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NECROTIC EPIPLOIC APPENDAGITIS: CT FINDINGS AND SURGICAL TIMING

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Abstract

We present a surgical case of a necrotic epiploic appendage of a 37 yo man, that came to our Hospital for a doubt abdominal pain.

Clinical and laboratory exam, such us ultrasonography can not orient to correct diagnosis.

Only on CT images it is possible to diagnose epiploic appendagitis, in differential diagnosis with diverticulitis, especially when a pathognomonic sign is present, the "dot sign".

The diagnosis allows a correct medical or surgical management and avoids complicances.

Keywords: *appendagitis, differential diagnosis, CT, abdomen, abdominal pain*

Introduction

The epiploic appendage is a small pouch of sub serosal fat and blood vessels that project into the peritoneal cavity, parallel to the tenia coli of the colon with a length between 0.5 and 5 cm.

The exact function remains unknown, probably is a blood reservoir assist colon in absorption and protect against pathogens; in normal circumstances, epiploic appendage is not visualized on CT imaging [1].

Epiploic appendagitis is a benign inflammatory process, more frequent against sigmoid colon, descending colon or right emicolon. During on this event, torsion of the appendage can cause vascular occlusion with consequent ischemia, thrombosis or infarction.

It is a process that involves men more than women in their 30-50 yo, is generally associated to colon diverticula, exercise injury or hernias [2, 3].

The inflammation can heal after medical treatment, even if surgery becomes necessary in case of worsening or complications, such as adhesion, abscess formation, peritonitis, bowel obstruction, intussusception, intraperitoneal loose body [4-7].

We present a surgical case of a necrotic epiploic appendage of a young man, that came to our Hospital for a doubt abdominal pain.

Case Presentation

PR, male, 37 yo presented to our Emergency Section for abdominal pain, expecially in left side.

The patient had previous good health, no history of surgery; he denied trauma, nausea, vomiting, fever, kidney stones, dysuria or hematuria.

Physical examination revealed distended abdomen with tenderness in all quadrants.

The patient was placed on observation status; laboratory exams and a noncontrast abdomen CT were performed.

The patient had no fever (36.5 °), blood pressure of 115/90mm Hg, pulse 75 b/m, pulse oximetry of 97% in air.

Laboratory results obtained showed an elevation only of inflammatory indexes (C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR)).

The first abdomen CT with iv contrast media revealed an infiltration in visceral abdominal fat in left quadrant, on the antimesenteric margin of the descending colon. No bowel obstruction, diverticulosis or abscesses were reported. No free fluid or pneumoperitoneum or retro pneumoperitoneum were present.

Anti-inflammatory and antibiotic drug were administered. However, after ten hours, symptomatology got worse and an abdominal ultrasonography and non contrast CT were performed. The evidence of the "dot sign", suggestive for necrosis and the pain increase supported the decision of a laparoscopic excision of the epiploic appendage.

The clinical appearance of the surgical piece and the subsequent histological analysis confirmed the necrosis of the epiploic appendage.

No complicance occurs after surgery; the patient was discharged after a week in healthy conditions.

Discussion and Conclusion

Epiploic appendagitis is a rare benign cause of acute abdomen (0.6%) with two critical issues: the diagnosis and the treatment.

DIAGNOSIS

In the first case, in relation to the rarity of the disease, there are many cases epiploic appendagitis that remain undiagnosed; abdominal ultrasonography is not sufficient for the detection and an abdominal CT is essential not only for the diagnosis, but also for medical follow-up or surgical timing [8,9].

A good anamnesis and a in-depht physical exam can help to exclude some diagnosis, even if imaging remains the first choice for the detection and to rule out other causes of abdominal pain (Tab. 1). Sex, age, pain location, other associated symptoms and laboratory exams contribute to the correct framework [10].

The most important differential diagnosis is with diverticulitis, that occurs with fever, leukocytosis, related gastrointestinal symptoms and a diffuse abdominal pain, with a rapid onset and worsening with abdominal stretching or cough.

The localized pain only in the affected area and the evidence of a CT and/or ultrasonographic finding can orient to an exact diagnosis.

On CT images there is the evidence of an oval lesion with a central area of fat attenuation with surrounding inflammation with fat stranding. Corresponding to the pain area and the CT finding, on ultrasonography there is a hyperecoic mass

surrounded by hypoechoic peripheral ring with no positivity at ColorDoppler.

TREATMENT

Once a correct diagnosis has been performed, an adequate treatment should be give.

At first instance, an anti-inflammatory and antibiotic therapy is administered, even if clinical and imaging follow-up is necessary.

Sometimes recovery occurs in few weeks, in some cases during months.

In our case, a progressive worsening of the symptomatology occurs and an abdomen CT with intravenous contrast media confirmed the diagnosis and allowed to evaluate the evolution of the disease with a possible necrosis of epiploic appendage.

The appearance of the dot sign raised to a complication of the disease and, associated to the clinical worsening inclined towards a laparoscopic excision.

The surgical piece and the histological analysis confirmed the hypothesis of a necrotic epiploic appendage [11,12].

In conclusion the knowledge of the signs of an epiploic appendagitis is essential to do a correct diagnosis, even if It is a rare disease [13].

Then, the imaging follow-up, expecially in case of clinical doubts is crucial to modify the treatment, avoiding severe complications in patients, often young men.

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Table 1. Causes of abdominal pain in differential diagnosis with epiploic appendagitis

MOST FREQUENT	Diverticulitis Omental infarction Mesenteric Panniculitis Sclerosing Mesenteritis Tumor or Metastasis of Mesocolon Nephrolithiasis Pyelonephritis
FEMALE PATIENTS	Ovarian torsion Ovarian cyst rupture Ectopic pregnancy
RIGHT SIDE PAIN	Appendicitis Cholecystitis

Table 2. Differential diagnosis between diverticulitis and epiploic appendagitis

	DIVERTICULITIS	***EPIPLOIC APPENDAGITIS***
Lower quadrant pain	Yes	Yes
Tenderness	Diffuse	Affected area
Nausea Vomiting Appetite changing	Yes	No
Fever	Yes	No
Leukocytosis	Yes	No
Inflammatory markers	Yes	Yes
Worsening with Valsalva or cough	No	Yes

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Figure 1. Axial (A) and coronal reconstruction (B) contrast CT images in arterial phase showing an oval fat density mass on left side on the anti-mesenteric side of the descendent colon associated to fat stranding

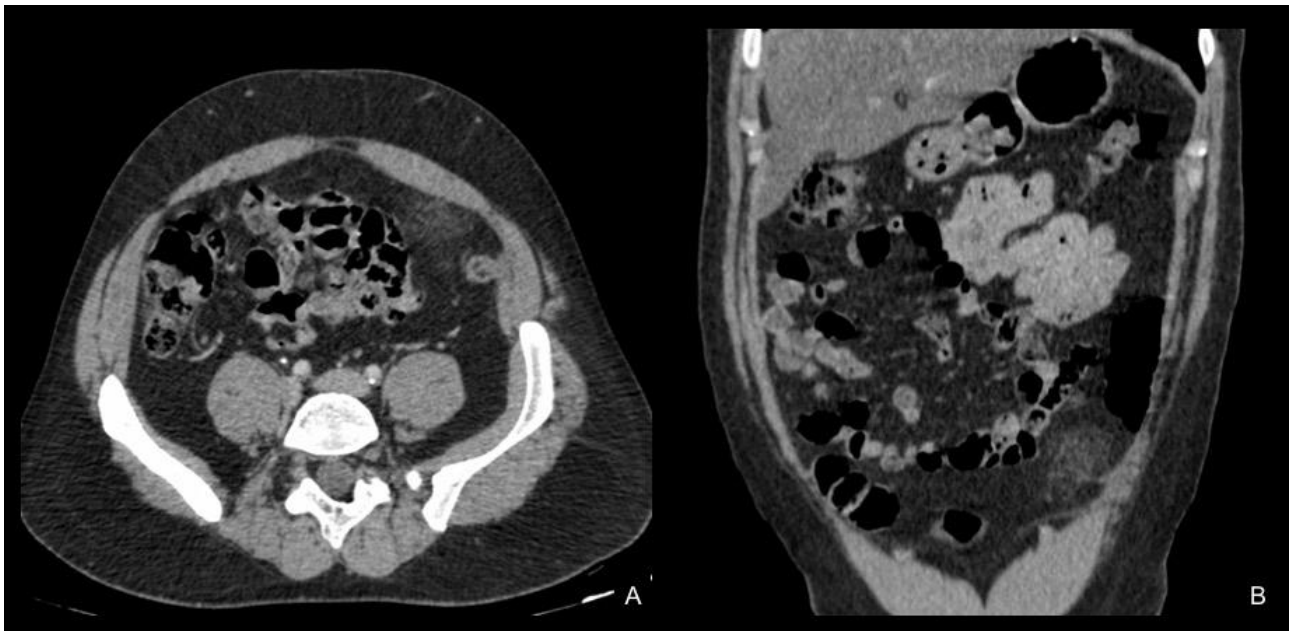

Figure 2. Axial (A) and magnification (B) non contrast CT images after ten hours.
The images show a worsening of the disease with colonic and peritoneal involvement and the "dot sign", indicative of necrosis of the epiploic appendage.

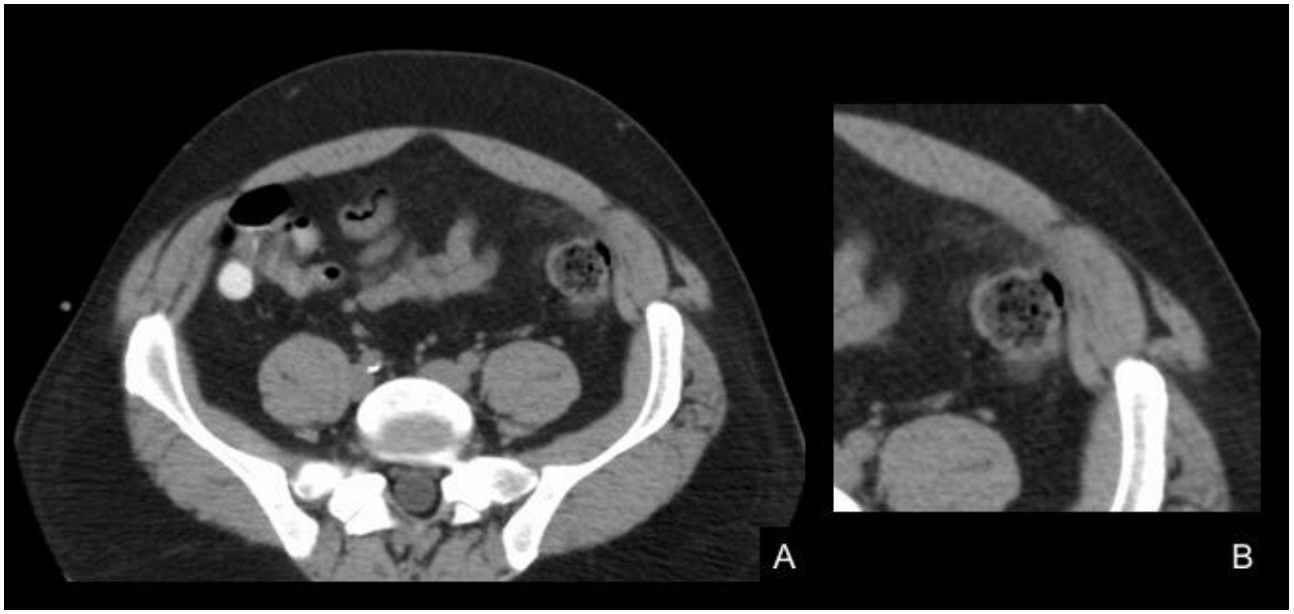

Figure 3. Coronal reconstruction (A) of the Fig. 2 axial images and (B) surgical piece that confirm the necrotic appearance of the appendage.