



Uncomplicated Subhepatic Appendicitis: Case Report and Literature Review

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ABSTRACT

Introduction: Subhepatic appendicitis symptoms in adults are low in frequency with atypical symptoms, which makes early diagnosis and management difficult. **Clinical case:** 33-year-old male, with a 24-hour evolution condition characterized by diarrheal evacuations, treated with antibiotics. Subsequently, he presented with vomiting, colicky abdominal pain, and a fever of 39 °C. With a clinical picture compatible with an appendicular process, an exploratory laparotomy was performed with suspicion of an appendicular process in the subhepatic, finding an inflamed appendix, 5 cm long, with an appendectomy. **Discussion:** Atypical signs and symptoms may be observed. These may include left-sided abdominal pain, which is located in the left upper quadrant. While the appendage on the side left is relatively rare and occurs in approximately 0.02% of the adult population, it is more likely to occur in people with intestinal malrotation or situs inversus. **Conclusions:** All the anatomical variants of the appendix must be considered due to the multiple clinical presentations, with an atypical presentation and the diagnosis is masked.

Keywords: Acute Appendicitis, Anatomy Variant, Diagnoses, Treatment.

INTRODUCTION

The appendix has a diverse evolutionary history and its purpose has been debated and investigated. The appendix contributes to the body's defenses by promoting mucosal immunity against pathogens and balancing gut microbes. Inflammation of the vermiform appendix is known as appendicitis [1]. The incidence of appendicitis is estimated to be about 100 cases per 100,000 people per year, with a constant occurrence rate in Western nations and an increasing trend in developing regions [2].

Acute appendicitis can affect people of any age, but it is most common between the ages of 10 and 20. The lifetime risk of acute appendicitis is 8.6% in men and 6.9% in women [3]. Clinical assessment, clinical scoring systems, and inflammatory markers are commonly used, but their limitations have led to increased use of imaging in patients with suspected appendicitis. Acute appendicitis is treated by surgical and non-surgical treatment, depending on whether it is complicated or not [4]. Developing diagnostic pathways to improve outcomes and reduce complications is crucial. Although medical advances have been made, diagnosing and treating appendicitis can be challenging, especially when patients present atypically.

CLINICAL CASE

A 33-year-old male, with a 24-hour evolution condition characterized by diarrheal stools, without mucus or blood, treated with antibiotics. Subsequently, he presented vomiting, crampy abdominal pain, and a fever of 39 °C, which did not stop with medication. The abdomen on physical examination was soft and depressible, with little pain in the right flank, hyperemic. On physical examination, pain in the right hemiabdomen, Rovsing appendicular signs, positive psoas, Blumberg and McBurney negative. Laboratory studies showed leukocytosis of 14,600, neutrophils of 83%, platelets of 212,000 and bands of 10%; and coagulation times were normal. In the imaging studies, the abdominal X-ray showed distension of the intestinal loops, air-fluid levels, and psoas effacement. Abdominal ultrasound showed liver of usual shape, size and situation, appendix not assessable by study method. Surgical treatment was decided by exploratory laparotomy (fig. 1), finding an appendix with the presence of fibrinopurulent material in the subhepatic space of 30 cc. With liver, gallbladder and other organs spared without evidence of collections, dissection is performed until the appendiceal base is identified, which was spared, ascending colon and cecum are observed with a short length as usual, Pouchet-type appendectomy was carried out with free silk 2 -0, drainage of fluid and lavage of the cavity is performed, a Penrose-type drain was placed leading to the pelvic cavity and a drenovac was placed in the subcutaneous tissue. He was kept fasting for one day since the base was respected, tolerance began with a liquid diet, after 3 days of hospital stay with a double scheme of third-generation antibiotic and metronidazole, analgesic based on paracetamol and ketorolac, without the presence of bleeding, abdominal pain, low serohematic drainage expense, it was decided to be discharged to continue monitoring in the outpatient clinic for three months, with no evidence of collection or any complication during follow-up. He was discharged from general surgery to continue management in the outpatient surgery clinic general, with report of piece by pathology (fig. 2) of cecal appendix with acute inflammatory process, without evidence of perforations, without evidence of malignancy.

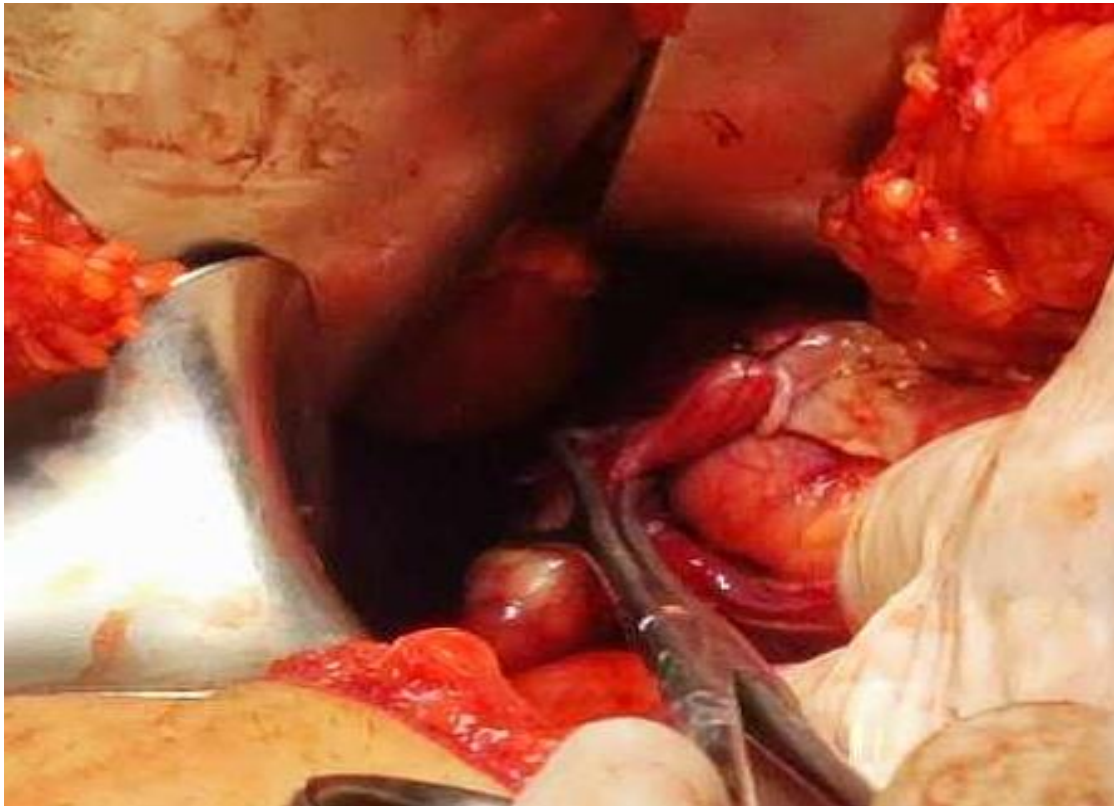


Figure 1: Cecal appendix with fibrinopurulent tissue in the subhepatic bed taken by babcock forceps, in the upper left part the gallbladder is visualized.

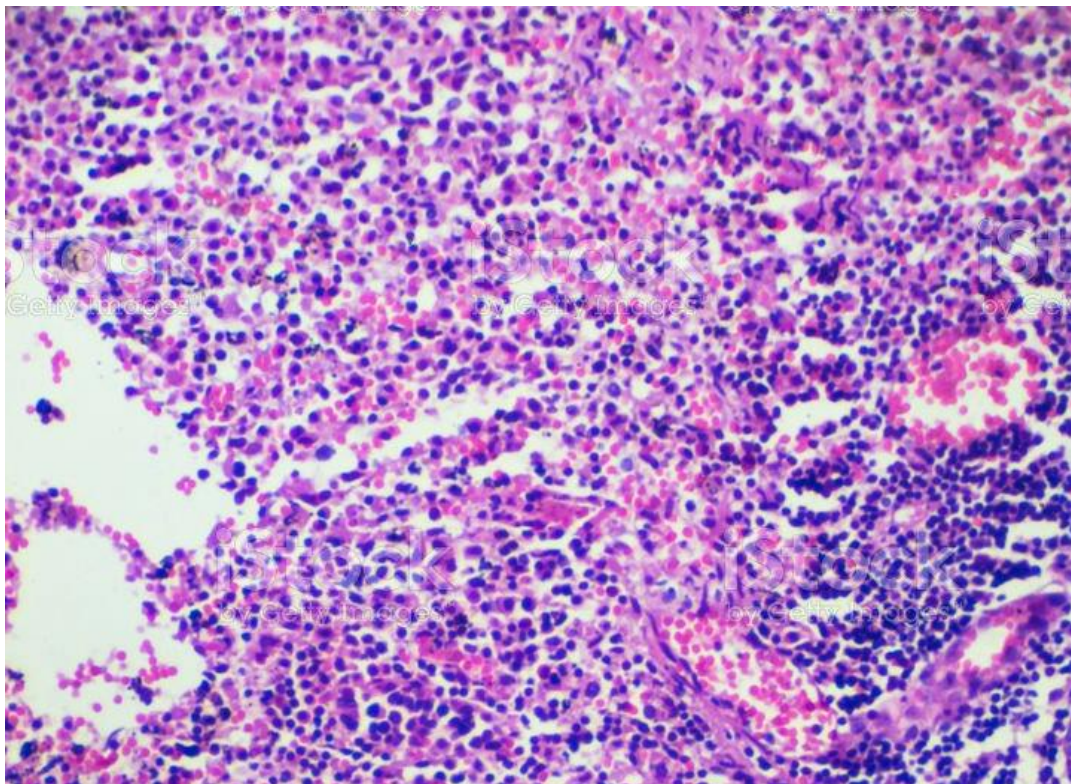


Figure 2: Histological section of the cecal appendix with polynuclear exudate, serous with the presence of purulent fibrinous. inflammation.

DISCUSSION

Appendicitis is one of the most common causes of acute abdominal pain, with a lifetime risk of 8.6% in men and 6.7% in women. Although the etiology of appendicitis is not always determined, it is believed to be multifactorial, including but not limited to environmental influences and genetic factors [1]. Pathogenesis begins predominantly with luminal obstruction as a blind-ended tube connected to the cecum; the most common cause is a fecalith. Another important factor, especially in children, is lymphatic hyperplasia, which can be caused by genes due to excessive growth of lymphoid tissue in the submucosa or to the stimulation of influenced viruses. patient history, examination, and laboratory findings have little predictive value, but in combination their diagnostic value is much greater [2, 3].

The differential diagnosis is broader in premenopausal women, since the symptoms of acute appendicitis can be similar to the pain that some women experience during normal menstruation, dysmenorrhea or ovulation and pathologies such as ovarian torsion, ectopic pregnancy and the disease pelvic inflammatory [4].

The clinical presentation of appendicitis can also vary depending on the anatomic location of the inflamed appendix. Anatomy-related symptoms may include diarrhea and rectal and vaginal irritation. The three main types of appendicitis based on anatomy are rectocecal / retrocolic (75%), subcecal pelvic (10%), and preileal and postileal (5%) types. A positive psoas sign is commonly seen in these cases. In cases of subcecal pelvic appendicitis, suprapubic pain and urinary frequency may predominate, and positive rectal or vaginal sensation and obturator signs are common [5, 6]. Pre- and post- ileal appendicitis may present with vomiting as the primary symptom, and diarrhea may be due to irritation of the distal ileum. With age, as the anatomy of the appendix changes, elderly patients do not usually present with all the typical signs and symptoms of acute appendicitis, such as pain in the right iliac fossa, fever, anorexia, vomiting. In elderly patients with appendicitis, abdominal pain is the most common presenting symptom; 75% of patients experience right lower quadrant pain [7].

Other symptoms include vomiting in 27%, nausea and anorexia in 9%, positive Rovsing signs in 10%, rectal temperature above 37.5°C in 71%, abdominal mass on palpation in 7%, pain on palpation in the right lower quadrant or at McBurney's point in 9% and pain on rebound with defense in 40%. Additionally, 54% of elderly patients with appendicitis have rebound pain and tenderness [8].

Sudden disappearance or decrease in intensity of pain is a possible indication of appendix rupture as pressure within the appendiceal wall decreases. Physical examination may reveal a triad of symptoms, including rapid heartbeat, low-grade fever (37.8°C), decreased bowel sounds, and increased sensation over time. A rigid abdomen is a clear indicator of perforation and should be monitored to prevent further complications [9].

Atypical signs and symptoms may be observed. These may include left-sided abdominal pain, which is located in the left upper quadrant. While the appendage on the side left is relatively rare and occurs in approximately 0.02% of the adult population, it is more likely to occur in people with intestinal malrotation or situs inversus. Appendicitis is also associated with diarrhea as an atypical symptom in advanced appendicitis, especially in patients with interenteric abscesses [10].

The clinical diagnosis of acute appendicitis is based on history and physical, laboratory, and imaging evaluation. Classic symptoms of appendicitis include vague periumbilical pain, intermittent anorexia/nausea/vomiting, migration of pain to the right lower quadrant, and low-grade fever. The diagnosis of acute appendicitis is made in approximately 90% of patients presenting with these symptoms. Laparoscopic appendectomy remains the most common treatment. However, increasing evidence suggests that broad-spectrum antibiotics, such as piperacillin-tazobactam monotherapy or combination therapy with cephalosporins or fluoroquinolones with metronidazole, successfully treat uncomplicated acute appendicitis in approximately 70% of patients [10, 11]. Specific imaging findings on computed tomography (CT), such as dilated appendix (appendiceal diameter ≥ 7 mm) or the presence of appendicoliths, defined as conglomeration of feces in the lumen of the appendix, identify patients for whom an antibiotic-first management strategy is more likely to fail. CT scan findings of appendicolith, mass effect, and a dilated appendix greater than 13 mm are associated with a higher risk of treatment failure (40%) than an antibiotic-based approach. Therefore, surgical treatment should be recommended in patients with CT findings of appendicolith, mass effect, or dilated appendix who are suitable for surgery, defined as those who are at relatively low risk of adverse outcomes or mortality and morbidity. In patients without high-risk CT findings, appendectomy or antibiotics may be considered as first-line treatment. In unfit patients and without these high-risk CT findings, the antibiotic-first approach is recommended and surgery may be considered if antibiotic treatment fails. In unfit patients with high-risk CT findings, perioperative risk assessment should be considered, as well as patient preferences [12, 13].

Appendectomy, by open laparotomy through a limited incision in the right lower quadrant or by laparoscopy, is the standard treatment for acute appendicitis. A recent meta-analysis evaluated various outcomes of open and laparoscopic appendectomies in children and adults. Compared with open laparotomy, laparoscopic appendectomy resulted in a lower incidence of wound infection, fewer postoperative complications, a shorter hospital stay, and faster return to activity, but a longer operating time [14].

CONCLUSION

of the appendix must be considered due to the multiple clinical presentations, with an atypical presentation and the diagnosis is masked, causing complications such as perforation and abscesses. Cases of acute subhepatic appendicitis are rare and are usually associated with malrotation of the intestine. Delaying treatment implies a longer hospital stay and the risk of increasing morbidity and mortality, as in the case of the formation of abdominal or diaphragmatic abscesses, leading to mortality in the patient.

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