

# Epiploic Appendagitis: CT and MRI Features: Case Presentation

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## Citation

A A Mohamed, O Shareefi, K M Hussin, F S Alnehmi. *Epiploic Appendagitis: CT and MRI Features: Case Presentation*. The Internet Journal of Surgery. 2014 Volume 31 Number 1.

## Abstract

Epiploic appendagitis is a rare self-limiting condition and results from either torsion or inflammation of an appendix epiploica of the colon. We report a case of sigmoid epiploic appendagitis diagnosed pre-operatively and treated conservatively.

## INTRODUCTION

Epiploic appendagitis is a rare clinical entity. Depending on its location, epiploic appendagitis may mimic nearly any acute abdominal condition. We report a case of sigmoid epiploic appendagitis in a young male presented with left lower abdominal pain mimicking acute diverticulitis. We also demonstrate the CT scan and MRI features of the condition.

## CASE REPORT

A 36-year-old male patient presented to the ER department complaining of left-side lower abdominal pain for three days duration. He described the pain as of sudden onset and severe in nature initially, but it gradually eased off after few hours and then remained constant. He had no vomiting or change of bowel habits and no urinary symptoms.

On examination, the patient was afebrile with normal vital signs. Abdominal examination revealed tenderness, rebound tenderness and muscle rigidity over the left lumbar and left para-umbilical region.

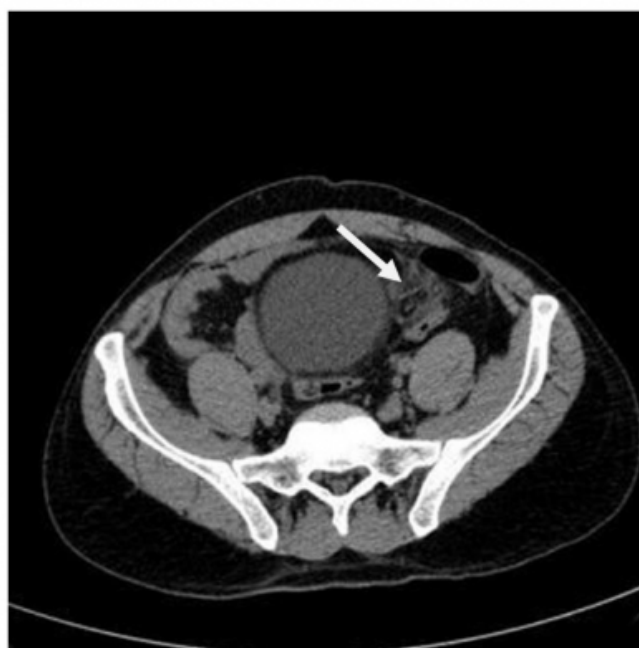
The blood investigations including CBC, urea & electrolytes, and serum amylase were within normal limits.

Plain x-ray of the abdomen was unremarkable.

The CT-scan of the abdomen and pelvis (without IV contrast administration) showed an oval-shaped fat density lesion with thin wall and central dot sign, associated with inflammation in the surrounding fat, at the left iliac fossa close to the sigmoid colon wall (figure1-3).

## Figure 1

1-3: CT scan of abdomen and pelvis without IV contrast administration showing an oval-shaped fat density lesion with thin wall and central dot sign associated with inflammation in the surrounding fat, seen at the left iliac fossa close to the sigmoid colon wall.



**Figure 2**



**Figure 3**



**Figure 4**

4-6: The CT-scan of the same patient after IV contrast administration showing enhancement of the wall of the oval-shaped lesion and the surrounding fat stranding indicating an inflammatory process.



**Figure 5**



**Figure 6**

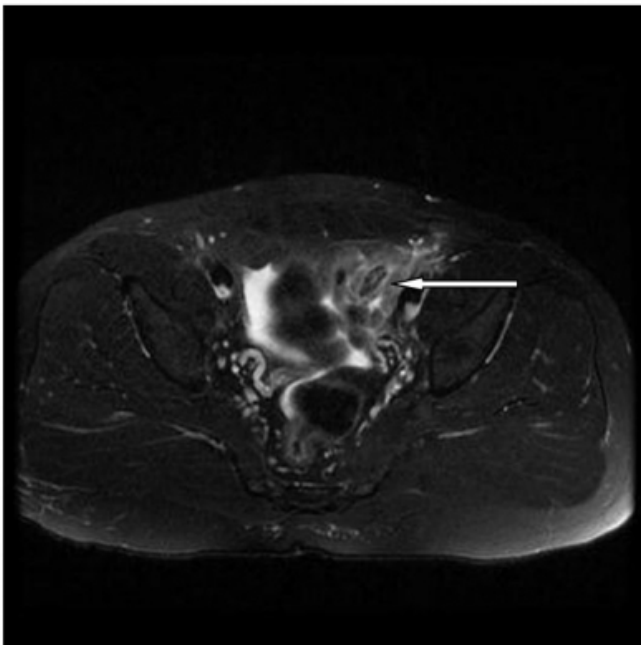


Diagnosis of primary torsion of a sigmoid epiploic appendix (epiploic appendagitis) was established on the classical CT scan findings.

MRI was done to demonstrate the MRI findings of the condition (figure7-10).

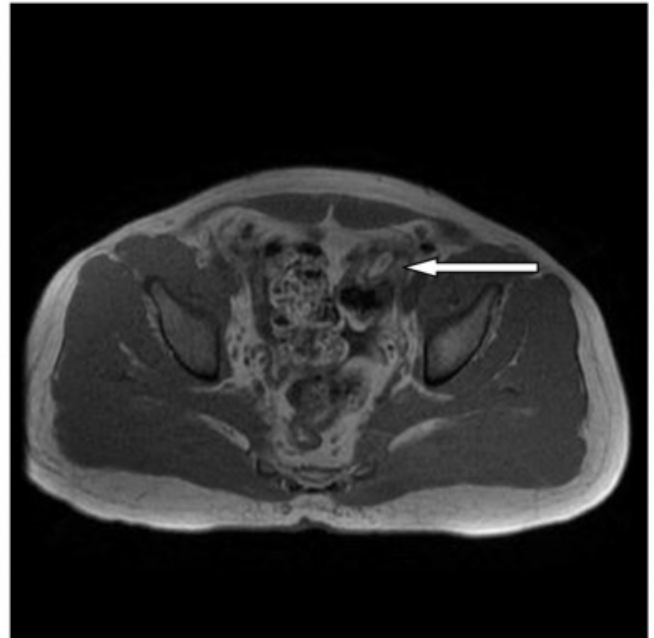
**Figure 7**

MRI axial fat sat: showing left iliac fossa inflamed fat with an oval-shaped fat suppressed signal area containing a central high signal dot.



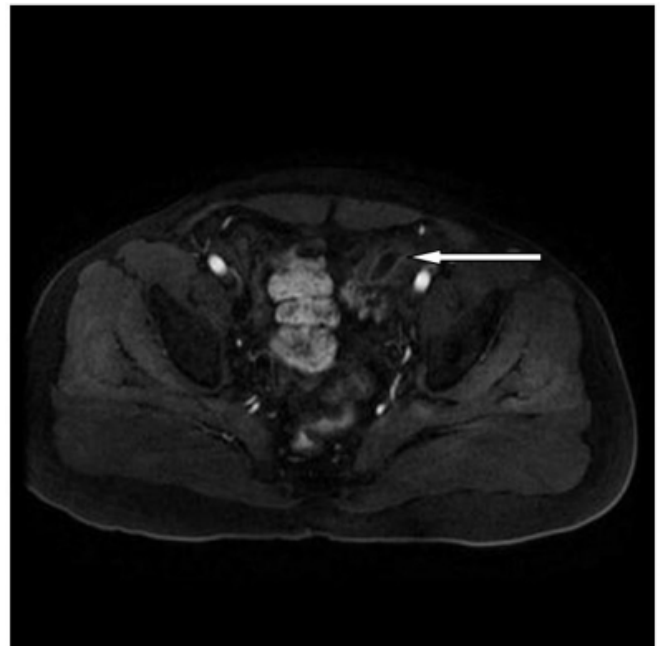
**Figure 8**

Axial MRI of the pelvis showing an oval-shaped fat signal lesion at the perisigmoid area, left iliac fossa, with altered signal intensity of the surrounding fat with central hypo-intense dot and rim.



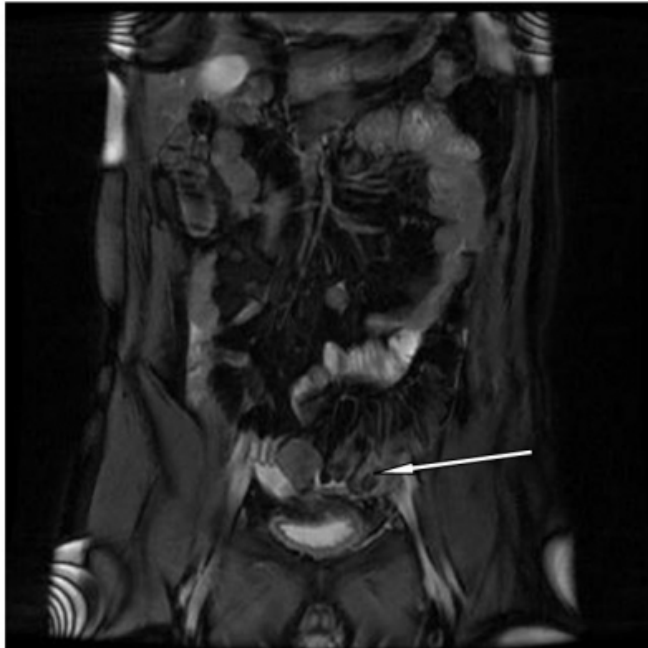
**Figure 9**

Axial (LAVA) image with contrast showing the enhanced wall of the oval-shaped lesion at the left iliac fossa and minimal enhancement of the surrounding fat.



**Figure 10**

Coronal fat sat image showing a fat suppressed oval-shaped lesion at the left iliac fossa with non-suppressed surrounding area (inflamed fat).



The patient was treated conservatively with IV antibiotics. His symptoms completely resolved in 48 hours and he was discharged on the fifth day.

**DISCUSSION**

The appendices epiploicae are lobular pedunculated subserosal fatty masses projecting from the anterior and posterolateral walls of the ascending and descending colon. A single row projects from the transverse colon. They are numerous (typically 100), 2 to 5cm in length, and most prominent along the descending and sigmoid colon (1). They occur in the rectosigmoid junction (57%), ileocecal region (26%), ascending colon (9%), transverse colon (6%), and descending colon (2%) (2-3).

Each epiploic appendix is supplied by one or two small end arteries branching from the long rectal vessels of the colon and is drained by a tortuous vein passing through its narrow pedicle. Their limited blood supply, together with their peduncle shape and excessive mobility, make them prone to spontaneous torsion and ischemic or hemorrhagic infarction (4).

Briggs, in 1908, was the first to report a case of an epiploic appendix torsion (appendagitis) mimicking appendicitis (5). The term epiploic appendagitis was first used by Lynn et al. in the mid-1950s (6).

The condition usually affects patients in their 2nd to 5th decades with a predilection for women and obese individuals, presumably due to larger appendices (7).

Depending on its location, epiploic appendagitis may mimic nearly any acute abdominal condition. An infarcted appendage of the right colon may mimic cholecystitis or appendicitis (8), those of the sigmoid colon may mimic acute diverticulitis.

Diagnosis of the condition is rarely made preoperatively owing to lack of specific symptoms (9). However, due to increased use of imaging tools in patients with acute abdominal symptoms, epiploic appendagitis is much more frequently diagnosed than before (10).

Diagnosis depends on high index of clinical suspicion and it should be suspected in patients with sudden onset of sharp localized pain either in the left or right iliac fossa with minimal gastrointestinal symptoms and normal or slightly elevated white blood count. We observed from this case and two other cases that we reported before (11), that the clinical appearance of the patients with epiploic appendagitis is not consistent with appendicitis or diverticulitis of the same duration, as they generally look well.

Clinical signs of the condition are mainly signs of localized peritonitis in form of localized tenderness, rebound tenderness and muscle rigidity related to the site of the appendage.

A correct diagnosis of epiploic appendagitis with imaging procedures enables conservative and successful outpatient management of the condition and avoids unnecessary surgical intervention and associated additional health-care costs (12).

Diagnosis can be achieved with imaging modalities of which computed tomography is the gold standard procedure (13).

Recognition of specific imaging abnormalities enables the radiologist to make the correct diagnosis. This is important, as the appropriate management of the condition is often conservative (14).

Ultrasonography guided by the patient's area of maximal tenderness may reveal a rounded, non-compressible, hyperechoic mass, without internal vascularity, and surrounded by a subtle hypoechoic line (2). They are typically 2-4cm in maximal diameter and typically exert a local mass effect but are not usually associated with bowel

wall thickening or ascites (2). Absence of flow at color Doppler sonography is an additional feature of epiploic appendicitis (15).

On CT, the lesion appears as a fatty mass, which is connected to the serosal surface of the colon and has slightly higher attenuation than peritoneal fat. All masses have periappendiceal fat stranding, and a few may have a central dot of high attenuation, possibly caused by a thrombosed vessel in the epiploic appendix or by the opposing surfaces of two adjacent appendices (16)

Although MRI is not frequently performed for this indication, MRI features are also characteristic (7). Magnetic resonance findings include an ovoid fat intensity with a central dot on T1 and T2 weighted images, which possess an enhancing rim with gadolinium (17).

Laparoscopic exploration of the peritoneal cavity will establish the correct diagnosis and provide the treatment during the same procedure (18). It provides a good alternative to imaging techniques if the condition is suspected pre-operatively.

Epiploic appendagitis recently has been demonstrated to be predominantly self-limiting. Laparotomy is no longer considered necessary and the conservative treatment has been shown to be safe (19). However, if the diagnosis is made by open or laparoscopic exploration, the necrotic appendage should be removed by ligation of its vascular pedicle and its peritonization with seromuscular sutures (20).

### SUMMARY

Epiploic appendagitis is a rare clinical entity. Depending on its location, epiploic appendagitis may mimic nearly any acute abdominal condition. An infarcted appendage of the right colon may mimic cholecystitis or appendicitis, those of the sigmoid colon may mimic acute diverticulitis.

Diagnosis can be achieved with imaging modalities of which computed tomography is the gold standard procedure (13).

Recognition of specific imaging abnormalities enables the radiologist to make the correct diagnosis and physicians to treat patients conservatively, avoiding unnecessary surgical intervention and associated additional health-care costs.

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