CASE REPORT

PRIMER EPIPLOIC APPENDAGITIS MIMICKING APPENDIX DUPLICATION

Cağrı Tiryaki[1], Murat Burc Yazicioglu[1], Mustafa Celalettin Haksal[1], Ali Ciftci[1], Selim Yigit Yıldız[1]

Authors' Affiliation: [1]Kocaeli Derince Education and Research Hospital Department of General Surgery
Correspondence: Dr. Murat Burc Yazicioglu, Email: mbyazicioglu@gmail.com

ABSTRACT

Primary epiploic appendagitis (PEA) is a rare condition characterized by inflammation of subserosal colonic adipose tissue. It can mimic acute appendicitis or acute diverticulitis in elderly patients. Though previously relatively rare, surgical diagnosis is now being more frequently employed with an increasing use of computerized tomographic scans (CT) and ultrasound. We report here on a case of PEA mimicking an appendiceal duplication with acute appendicitis. To the best of our knowledge, this is a very rare clinical entity in the literature. A 29-year-old female patient was admitted to the emergency department. She had abdominal pain, was vomiting, and suffered from anorexia. The operative finding was double acute appendicitis in appendix duplication. PEA may mimic acute appendicitis and can be considered as an appendix duplication caused by a diagnostic dilemma. It may not be possible to differentiate during an operation; the distinction can be made only by histologic examination. Although both are very rare clinical entities, misdiagnosis of appendix duplication can cause serious health issues, and critical medico-legal issues must also be kept in mind.

Key words: Primary epiploic appendagitis, Appendix Duplication

INTRODUCTION

Appendix epiploica is a normal anatomical structure of subserosal colonic adipose tissue, and there are 50 to 100 appendix epiploica located between the ceacum and the rectosigmoid region (1). Ischemia or inflammation of the epiploica appendix as a result of torsion of the appendix or spontaneous thrombosis of appendical veins are known as primary epiploic appendagitis (PEA). PEA is a rare self-limiting inflammatory condition (1). Recognition of this condition is very important because, if untreated, it may be complicated by intestinal obstruction or peritonitis, which has high mortality (2). In this paper, we report on a case of PEA mimicking appendiceal duplication with acute appendicitis.

CASE PRESENTATION

A 29-year-old female was admitted to the emergency department with right lower quadrant pain, anorexia, and vomiting. The symptoms started 48 hours previously. On physical examination, rigidity and rebound tenderness were noted in the right lower quadrant. Her white blood cell count was 8300/mm^3. Other laboratory values were normal. The urine analysis test and the plain abdominal X-ray did not reveal any specific findings. An abdominal and pelvic ultrasound was performed, and periappendicular fluid and a non-compressible tubular structure with a diameter of 9 mm were detected.

The diagnosis of acute appendicitis was non-questionable, so an open appendectomy using McBurney's incision was performed. In the operation, we found a mild quantity of free inflammatory fluid and two appendices, located in front of the cecum and retrocecal in the right abdominal cavity. Both appendixes were erectile and inflamed (figure 1). A formal appendectomy was performed on both of them. On the 3rd postoperative day, the patient was discharged without event.

Histopathological examination of the specimens revealed acute appendicitis and non-specific chronic inflammatory reactions of the epiploic appendix.

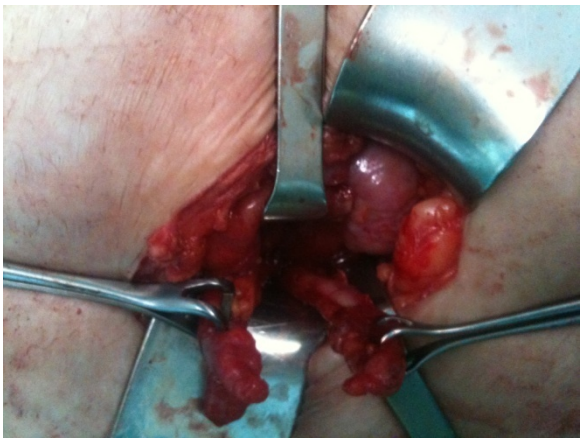

Fig 1: Peroperative view of acute appendicitis and acute epiploic appendicitis

DISCUSSION

Epiploic appendages are pedunculated, with fatty structure 2–5 cm in diameter scattered all over the colon and covered with the peritoneum. They exist more on the left side, especially in the sigmoid colon, with the most common position being anterior to the colonic lumen (3). Epiploic appendages were first anatomically described by Vesalius in 1543. Inflammation of appendices epiploicae was termed PEA by Lynn et al. in 1956 (4). Inflammation of the appendages is caused by a torsion or venous thrombosis causing ischemia or infarction and a self-limiting process. Certain studies have reported that PEA is more prevalent in the obese, aged between 20 and 50 years. Although it is not a gender-specific condition, most reported cases have occurred in males (5).

There are no specific laboratory or imaging methods designed for diagnosing PEA, but with US or CT scans a certain diagnosis of PEA can be determined. In US examination, PEA appears as a round or oval-shaped, non-compressible, echogenic solid lesion over the painful area (6). It is generally accepted that US examination is used in initial investigations in acute abdomen syndromes, but it is not helpful in the final diagnosis of PEA. An abdominal CT should be the preferred diagnostic tool for determining the etiology of acute abdomen syndromes, as increased adipose tissue density, an oval-shaped mass lesion in the paracolic region, and thickening of periappendiceal, peritoneal or colonic segments on the CT scan suggest the presence of PEA (1). In our case, abdominal and pelvic ultrasounds were performed, and periappendicular fluid and a non-compressible tubular structure with diameter of 9 mm were detected. We did not perform an abdominal CT, as we were in no doubt regarding the diagnosis of acute appendicitis.

The clinical manifestations of PEA are acute onset of abdominal pain in the lower quadrant (4). The characteristics of the pain can be sharp, blunt, or colicky. The severity of the pain may increase with deep breathing, coughing, or sneezing. Although migration of the pain is not observed in PEA, unlike in acute appendicitis, its location can be altered by changes in body position, due to the movement of the sigmoid colon (1). Leukocytosis is not commonly associated with this condition (4). Tenderness, rebound, and defense are the frequent examination findings, whereas abdominal rigidity is rarely found. Rarely, nausea, vomiting, anorexia, diarrhea, or constipation and mild fever may accompany abdominal pain. In our case, the patient was admitted to the emergency department with right lower quadrant pain, anorexia, and vomiting, with her symptoms starting 48 hours previously. On physical examination, rigidity and rebound tenderness were noted in the right lower quadrant. Her white blood cell count was 8300/mm^3. We performed an appendectomy using McBurney's incision. We found two appendices that were understood to be a duplication and these two appendicular structures were removed by formal appendectomy.

Though abdominal ultrasound and computer tomography are the primary used imaging examinations, preoperative diagnosis of appendiceal duplication is usually difficult. The exact diagnosis can only be made during the operation and by post-operative pathological examination. We routinely submit all female patients with right quadrant pain to ultrasonography; however, in this patient only one appendix was seen. Though open appendectomy using McBurney's incision is usually preferred, a laparoscopic approach, a minimally invasive technique, is now most widely used and is the preferred technique compared with laparatomy (7). However a laparoscopic approach for appendectomy is not the standard practice in our department, which prefers its use in cases of diagnostic difficulties.

There are no pathognomonic features of primary epiploic appendagitis. The most commonly made preoperative diagnoses are acute vermiform appendicitis (60%), diverticulitis (13%), torsion of an ovarian cyst (6%), or cholecystitis (3%) (8). In most cases, correct preoperative diagnosis can rarely be made. In some cases, the diagnosis is reached during laparotomy or laparoscopy for another condition. In this situation, the lesion may be confused with a neoplastic process or duplication of appendicitis, as in our case. Frozen section or excision of organs that mimic appendicitis is necessary (1).

In most untreated cases, the acute inflammatory phase is followed by aseptic necrosis with subsequent exfoliation and healing. If a preoperative diagnosis is made, conservative management with antibiotics, analgesics, and supportive care is required (9). However, the inflamed PEA may become adherent to a bowel loop or mesentery, causing intestinal obstruction, usually of the small bowel in 10% of cases, and with high mortality. Rarely, secondary infection of an infracted PEA may cause an intra-abdominal abscess or generalized peritonitis (10). The treatment choice for PEA is simple ligation and excision. It has been noted that mesenteric blood vessels loop into the base of appendices epiploicae before supplying the adjacent bowel wall. No cases of compromised viability of the intestinal wall have been reported (1).

As a result, all surgeons should be aware of the anatomic anomalies of the appendix during operations. PEA and acute appendicitis can occur simultaneously and may mimic an appendix duplication, causing a diagnostic dilemma. It may not be possible to differentiate during laparotomy or laparoscopy. Although both issues are rare clinical entities, misdiagnosis can be seriously life threatening. The different diagnoses of PEA from ceacum diverticulum, appendiceal diverticulosis, or appendiceal duplication during laparatomy or laparoscopy are not reliable. Certain diagnosis can only be made by histopathological examination.

REFERENCES

1. Limon O, Oray NC, Bayram B, Atilla R. Acute Epiploic Appendicitis: A Diagnostic Dilemma. Tr J Emerg Med. 2012; 12(3): 140-143 doi:10.5505/1304.7361.2012.70188.

2. McMahon AJ, Hansell DT. Primary appendicitis epiploicae mimicking acute appendicitis. Postgrad Med J. 1988; 64(757): 903-5.

3. Bari SU, Hheikh KA, Malik AA. Torsion of an epiploic appendix mimicking acute appendicitis. Int J Surg. 2008; 6: 488-89.

4. Melkaveri SN, Munikrishnappa D. Epiploic appendagitis as a cause of abdominal pain. J Am Med Dir Assoc. 2007; 8(8): 548-9.

5. Legome EL, Belton AL, Murray RE, Rao PM, Novelline RA. Epiploic appendagitis: the emergency department presentation. J Emerg Med. 2002; 22(1): 9-13.

6. Hollerweger A, Macheiner P, Rettenbacher T, Gritzmann N. Primary epiploic appendagitis: sonographic findings with CT correlation. J Clin ltrasound. 2002; 30(8): 481-95.

7. Christodoulidis G, Symeonidis D, Spyridakis M, Koukoulis G, Manolakis A, Triantafylidis G, et al. Acute appendicitis in a duplicated appendix. Int J Surg Case Rep. 2012; 3(11): 559-62 doi:10.1016/j.ijscr. 2012.08.004. Epub 2012, Aug 14.

8. Dockerty MB, Lynn TE, Waugh JM. A clinicopathologic study of the epiploic appendages. Surg Gynecol Obstet. 1956; 103(4): 423-33.

9. Kumar A, Ramakrishnan TS, Sahu S. Differential Diagnosis for Acute Appendicitis: Epiploic Appendagitis. MJAFI 2009; 65: 276-277

10. Fieber SS, Forman J. Appendices epiploicae: clinical and pathological considerations; report of three cases and statistical analysis on one hundred five cases. AMA Arch Surg. 1953; 66(3): 329-38.