Journal of Community Hospital Internal Medicine Perspectives

co-action PUBLISHING

CASE REPORT

Abdominal pain – learning when not to intervene!

Niranjan Tachamo, MD*, Bidhya Timilsina, MD, Salik Nazir, MD and Saroj Lohani, MD

Department of Medicine, Reading Hospital, West Reading, PA, USA

Epiploic appendagitis (EA) is an uncommon cause of abdominal pain. It is a benign condition but may mimic other serious causes of acute abdomen such as appendicitis, diverticulitis, and gynecological emergency in severe cases. Knowledge of this condition in the differential diagnosis of abdominal pain can save unnecessary hospital admission, antibiotics, and surgery. In this article, we present the case of a 43-year-old female who presented to our hospital with a 2-day history of right lower quadrant abdominal pain and diarrhea. She was diagnosed with EA with computed tomography of abdomen with contrast and was managed conservatively with good outcome.

Keywords: *abdominal pain*; *abdominal CT*; *conservative management*; *diverticulitis*; *epiploic appendagitis*; *epiploic appendage*; *hyperattenuating ring*

*Correspondence to: Niranjan Tachamo, Department of Medicine, Reading Health System, Sixth Avenue and Spruce St, West Reading, PA, 19611, USA, Email: niranjantachamo@gmail.com

Received: 23 July 2016; Revised: 7 November 2016; Accepted: 15 November 2016; Published: 15 December 2016

Epiploic appendages are 50–100 pedunculated, fat-filled outpouchings of the colon from the cecum to the rectosigmoid junction (1–6). Each appendage is supplied by one or two arterioles and drained by a single venule (4–8). Ischemia, infarction, or torsion of the appendage results in epiploic appendagitis (EA) which can mimic acute appendicitis, diverticulitis, cholecystitis, or acute gynecological disorder depending on the site of involvement of epiploic appendages (1, 3, 6, 9). EA is a rare cause of abdominal pain; however, it should always be kept in the differential diagnosis of abdominal pain as it may help avoid unnecessary hospital admissions and interventions.

Case presentation

A 43-year-old obese Caucasian female presented to the emergency department of our hospital with a 2-day history of abdominal pain and diarrhea. Abdominal pain was located on right lower quadrant, non-radiating, and was not related to food intake. She had nausea, vomiting, and watery diarrhea but no blood in stool or vomitus. She denied any fever, skin rash, joint pain, dysuria, black stool, or weight change. There was no sick contact or recent travel history. There was no history of smoking or illicit drug use. She denied any significant stressors at home or at work. There was no personal or family history of irritable bowel syndrome, inflammatory bowel disease, or gastrointestinal malignancies.

On physical examination, she was afebrile and hemodynamically stable. Her body mass index was 34 kg/m^2. Abdominal examination revealed soft and non-distended abdomen with normoactive bowel sounds, but tenderness to palpation was noted in right lower quadrant without rebound or rigidity. Rest of the examination was otherwise unremarkable.

Pertinent labs included the following: White blood cell count (WBC) 10,200/uL (4,800–10,800/uL), hemoglobin 12.8 g/dL (12–16 g/dL), platelet 337,000/uL (130,000–400,000/uL), lipase 30 IU/L (11–82 IU/L), Aspartate transaminase (AST) 15 IU/L (13–39 IU/L), C-reactive protein (CRP) 7.14 mg/dL ($<$1.00 mg/dL), Erythrocyte sedimentation rate (ESR) 14 mm/h (0–20 mm/h), and Thyroid stimulating hormone (TSH) 0.827 uIU/mL (0.3–5 uIU/mL).

Computed tomography (CT) scan of the abdomen and pelvis with contrast was initially reported as right-sided diverticulitis, and she was started on intravenous (iv) ampicillin-sulbactam overnight. The CT scan was subsequently revised in the morning by our hospital radiologist. Since the CT scan showed small ovoid soft tissue density in the right lower quadrant with mild surrounding infiltrative changes (Fig. 1), it was suggestive of EA rather than diverticulitis. IV antibiotics were stopped, and she was managed conservatively with as needed analgesia. She improved remarkably within the next day and was discharged home. She did not have any recurrence in the following 6 months.

Citation: Journal of Community Hospital Internal Medicine Perspectives 2016, **6**: 32960 - http://dx.doi.org/10.3402/jchimp.v6.32960

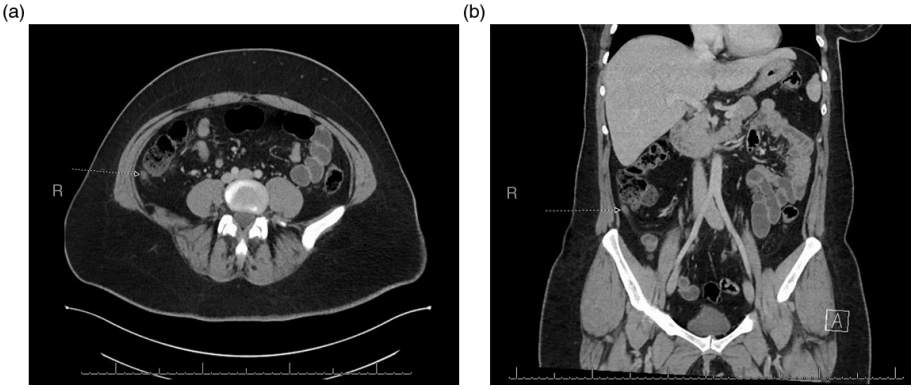

Fig. 1. (a) Axial view and (b) coronal view, with arrows pointing toward small ovoid soft tissue density in the right lower quadrant adjacent to the ascending colon, with mild surrounding infiltrative changes.

Discussion

Epiploic appendages were first described by Vesalius in 1543 (10, 11). However, the term 'Epiploic appendagitis' was first introduced by Lynn et al. in 1956 (13). These appendages are usually 0.5–5 cm in length, 50–100 in number (3–8, 10–12), and are attached to colonic wall by vascular stalks containing 1–2 arterioles and a single venule (8, 11). Their limited blood supply and lobulated shape increase their mobility and risk of torsion (5, 12). As epiploic appendages are widespread in colon, EA can occur anywhere; however, the most common sites are rectosigmoid junction (57%), ileocecal region (26%), ascending colon (9%), transverse colon (6%), and descending colon (2%) (10). EA has been reported in up to 7% of patients suspected of diverticulitis and in up to 1% of patients suspected of appendicitis (3, 6, 10).

EA can be primary or secondary. Primary EA occurs due to localized sterile inflammation of epiploic appendages because of torsion or spontaneous venous thrombosis (3, 6, 10). Secondary EA, on the contrary, occurs due to adjacent disease process such as appendicitis, diverticulitis, cholecystitis, and inflammatory bowel disease (3, 10). It occurs most commonly due to colonic diverticulitis and resolves with the treatment of underlying disease (10).

EA is relatively uncommon. The exact incidence is unknown; however, it is estimated to be around 8.8 cases/million population/year (8). It usually affects middle-aged males between 20s and 50s (8, 10). However, some literature suggest no sex predilection (4, 11). EA is uncommon in children as epiploic appendages are not well developed (10). EA has been associated with obesity and unaccustomed exercise (8, 10, 12). The fact that obese people tend to have larger and more prominent epiploic appendages makes them prone for EA (8).

EA most commonly presents with acute or subacute, non-migratory abdominal pain (10). In a case series of eight patients, the most common symptoms were abdominal pain (88%), nausea (37.5%), diarrhea (25%), anorexia (12.5%), and constipation (12.5%) (8). Other symptoms include early satiety, postprandial fullness, and bloating (10). Fever, chills, and leukocytosis are usually absent, as in our patient (9). Inflammatory markers may be normal or mildly elevated (3).

Diagnosis of EA is difficult and may be missed due to lack of pathognomic clinical features and unawareness among health care providers (10). Diagnosis is usually made by contrast-enhanced CT scan or ultrasonography of abdomen (1–4, 6–10, 12). Ultrasonography findings most commonly include a solid, non-compressible, hyperechoic oval mass with a hypoechoic rim (1, 6, 7, 9, 12). The pathognomic finding on CT abdomen is a hyperattenuated 2–3 cm oval-shaped fat density with paracolonic inflammation and fat stranding (3–12), as in our patient. Absence of hyperattenuating ring favors omental infarction, while long segment colonic wall thickening extending more than 5 cm with presence of colonic diverticula with inflammation or abscess in mesocolon favors acute diverticulitis (12). It should be noted that EAs are visible on the CT scan only when they are inflamed or surrounded by fluid, thus clinching the diagnosis (7, 10). CT findings may persist for up to 6 months (7, 12). In recent years, the increasing use of CT abdomen to evaluate abdominal pain has led to increased recognition of EA (10).

Unlike other surgical causes of acute abdomen, EA responds well to conservative management with non-steroidal anti-inflammatory drugs and/or short course of opioids and does not usually require antibiotics or surgery (1–3, 9). Complete resolution of symptoms usually occurs within 3–14 days (3). Surgery may be required in recurrent cases or complications (6). Complications, although extremely uncommon (3), may include local abscess formation, intussusception, and bowel obstruction, due to adhesions from surrounding colonic inflammation (10).

Teaching points

1. Although EA is rare, it should always be kept in the differential diagnosis of abdominal pain as it may help avoid unnecessary hospital admission, antibiotic therapy, and surgery.
2. Contrast-enhanced CT or ultrasonography abdomen is used to definitively diagnose this condition from other causes of abdominal pain.
3. In contrast to other serious causes of acute abdomen, management of EA is usually conservative with analgesia.

Conflict of interest and funding

The authors declare that there is no conflict of interest regarding the publication of this article.

References

1. Shields AM, Dean H, Atkinson S. A twist in the tale: Epiploic appendagitis mimicking acute appendicitis. BMJ Case Rep 2014; 2014. doi: http://dx.doi.org/10.1136/bcr-2013-203055
2. Savage L, Gosling J, Suliman I, Klein M. Epiploic appendagitis with acute appendicitis. BMJ Case Rep 2013; 2013. doi: http://dx.doi.org/10.1136/bcr-2013-010333
3. Akinosoglou K, Kraniotis P, Thomopoulos K, Assimakopoulos SF. Epiploic appendagitis: A non-surgical cause of acute abdomen. Ann Gastroenterol 2015; 28(2): 296–8.
4. Rashid A, Nazir S, Hakim SY, Chalkoo MA. Epiploic appendagitis of caecum: A diagnostic dilemma. Ger Med Sci 2012; 10: Doc14. doi: http://dx.doi.org/10.3205/000165
5. Patel NB, Wenzke DR. Evaluating the patient with right lower quadrant pain. Radiol Clin North Am 2015; 53(6): 1159–70. doi: http://dx.doi.org/10.1016/j.rcl.2015.06.004
6. Gourgiotis S, Oikonomou C, Veloudis G, Lardou I, Pittaras G, Villias C. The diagnostic dilemma of primary epiploic appendagitis and how to establish a diagnosis. Oman Med J 2016; 31(3): 235–7. doi: http://dx.doi.org/10.5001/omj.2016.45
7. Singh AK, Gervais DA, Hahn PF, Sagar P, Mueller PR, Novelline RA. Acute epiploic appendagitis and its mimics. Radiographics 2005; 25(6): 1521–34. doi: http://dx.doi.org/10.1148/rg.256055030
8. Ortega-Cruz HD, Martínez-Souss J, Acosta-Pumarejo E, Toro DH. Epiploic appendagitis, an uncommon cause of abdominal pain: A case series and review of the literature. P R Health Sci J 2015; 34(4): 219–21.
9. Ammar H, Looney SC, Malani A. Epiploic appendagitis. Lancet 2009; 373(9680): 2054. doi: http://dx.doi.org/10.1016/S0140-6736(09)61031-X
10. Schnedl WJ, Krause R, Tafeit E, Tillich M, Lipp RW, Wallner-Liebmann SJ. Insights into epiploic appendagitis. Nat Rev Gastroenterol Hepatol 2011; 8(1): 45–9. doi: http://dx.doi.org/10.1038/nrgastro.2010.189
11. Vinson DR. Epiploic appendagitis: A new diagnosis for the emergency physician. Two case reports and a review. J Emerg Med 1999; 17(5): 827–32.
12. Nadida D, Amal A, Ines M, Makram M, Amira M, Leila BF et al. Acute epiploic appendagitis: Radiologic and clinical features of 12 patients. Int J Surg Case Rep 2016; 28: 219–22. doi: http://dx.doi.org/10.1016/j.ijscr.2016.09.015
13. Lynn TE, Dockerty MB, Waugh JM. A clinico-pathologic study of the epiploic appendages. Surg Gynecol Obstet. 1956; 103: 423–424.