

# Clinical and CT findings of epiploic appendagitis within an inguinal hernia

Hüseyin Özkurt, Ozan Karatağ, Ercan Karaarslan, Muzaffer Başak

## ABSTRACT

Epiploic appendagitis is a rare condition resulting from an acute inflammation of an appendix epiploica. Epiploic appendagitis is frequently misdiagnosed as either acute appendicitis or acute diverticulitis, and the diagnosis is usually made during surgery. Epiploic appendagitis is a rare, self-limiting condition, which can be easily diagnosed with computed tomography (CT). Imaging with CT may suggest the diagnosis thus preventing unnecessary surgery. Medical management of symptoms is usually sufficient. Herein, we present CT findings of an epiploic appendagitis case that developed in a left inguinal hernia, which is a very rare entity.

**Key words:** • appendix epiploica • epiploic appendagitis • hernia, inguinal • computed tomography, X-ray

**A**ppendices epiploica are fat-containing peritoneal outpouchings arising from the serosal surface of the colon. They can be found at any point between the cecum and rectosigmoid colon. Their length may vary between 0.5 and 5 cm (1). Epiploic appendagitis is an entity that develops secondary to inflammation of appendix epiploica and subserosal fat tissue, which leads to acute abdomen (2, 3). In this case report, the clinical picture of a patient diagnosed as epiploic appendagitis within a left inguinal hernia is presented with computed tomography (CT) findings.

## Case report

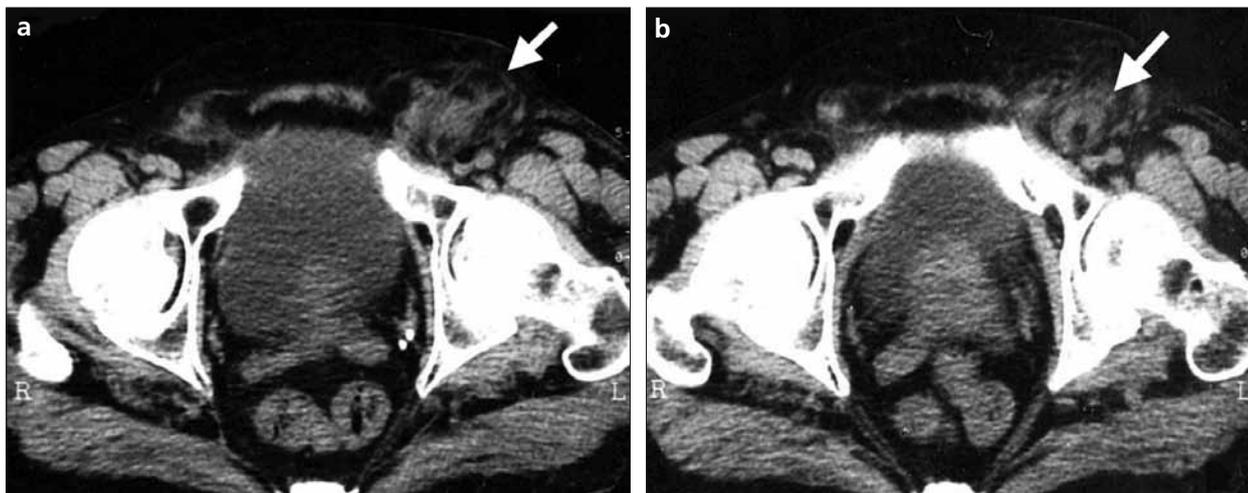
A 73-year-old male patient who presented with acute left lower quadrant pain, which began 2 days earlier, was evaluated with complete abdominal CT findings. In physical examination there was tenderness and a swelling increasing with the Valsalva maneuver in the left lower quadrant. His body temperature was subfebrile and measured 37.8°C. His blood biochemistry analysis was normal, except for leukocytosis (13,800/mm<sup>3</sup>). Direct abdominal X-ray examination was normal. Due to a past history of allergic reaction, non-enhanced CT of the abdomen was obtained with 5 mm slice thickness using a spiral CT machine (Prospect SX, GE Healthcare, Milwaukee, WI, USA). In this examination, the left inguinal canal was wider than normal and within the canal herniated intestinal segments with adjacent mesenteric stranding and densities consistent with inflammation were identified (Fig. a). More inferior slices revealed a mass lesion of fat density (Fig. b). The fat-containing lesion was evaluated as an inflamed appendix epiploica and thickened visceral peritoneum, and densities around it were evaluated as periappendiceal fat tissue inflammation. CT findings were primarily evaluated as epiploic appendagitis developed within a left inguinal hernia, but the possibility of diverticulitis within the hernia could not be excluded. The patient underwent surgery with the pre-diagnoses of epiploic appendagitis and diverticulitis within a left inguinal hernia. Histopathology revealed inflamed appendix epiploica.

## Discussion

Epiploic appendagitis can be primary or secondary. Primary epiploic appendagitis results from spontaneous thrombosis of appendiceal drainage veins in the absence of torsion or ischemia (1, 4, 5). Secondary epiploic appendagitis develops following the inflammatory processes in adjacent structures, such as in cases of vermiform appendix, diverticulitis, and cholecystitis (1, 4). Epiploic appendagitis usually mimics appendicitis or diverticulitis, depending on its location, and may be incorrectly diagnosed preoperatively (5–7). Patients are usually overweight, are between 20 and 60 years old, and complain of

From the Department of Radiology (H.Ö. ✉ drhozkurt@yahoo.com, O.K., M.B.), Şişli Etfal Hospital, Istanbul, Turkey; and Department of Radiology (E.K.), V.K.V. American Hospital, Istanbul, Turkey.

Received 25 February 2004; revision requested 4 October 2005; revision received 20 October 2005; accepted 20 October 2005.



Consecutive CT images of the patient. Herniated intestinal loop within the widened left inguinal canal and increased density at adjacent fat tissue (arrow) are seen (a). Mass lesion with central fat suggesting epiploic appendagitis is seen (arrow) (b).

non-specific abdominal pain (8). Pain is usually perceived in the right and left lower quadrants, but may change with location of the inflammatory process; yet, left lower quadrant pain is the most common (1, 4). Compared with other pathologies leading to acute abdomen, patients' symptoms are not as severe, but the patients may occasionally complain about lack of appetite, nausea, and vomiting. Leukocyte count is normal or minimally increased in epiploic appendagitis patients (1, 8). Localized tenderness and defense can be detected with physical examination and sometimes rebound may be observed. Symptoms regress within a week (1).

Omental infarct is another entity that has similar clinical and radiological properties. Omental infarct may clinically present as epiploic appendagitis (8). On CT, omental infarct has a larger dimension and visceral peritoneal thickening is not seen, which aids the diagnosis (4).

Epiploic appendagitis is a self-limiting (7, 8) and spontaneously regressing entity, and conservative treatment

is sufficient (1, 3). Epiploic appendagitis should always be considered in evaluating an acute abdomen case presenting with localized lower quadrant pain and tenderness in the absence of specific symptoms and laboratory findings, and prompt radiological evaluation should be conducted (5).

CT, ultrasonography (US), and magnetic resonance imaging (MRI) provide useful information for the diagnosis of epiploic appendagitis. An echogenic finger-like protrusion from the colon wall through pericolonic tissue or a hypoechoic mass adjacent to the anterior peritoneal wall are US findings of an inflamed epiploic appendix. Additionally, inflammatory echogenic stranding can be seen at adjacent pericolonic fat tissue (1, 9). An ovoid mass with fat intensity and a central point sign on T1- and T2-weighted images are among the MRI findings of epiploic appendagitis. Peripheral contrast enhancement is seen on fat suppressed contrast enhanced T1-weighted MR imaging, which is the best for visualization of such lesions (2).

Recent studies have highlighted that CT provides characteristic findings in the diagnosis of epiploic appendagitis and this may provide accurate diagnosis, thus preventing unnecessary surgery (1, 6, 7). Characteristic findings of epiploic appendagitis defined in the literature and in our patient are given in Table. Fat-containing lesions (inflamed epiploic appendix surrounded by visceral peritoneum) surrounded by soft tissue between the colon and abdominal wall, and increased density of periappendiceal fat tissue (paracolic inflammatory changes) are major findings of epiploic appendagitis (4, 10). These findings were also observed in our patient. Other CT findings of epiploic appendagitis, such as central round or linear hyperdensity, parietal peritoneal thickening, and compression of adjacent intestinal loops, were not seen in our patient.

In conclusion, epiploic appendagitis should be considered in the CT differential diagnosis of patients with acute abdomen in order to prevent misdiagnosis and unnecessary surgery.

## References

1. Molla E, Ripolles T, Martinez MJ, Morote V, Rosello-Sastre E. Primary epiploic appendagitis: US and CT findings. *Eur Radiol* 1998; 8:435-438.
2. Sirvanci M, Balci NC, Karaman K, Duran C, Karakas E. Primary epiploic appendagitis: MRI findings. *Magn Reson Imaging* 2002; 20:137-139.
3. Legome EL, Belton AL, Murray RE, Rao PM, Novelline RA. Epiploic appendagitis: the emergency department presentation. *J Emerg Med* 2002; 22:9-13.

### Characteristic CT findings of epiploic appendagitis cases in the literature

Fat-containing lesion surrounded by soft tissue density<sup>a</sup>

Increase in density in periappendiceal fat tissue<sup>a</sup>

Central round or linear hyperdensity

Thickening of parietal peritoneum

Compression of adjacent intestinal loops

<sup>a</sup> Findings in the presented case

4. Sirvanci M, Tekelioglu MH, Duran C, Yardimci H, Onat L, Ozer K. Primary epiploic appendagitis: CT manifestations. *Clin Imaging* 2000; 24:357–361.
5. Son HJ, Lee SJ, Lee JH, et al. Clinical diagnosis of primary epiploic appendagitis: differentiation from acute diverticulitis. *J Clin Gastroenterol* 2002; 34:435–38.
6. Hiller N, Berelowitz D, Hadas-Halpern I. Primary epiploic appendagitis: clinical and radiological manifestations. *Isr Med Assoc J* 2000; 2:896–898.
7. Birjawi GA, Haddad MC, Zantout HM, Uthman SZ. Primary epiploic appendagitis: a report of two cases. *Clin Imaging* 2000; 24:207–209.
8. Van Breda Vriesman AC, de Mol van Otterloo AJ, Puylaert JB. Epiploic appendagitis and omental infarction. *Eur J Surg* 2001; 167:723–727.
9. O'Malley ME, Wilson SR. US of gastrointestinal tract abnormalities with CT correlation. *Radiographics* 2003; 23:59–72.
10. Horvath E, Majlis S, Seguel S, et al. Primary epiploic appendicitis: clinical and radiological diagnosis. *Rev Med Chil* 2000; 128:601–607.