CLINICAL VIGNETTE

Epiploic Appendagitis: A Mimic of Acute Diverticulitis and Acute Appendicitis

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Case Presentation

A 45-year-old male presented to the office with a four-day history of left lower quadrant abdominal pain. The pain was mild to moderate described as, achy and non-radiating. He denied nausea, vomiting, fever, chills, dysuria, heartburn, weight loss, postprandial fullness, early satiety, or changes in bowel habits. Past medical history includes hypertension, gastroesophageal reflux and dyslipidemia. He had no prior colonoscopy. Physical examination notable for a well appearing individual with mild left lower quadrant abdominal tenderness. He was afebrile and normotensive. Abdominal exam was without rebound or guarding and negative for a palpable mass. Due to a concern for acute diverticulitis, he was started on a ten-day course of ciprofloxacin and metronidazole. Complete blood count and comprehensive metabolic panel returned unrevealing. Computed tomography (CT) of the abdomen and pelvis with intravenous contrast was ordered and performed eight days later. It revealed a fat lobule with hyperattenuating rim and a small amount of adjacent fat stranding anterior to the descending colon. Antibiotics were stopped and he continued ibuprofen and acetaminophen for pain control. The abdominal pain resolved within several days, but he developed non-bloody diarrhea about a month after stopping antimicrobial therapy. Stool studies subsequently detected Clostridium difficile via polymerase chain reaction testing; and a ten-day course of oral vancomycin was completed with resolution of diarrhea.

Discussion

Epiploic appendages are peritoneal outpouchings composed of adipose tissue and vasculature that extend and protrude from the serosal surface of the colon. These structures typically range from 0.5 to 5cm in length and 1-2 cm in thickness and 50-100 in quantity.[1] The function of epiploic appendages is unclear but may function in cushioning, absorption, and immunity.[2] Potential risk factors include obesity, strenuous exercise, and hernia. They most commonly occur in males in the fourth to fifth decades of life.[3]

Epiploic appendagitis is detected in 2-7% of individuals presumed to have diverticulitis and in 0.2-1 percent of individuals who have symptoms suggesting appendicitis.[4] The most common locations of acute epiploic appendagitis, are adjacent to the sigmoid colon, the descending colon, and the right hemicolon.[3]

Epiploic appendagitis may be primary or secondary. The primary form is usually caused by the torsion of an epiploic appendage, but it can also be caused by the spontaneous thrombosis of the central draining vein, which results in ischemic or hemorrhagic infarction and ensuing inflammation. In contrast, secondary epiploic appendagitis is due to the extension from adjacent inflamed organs, such as from diverticula, appendix, gallbladder, and pancreas.[5]

Individuals with epiploic appendagitis most commonly present with lower abdominal pain, more commonly on the left and are commonly misdiagnosed as acute diverticulitis or acute appendicitis. Most patients are afebrile and without leukocytosis, nausea and vomiting.

Due to the lack of distinctive clinical features, diagnosing epiploic appendagitis is difficult. Epiploic appendagitis is typically diagnosed via CT of the abdomen. Before widespread CT use, it was only diagnosed accurately during surgery. CT findings include a fat-density ovoid structure adjacent to the colon, with thin high-density rim, surrounding inflammatory fat stranding and thickening of the adjacent peritoneum. A central hyperdense dot signifies the thrombosed vascular pedicle, an inflamed appendage located on the anterior aspect of the sigmoid or descending colon. If CT is unavailable, ultrasound and magnetic resonance imaging (MRI), may also be utilized especially in pediatric and obstetric populations. Ultrasound findings reveal an ovoid, non-compressible, hyperechoic mass line at the point of maximal tenderness, without internal vascularity bordered by a faint hypoechoic line.[6] MR imaging shows an oval mass with fat tissue signal intensity and ring enhancement with gadolinium.[7]

In most patients, epiploic appendagitis is a benign and self-limiting condition, which resolve in less than ten days. Limited research has been published on treatment of epiploic appendagitis. Pain control is generally the only treatment. This typically consists of non-steroidal anti-inflammatory drugs (NSAIDs) and if needed, opiates. Surgical therapy is indicated in patients that fail to improve with conservative management, new or worsening symptoms such as fever, severe pain, vomiting, or inability to tolerate oral intake, or for those that develop complications such as adhesions, bowel obstruction, intussusception, peritonitis, intraperitoneal loose body, or development of abscess that cannot be managed nonoperatively. Surgical therapy involves ligation and resection of the inflamed appendage.[8]

Conclusion

In conclusion, epiploic appendagitis is an uncommon, self-limited condition that is difficult to diagnosis by history and physical examination. Thus, CT imaging, is usually needed for definitive diagnosis. It is commonly misdiagnosed as acute diverticulitis or acute appendicitis due to overlapping features. It is important to be aware of this condition considering potential complications. Inaccurate diagnosis could lead to unnecessary hospitalization, antibiotic use, dietary restrictions, and unwarranted surgery.

REFERENCES

1. **Ross JA**. Vascular loops in the appendices epiploicae; their anatomy and surgical significance, with a review of the surgical pathology of appendices epiploicae. *Br J Surg*. 1950 Apr;37(148):464-6. doi: 10.1002/bjs.18003714807. PMID: 15414301.
2. **Vinson DR**. Epiploic appendagitis: a new diagnosis for the emergency physician. Two case reports and a review. *J Emerg Med*. 1999 Sep-Oct;17(5):827-32. doi: 10.1016/s0736-4679(99)00090-6. PMID: 10499697.
3. **Singh AK, Gervais DA, Hahn PF, Sagar P, Mueller PR, Novelline RA**. Acute epiploic appendagitis and its mimics. *Radiographics*. 2005 Nov-Dec;25(6):1521-34. doi: 10.1148/rg.256055030. PMID: 16284132.
4. **Schnedl WJ, Krause R, Tafeit E, Tillich M, Lipp RW, Wallner-Liebmann SJ**. Insights into epiploic appendagitis. *Nat Rev Gastroenterol Hepatol*. 2011 Jan;8(1):45-9. doi: 10.1038/nrgastro.2010.189. Epub 2010 Nov 23. PMID: 21102533.
5. **Jalaguier A, Zins M, Rodallec M, Nakache JP, Boulay-Coletta I, Jullès MC**. Accuracy of multidetector computed tomography in differentiating primary epiploic appendagitis from left acute colonic diverticulitis associated with secondary epiploic appendagitis. *Emerg Radiol.* 2010 Jan;17(1):51-6. doi: 10.1007/s10140-009-0822-x. Epub 2009 Jun 11. PMID: 19517148.
6. **Rioux M, Langis P**. Primary epiploic appendagitis: clinical, US, and CT findings in 14 cases. *Radiology*. 1994 May;191(2):523-6. doi: 10.1148/radiology.191.2. 8153333. PMID: 8153333.
7. **Sirvanci M, Balci NC, Karaman K, Duran C, Karakaş E**. Primary epiploic appendagitis: MRI findings. *Magn Reson Imaging*. 2002 Jan;20(1):137-9. doi: 10.1016/ s0730-725x(02)00478-2. PMID: 11973040.
8. **Patel VG, Rao A, Williams R, Srinivasan R, Fortson JK, Weaver WL**. Cecal epiploic appendagitis: a diagnostic and therapeutic dilemma. *Am Surg*. 2007 Aug;73(8):828-30. PMID: 17879696.