

# Atypical acute appendicitis presentation with an appendicolith. A case report

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## Case report

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**Background:** Appendicitis is the most common cause of acute abdomen. The pathophysiology of appendicitis begins with obstruction of the narrow appendiceal lumen. We presented a patient who presented atypical clinical picture corresponding to acute appendicitis, presenting only 2 points in the Alvarado criteria, however presents an appendicolith of approximately 13 mm so it was decided to perform surgery. In most cases with physical and history findings diagnosis can be made. In some cases atypical signs and symptoms are present and a CT scan or image study is needed.

**Key words:** Appendicitis, appendicolith.

Appendicitis is the most common cause of acute abdomen. The diagnosis of appendicitis can be easy when it presents with the classical symptoms or very challenging when present with atypical symptoms (1,2). Acute appendicitis has an incidence of 100 new cases per 100 000 persons per year and is the most common cause of the acute abdomen (3, 4). The lifetime risk of acute appendicitis is slightly higher in men than in women (8.6% versus 6.7%).

The pathophysiology of appendicitis begins with obstruction of the narrow appendiceal lumen. Obstruction has many sources, including fecaliths, lymphoid hyperplasia (related to viral illnesses such as upper respiratory infections, mononucleosis, or gastroenteritis), gastrointestinal parasites, foreign bodies, and Crohn's disease (3).

Around 30% of patients operated on for appendicitis have appendicolithiasis (5). In this article we present a 15 years old male patient with an atypical case of appendicitis who presented with pain in the right lower quadrant of 3 days of evolution.

## Case report

A 15-year-old male patient was admitted to the pediatric emergency department for presenting abdominal pain of 72 hours of evolution with localized pain in the epigastrium, colic type, with intensity of 7/10 intermittent onset, varying in intensity, presenting spontaneous decrease and later exacerbation 12 hours after the onset of the condition, irradiation to the right hypochondrium, right flank and right iliac fossa.

Mother administered butylhioscine and omeprazole orally 3 doses of each drug presenting improvement even the patient was asymptomatic on admission to the emergency area, without medication during the last 24 hours. Asthenia, adynamia, fever and hyporexia were denied.

On physical examination: Weight 109 kg  
Height 1.83 meters  
Blood pressure: 110/60 mmhg  
Heart rate 86 bpm  
Respiratory rate 18 rpm  
Temperature 36.5 degrees Celsius.

Patient was calm, without pain facies, freely chosen position, neurologically intact, well ventilated lung fields, rhythmic heart sounds, distended abdomen at the expense of adipose tissue, peristalsis present, soft, depressible, without pain on superficial or medial palpation, pain on deep palpation of right hypochondrium, right flank and right iliac fossa. Rebound, Psoas, Talopercussion, Obturator, Rovsing, Dunphy sign negative, limbs intact, immediate capillary filling.

Blood biometry was performed Leukocytes 6.1, Hemoglobin 14.3, Hematocrit 38.4, Platelets 288, Neutrophils 52.9%, Prothrombin time 15, International Normalized Ratio 1.3, Partial Thromboplastin Time 29.8, Glucose 87, Creatinine 0.77, Total Bilirubin 0.53, Direct Bilirubin 0.23, Indirect Bilirubin 0.30, Aspartate Aminotransferase 24, Alanine aminotransferase 23, Alkaline Phosphatase 290, Lactic dehydrogenase 172, Amylase 40, Sodium 139, Potassium 4.4.

An abdominal ultrasound was performed concluding moderate hepatic steatosis, reporting a thin-walled gallbladder with anechoic content, no



**Figure 1.** Coronal Computed Tomography image with the presence of appendicolith in the middle third which measures 13 x 9 mm.

appendix was described, suggesting to perform a CT scan in order to rule out appendicular pathology.

Simple abdominopelvic tomography is performed paracecal appendix with a caliber of 4 mm at the base, presence of appendicolith in the middle third which measures 13 x 9 mm in the major axes, in the distal third thickness of up to 9 mm is observed, without striation of the adjacent fat or inflammatory changes. Paracolic and right iliac lymph nodes are round with loss of fatty hilum and major axis measuring 17 x 12 mm. Diagnostic impression: mesenteric adenomegaly and appendicolith in the cecal appendix with thickening of the tip of the appendix as the only change (Figure 1).

Patient who presented atypical clinical picture corresponding to acute appendicitis, presenting only 2 points in the Alvarado criteria, however presents an appendicolith of approximately 13 mm so it was decided to perform surgery.

Open appendectomy is performed with right paramedian incision, the cavity is accessed, no inflammatory fluid is found, paracecal appendix of 12 cm is located, with the presence of fecalith of the middle third of approximately 1.5 cm in diameter (Figure 2). Slight edema and increased vascularity were observed, intact, base without alterations, we proceeded to perform appendectomy Pouchet technique, verifying integrity and hemostasis, we proceeded to close by planes. Patient presented adequate postoperative evolution and was discharged 48 hours after surgery.

We are faced with an atypical clinical case, where the patient did not present clinical or laboratory data suggestive of acute appendicitis with very low



**Figure 2.** A. Appendicolith of 1.6 cm, B. Longitudinal cut of the appendix with wall thickening. C. Early Stage Appendicitis.

Alvarado criteria, however, presenting a fecalith of 1.5 cm in diameter.

## Discussion

Appendicolithiasis is a term used to describe concretions or calcified deposits in the appendix. These could be either a tightly packed fecal material or true calculi.

There is no definite relationship between size of the appendicolith and risk of appendicitis or its complications. When appendicoliths are more than 2cm in diameter they are defined as giant (6). Understanding and documenting the possible uncommon presentation of common clinical conditions like appendicitis is an important consideration for physicians.

If anamnesis, physical examination, lab parameters (C-reactive protein/leukocytes), and transabdominal US did not yield a definitive diagnosis of appendicitis and pregnancy has been ruled out, CT examination of the abdomen should be performed particularly in the case of limited sonographic evaluation options and patients with atypical signs of appendicitis or suspected perforation. Atypical signs of appendicitis are present in approx. 1/3 of all patients (7).

When evaluating CT images, the radiologist performing the examination should pay attention to 5 signs of appendicitis (8-10): 1. Enlarged appendix diameter of more than 6 mm (most important parameter in the absence of perforation), 2. Appendiceal wall more than 2 mm thick, 3. Inflammatory compression of the adjoining adipose tissue, 4. Abscess formation in the right lower

abdomen, 5. Calcified appendicolith. The presence of all of the first three criteria indicates non-perforated acute appendicitis. Given the presence of perityphlitic abscess in the case of appendiceal perforation, detection of a calcified appendicolith is not definitive for acute appendicitis (8).

There are scarce reports about the clinical risk of appendicolith incidentally discovered in children without symptoms of appendicitis. On one hand, overuse of CT scanning for children without surgical indications is inappropriate due to unnecessary radiation injury. On the other hand, as an obstructive factor, the existence of appendicolith may increase the risk for appendicitis (11).

In this case the patient had an atypical semiology so we opted to do the computed tomography where we saw the calcified appendicolith and the appendix wall thickening and decided to perform an appendectomy.

## Conclusion

Appendicitis is one of the most common causes that require emergency surgery. In most cases with physical and history findings diagnosis can be made. In some cases atypical signs and symptoms are present and a CT scan or image study is needed.

We share this case to see how atypical symptoms can be found, and even with predictive scores like Alvarado being low may require appropriate image studies to establish diagnosis and have proper management.

## Conflicts of interests

There are no potential conflicts of interest of any of the authors in this scientific report.

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