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REVIEW ARTICLE

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EPIPLOIC APPENDAGITIS: A CASE REPORTS AND A SISTEMATIC REVIEW

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ABSTRACT

Epiplioc appendagitis is a rare entity of abdominal pain, often being confused with common acute abdominal pathologies, such as appendicitis and diverticulitis. Its pathophysiology is based on a torsion process of the vascular pedicle of the epiplioc appendix. The correct diagnosis is essential, in order to avoid unnecessary therapeutic interventions, with computerized axial tomography being the diagnostic method of choice. In most cases, therapy is symptomatic, with spontaneous remission occurring within a few days using medication to control symptoms and sometimes antibiotics. The authors present the report of a clinical case of a 37-year-old female patient who came to the consultation for abdominal pain in the lower quadrants, with epiplioc appendagitis being published. Conservative management has been demonstrated. Anatomy, pathophysiology, clinical presentation, radiological evaluation, and emergency management of epiplioc appendagitis are reviewed in this article.

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INTRODUCTION

Epiplioc appendagitis, also known as epiplioc appendicitis, hemorrhagic epiplioitis, epiplioepicolitis or appendagitis (CHAN, 2018), is a very rare clinical condition that does not have its incidence fully elucidated in the literature. It is more frequent in males (in a 4:13 ratio) between the third and sixth decades of life, with a peak between forty and fifty years of age (ALMEIDA, 2009). Its pathophysiology is by torsion or thrombosis of the central draining vein causing an ischemic infarction of an epiplioc appendix, being a cause of acute abdominal pain and can often be confused with

diverticulitis, appendicitis, ectopic pregnancy, ovarian cyst rupture, ovarian torsion, mesenteric adenitis, ileitis, among others (DI SERAFINO, 2019; RODRÍGUEZ GANDÍA, 2008; SURESH KUMAR et al, 2019). The most common sites for the development of this disease are the rectosigmoid (57%) and ileocecal (26%); the rarest sites are the ascending (9%), transverse (6%) and descending (2%) colon (SCHNED, 2011). Most patients are afebrile and have a normal white blood cell count (SURESH, 2019). Altered laboratory parameters may include slightly elevated serum levels of C-reactive protein and neutrophils (OZDEMIR, 2010; SAN, 2007). The correct diagnosis is very important, in order to prevent unnecessary therapeutic interventions, since this pathology is not treated

surgically. Before the emergence of ultrasonography (US) and, in particular, computed tomography (CT), the diagnosis of epiploic appendicitis was frequently made during the intraoperative period, as there were no signs and symptoms that would allow its differentiation from surgical pathologies (RIOX, 1994, FREITAS, 2008). Contrast-enhanced computed tomography allows a definitive diagnosis, avoiding an unnecessary surgical procedure and is currently the standard diagnostic test (RÃO, 2009). Treatment in most cases is recommended conservative therapy with the use of non-steroidal anti-inflammatory drugs and in some specific cases antibiotic therapy (SCHNEDL 2009; THOMAS, 2011). The objective of this article is to improve the knowledge about this condition, to allow a better management of this pathology, to help to avoid unnecessary surgery, reporting a case of epiploic appendagitis treated in a conservative way.

CASE REPORT

JSO, 37 years old, female, complained of pain in the left lower quadrant, which started 36 hours before arriving at the emergency department of our hospital. Pain was constant, and had no acute exacerbations that increased pain, being numerically rated as six, on a numeric descriptor scale from zero to ten. The pain did not show immigration or irradiation. She reported anorexia, but denied nausea and vomiting. She has no diarrhea, fever or chills. She denied symptoms of respiratory or genitourinary dysfunction. The patient had no relevant medical or surgical history. On physical examination, there was moderate pain on deep palpation in the flank and left iliac fossa, without defense or contracture of the abdominal wall. Renal Murphy absent. No masses were palpable. Laboratory tests showed leukocytosis of 13670/uL (5000-10000/uL) with 67% (15-80%) of neutrophils, without other relevant alterations, namely in inflammatory parameters. Urinalysis did not show any alterations. An urgent abdominal computed tomography was performed, which showed, in a topography adjacent to the descending colon, mesenteric fat densification and discreet punctiform densification in the center, and aspects that suggested an inflammatory process of the epiploic appendix (Appendagitis) as well as the presence of an increase in the number and size of peritoneal and retroperitoneal ganglia, without signs of acute diverticulitis (Figure 1).

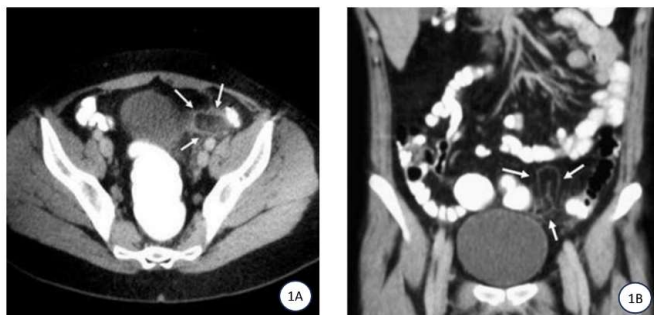


Figure 1. Abdominal tomography with contrast evidence small oval area, with density similar to that of fat, associated with blurring of adjacent fatty planes, evidenced by the arrows next to the lateral wall of the descending colon, compatible with epiploic appendagitis, in axil (1A) and coronal section (1B)

DISCUSSION

Epiploic appendages were primarily described by Vesalius in 1543, however the process of epiploic appendagitis is a rare and recently recognized entity, more precisely in 1956, by Dockerty et al (SCHNEDL, 2011; DOCKERTY, 1956; CHEN, 2011). Epiploic appendages line the external surface of the large intestine (Figure 2). These peritoneal pouches are natural outcroppings of subserosal fat enveloped by a serosal covering (HARRIGAN, 1917).

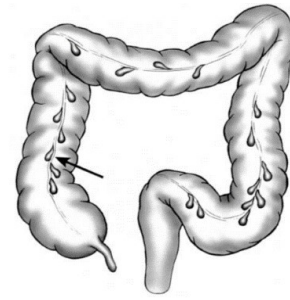


Figure 2. Frontal view of colon with epiploic appendages (arrow) along the anterior taenia. The two remaining taeniae coli with their attendant epiploic appendages are not depicted here

No agreement exists as to the function of the appendage epiploicae, although several theories have been proposed. Suggested functions include bacteriostatic properties (like a miniature omentum), a role in colonic absorption, and a flexible cushion to protect the blood supply when the colon is collapsed. In describing their role in the operating suite, one surgeon commented: "They rarely excite much notice, except to be cursed as an impediment to precise anastomosis of the colon or gratefully acknowledged as an added measure of protection when used to reinforce a precarious suture line ." (LYNN, 1956; GHOSH 1968; HARPER, 1967). Males have a 4-fold greater tendency to develop this condition, with other contributing factors including obesity and abnormal physical activity (CHAN, 2018). The clinical picture can be succinctly presented in two ways, the primary form resulting from a spontaneous torsion of the epiploic appendages, with subsequent vascular occlusion and ischemia, and the secondary form, resulting from an inflammatory process of adjacent organs, including the colon, gallbladder and the cecal appendix (PURYSKO, 2011). Epiploic appendagitis manifests itself with a sudden onset of abdominal pain located in the right or left lower quadrant, which usually simulates diseases that are treated with surgery. Such as appendicitis or diverticulitis. Before the availability of imaging methods, most cases of acute epiploic appendagitis were diagnosed intraoperatively. As clinical signs and symptoms are nonspecific, the diagnosis is correct in only 2.5% of patients (SURESH KUMAR, 2019), exposing patients many times to unnecessary invasive procedures. Usually epiploic appendages are not visualized in imaging methods, unless they are surrounded by liquids (ascites) or depending on an inflammatory process. Since the introduction of imaging methods, diagnoses have been refined, with the use of Computed Tomography (CT) being the gold standard for cases of epiploic appendagitis (ALMEIDA, 2009). However, US and magnetic resonance imaging (MRI) can be used if CT is unavailable or equivocal. Typical CT findings in cases of acute epiploic appendagitis include the presence of a round or ovoid mass with fat density adjacent to the colonic wall, usually about 1.5 to 3.5 cm in diameter.), the "hyperattenuating ring sign", a hyperdense enhancement border, 1-3 mm thick, surrounding the lesion and the perilesional inflammatory fat filament (HAN, 2016).

A pathognomonic CT finding of epiploic appendagitis is the "central dot sign", characterized by an ill-defined rounded central area of high attenuation within the fat density mass (ALMEIDA, 2009). This sign is also known as the "dense central vessel sign" due to the engorged or thrombosed vessel within the inflamed epiploic appendix. Although the presence of this high attenuation area is pathognomonic, its absence does not preclude the diagnosis of acute epiploic appendagitis (ALMEIDA, 2009). Ultrasound shows the presence of a rounded hyperechoic image, measuring about 2-4 cm in maximum diameter, non-compressible, without internal vascularization on Doppler study due to lack of blood flow as a result of torsion (aiding in the differential diagnosis with acute diverticulitis) and with a thin hypoechoic halo. They may exert a local mass effect, and generally do not present intestinal wall thickening or ascites (ALMEIDA, 2009). Magnetic resonance imaging is rarely used for diagnosis, it can show a small oval mass with a signal intensity similar to that of fat. Contrast-enhanced T1-weighted MRI images also show an enhanced border around the oval fat mass (SAND, 2007). Before the diagnostic

assistance of US and CT, a preoperative diagnosis of acute appendagitis was seldom entertained. Accordingly, treatment was geared for the most likely pathology. If acute appendicitis was suspected, the patient was taken for laparotomy. When a normal appendix and an infarcted appendage were discovered, both were surgically removed. This involved ligating the base of the epiploic appendage and excising the entire structure. From this practice, the assumption arose that epiploic appendagitis required surgical intervention. On the other hand, when a preoperative diagnosis of acute diverticulitis held sway, medical management was preferred. Sometimes, no definitive diagnosis prevailed. In these cases, while the patient was under observation for “undifferentiated abdominal pain,” symptoms would resolve and the diagnosis would go unrecognized. Expectant management of acute epiploic appendagitis may be safely undertaken when more morbid conditions are unlikely, the diagnosis is radiographically confirmed, and the patient is not otherwise ill. Depending on the patient, the degree of illness, comorbidities, and social situation, observation could take place in the hospital, in an observation unit, or at home with close followup. While under observation during the early symptomatic phase, the patient should be restricted to clear liquids and treated with antibiotic therapy as in the case described, according to the literature, medical therapy, using non-steroidal anti-inflammatory drugs or opioid analgesics, in the case of sustained severe pain, is effective in the overwhelming majority of cases.

CONCLUSION

Epiploic appendagitis, a rare nosological entity, is characterized by a self-limited course. Its pathophysiology is based on a process of torsion of the vascular pedicle of the epiploic appendix, clinically translated by acute abdominal pain located in the lower quadrants. Taking into account the variety of differential diagnoses that may exist, a careful clinical history and a thorough objective examination are extremely important, in order to facilitate this diagnostic process. Imaging exams are fundamental for confirming the pathology, abdominal tomography with contrast is the most used method, however abdominal ultrasound, if performed by an experienced professional, also has its benefits. The recommended treatment is pharmacological, although in specific cases there is a need for surgical intervention, especially when there is an infectious complication. In medical treatment, the use of NSAIDs is normally sufficient for the complete resolution of the condition, as seen in the clinical case presented.

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