

**History of Present Illness and Physical Exam**

A 45 year old male presented to the emergency department for the chief complaint of abdominal pain. He reported that two days previously he developed abdominal pain shortly after finishing lunch, with worse pain overnight with right flank and right lower quadrant pain without radiation into the groin. He otherwise denied any fevers, urinary symptoms, or vomiting. He had a history of nonalcoholic fatty liver disease and no previous abdominal surgeries.

Physical exam revealed an anxious appearing male with normal vital signs. Cardiopulmonary examination was unremarkable. The patient had normal male external genitalia with mild pain to palpation of the right lower quadrant without rebound, guarding to peritoneal signs. The patient had a normal musculoskeletal and dermatologic examination.

**Questions and Answers**

Questions:

- 1)What is depicted in the pictures below?
- 2)What is the management of this condition?

Answers:

CT with IV contrast of the abdomen and pelvis showed an ovoid area of mesenteric fat stranding and edema with central nodularity adjacent to the right hepatic flexure, most consistent with epiploic appendagitis. No focal fluid collection of abscess was visualized and there were a few scattered colonic diverticula without evidence of acute diverticulitis. The patient was provided fluids, toradol and Zofran and was able to be discharged home in medically stable condition.

**Tests/Results**

**Initial Labs**

WBC 7, Hgb 12 Hct 24  
 Na 137, K 4.3, Creatinine 0.50, BUN 12  
 ALT 70, AST86  
 Urine: no blood, no leukocytes, no nitrites

**Imaging**

CT with IV contrast *an* ovoid area of mesenteric fat stranding and edema with central nodularity adjacent to the right hepatic flexure, most consistent with epiploic appendagitis. No focal fluid collection suggesting an abscess was visualized, though there were a few scattered colonic diverticula without evidence of acute diverticulitis.

**Imaging**

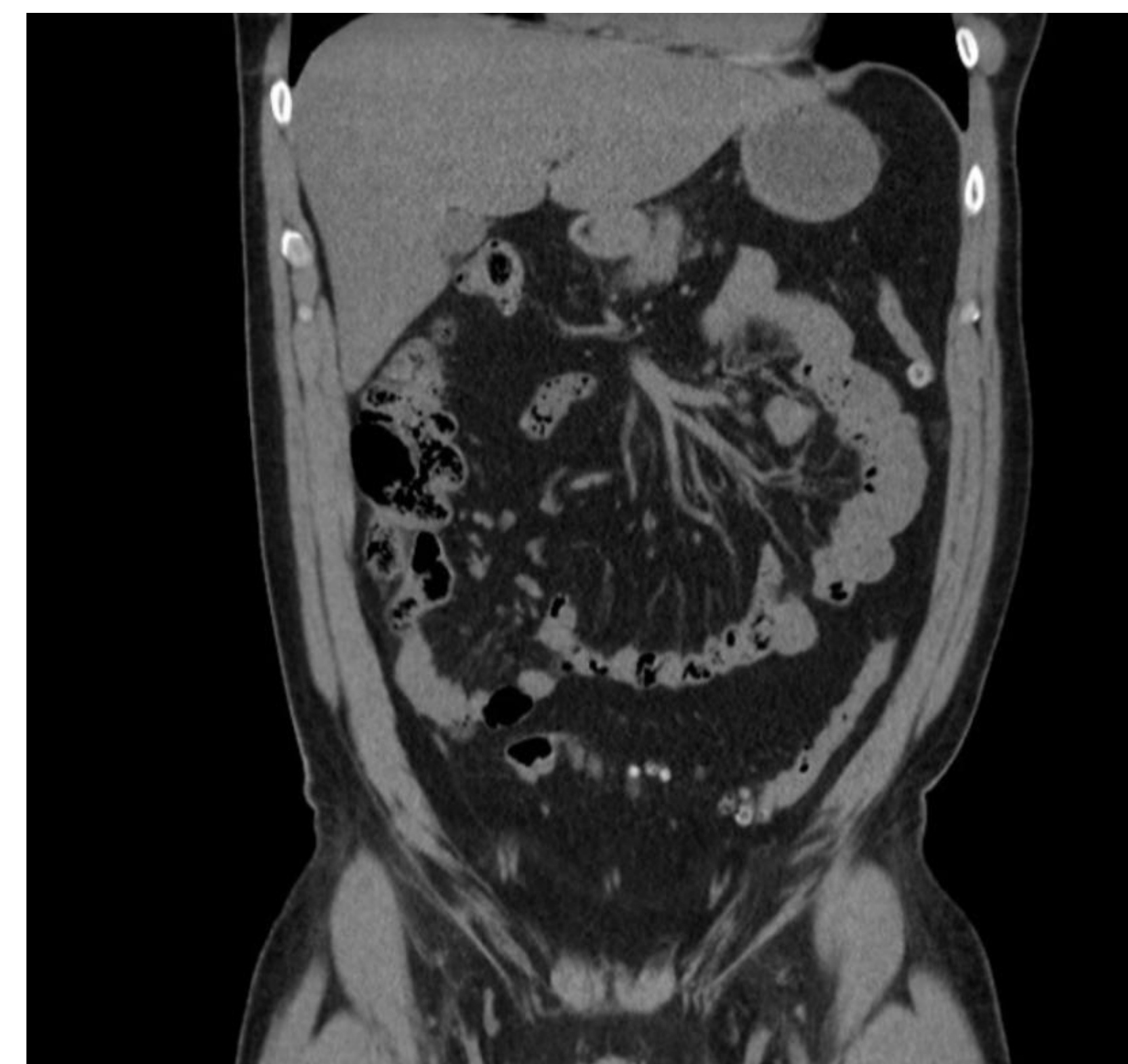


Figure 1&2: CT abdomen/pelvis

**Take Home Points**

- 7% of patients with suspected sigmoid diverticulitis are diagnosed with epiploic appendagitis on CT.
- Primary epiploic appendagitis is secondary to thrombosis or torsion of the epiploic appendix, while secondary is associated with inflammation of adjacent organs.
- Management is conservative.
- Misdiagnosis may have significant unintended consequences.

1. Rao PM, Rhea JT, Wittenberg J, Warshaw AL. Misdiagnosis of primary epiploic appendagitis. *Am J Surg.* 1998;176(1):81-5.
2. Mollà E; Ripollés T; Martínez MJ; Morote V; Roselló-Sastre E; . (n.d.). Primary epiploic appendagitis: US and CT findings. Retrieved December 01, 2020, from <https://pubmed.ncbi.nlm.nih.gov/9510579/>
3. Subramaniam, R. (2006, October). Acute appendagitis: Emergency presentation and computed tomographic appearances. Retrieved December 01, 2020, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2579618/>
4. Suresh Kumar, V., Mani, K., Alwakaa, H., & Shina, J. (2019, September 05). Epiploic Appendagitis: An Often Misdiagnosed Cause of Acute Abdomen. Retrieved December 01, 2020, from <https://www.karger.com/Article/FullText/502683>.

**Discussion**

Over 7% of patients presenting to the emergency department with symptoms clinically consistent with sigmoid diverticulitis are found to have primary epiploic appendagitis. The epiploic appendix is a small pouch of peritoneum that is filled with fat and small vessels and protrudes from the serosal surface of the colon. Primary epiploic appendagitis is due to a torsion or venous thrombosis of the involved epiploic appendage. Secondary epiploic appendagitis is associated with inflammation of adjacent organs such as in cases of diverticulitis, appendicitis or cholecystitis. Oftentimes acute epiploic appendagitis is misdiagnosed as diverticulitis and appendicitis, which can lead to unneeded hospitalization and even surgeries. Epiploic appendagitis is increased in those with obesity, history of hernias, and exercise injuries. It is more common in males in their 3<sup>rd</sup> to 5<sup>th</sup> decades of life .

Clinical manifestations include acute abdominal pain, most commonly in the left lower quadrant. Patients are oftentimes afebrile and have unremarkable labs. CT imaging is the test of choice for diagnosis and findings include a fat density ovoid lesion also known as the hyperattenuating ring sign, mild bowel wall thickening, and a central high attenuation focus within the fatty lesion (central dot sign).

Management of acute epiploic appendagitis is conservative and symptoms often resolve in a few days. In a retrospective study 660 CT scans performed for suspected diverticulitis or appendicitis were looked at and it was found that 11 scans (2%) showed features consistent with epiploic appendagitis, of which only 4 were originally reported as appendagitis; 6 were misdiagnosed as diverticulitis and 1 was misdiagnosed as appendicitis. All of the misdiagnosed patients were hospitalized and 6 of the 7 received antibiotics. This is an important diagnosis to differentiate from acute appendicitis, as if the diagnosis of acute epiploic appendagitis is missed there the patient is often harmed with unneeded patient expenses, unwarranted surgical consults, antibiotics and the possibility of an unneeded surgery.