it is extremely important to identify the cause adjacent to the condition presented by the patient for diagnosis and effective management, since delays in diagnosis and subsequent treatment affect the patient's prognosis. In this sense, the topic discussed in this review still requires more studies and better hospital conditions within the scope of the therapeutic approach in each case.

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