Brief clinical review

CT findings in epiploic appendagitis

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Appendix epiploicae are normal, fat-filled outpouchings of peritoneum arising from the serosal surface of the colon. They occur anywhere from the cecum to the rectosigmoid junction. They vary in size up to 5-cm in length and 2-cm in width. In the normal abdomen, they are indistinguishable by computerized tomography (CT) from other pericolic fat in the mesocolon, omentum, or retroperitoneum. Appendix epiploicae are nourished by the branches of arteria colica. Because of the weak blood flow and their free movement ability due to their pedunculated formation, they can be exposed to torsion and infarction easily.1,2

Epiploic appendagitis (EA) is an unusual cause of acute abdomen, which is usually the consequence of torsion and infarction of the appendix epiploicae. It mimics other inflammatory entities such as appendicitis and diverticulitis.2-7 EA can be easily misdiagnosed and incorrect treatment can be applied.8,9 The treatment of EA is generally symptomatic. The increasing use of emergency abdominal CT scan helps in the correct diagnosis of EA and the differentiation of this inflammatory disease from its similar counterparts, which require antibiotics and surgical treatment. This study describes the CT findings of EA and emphasizes the importance of differential diagnosis, including appendicitis and diverticulitis, to avoid unnecessary surgery.

MATERIAL AND METHODS

Nine patients diagnosed with acute EA on CT scan between February 2001 and April 2005 were retrospectively evaluated. The patient group was composed of 5 men and 4 women; the mean age was 44.3 years (range, 27 to 57).

All of the patients complained of localized acute abdominal pain, and 3 complained of anorexia. Vomiting and diarrhea was experienced by none. Five of the patients had a slightly increased white blood cell count. In all patients, there was low-grade fever. The physical examination was nonspecific in 7 of the patients and resembled the findings of other acute abdominal inflammatory conditions. In 5 of the patients who had left lower quadrant pain, it mimicked acute diverticulitis. In 1 patient with right lower quadrant pain, it mimicked acute appendicitis. The patient who had right upper quadrant pain was diagnosed with acute cholecystitis. One patient who had left lower quadrant pain with a left inguinal swelling was thought to have an incarcerated inguinal hernia.

All patients’ supine and upright abdominal radiographs were normal. Each underwent spiral CT examination with a GE prospeed SX CT scanner (General Electric Medical Systems, Milwaukee, Wis) and a Hitachi SR 950 W CT scanner (Hitachi, Tokyo, Japan) using 5-mm thick slices before and after intravenous and oral contrast agent administration. Two radiologists who were blinded to each other’s interpretations evaluated all CT scans.

RESULTS

In all patients, the CT scans revealed paracolic, fat-containing, oval lesions with a rim of soft-tissue density (Fig 1) and pericolonic fat stranding (Fig 2). In addition, evidence on CT scans showed local parietal peritoneal thickening in 7 patients; central high density dot or linear density in all 8 patients, and adjacent bowel wall thickening in 2 patients.
Bowel wall compression was not observed in any of the patients. In all patients, the CT findings of EA were observed on the antimesenteric side of the colon.

Two patients underwent surgical management. One was found to have an infarcted appendix epiploica of the ascending colon. The adjacent gall bladder had a thickened, inflamed wall. Histopathologic examination of the appendix epiploica revealed necrotic adipose tissue and inflammatory cells.

The patient with inguinal swelling and a preoperative diagnosis of an incarcerated inguinal hernia had an inflamed and edematous appendix epiploica of the sigmoid colon in the hernia sac. The appendix epiploica was resected and the hernia sac closed. An anterior tension-free repair was performed using 8-×-12-cm polypropylene mesh.

The other 7 patients were treated, and followed up with antiinflammatory drugs without operation. The clinical symptoms disappeared in 1 to 3 weeks, and the patients recovered uneventfully. On follow-up CT scans obtained after the resolution the presenting findings had regressed.

DISCUSSION

Epiploic appendagitis is an uncommon acute inflammation of appendix epiploicae, often associated with torsion and infarction but also occurring without a known predisposing cause. EA is more frequently seen between the second and fifth decades of life and is most common in obese patients. Nearly all patients complain of sudden onset of abdominal pain. Tenderness of the abdomen with rebound is usually noted on physical examination.

Although primary EA does not require surgical management, misdiagnosis of other acute abdominal conditions, such as acute appendicitis or acute diverticulitis, is common and leads to unnecessary laparotomy.

The CT findings of this entity are so characteristic that they enable its definitive diagnosis. A round, fat-containing mass (representing the inflamed appendix epiploica) with a rim of soft-tissue density (representing the thickened visceral peritoneal lining) associated with periappendageal fat stranding (representing the paracolic inflammatory changes) adjacent to the colon are the characteristic CT findings and were observed in all of our patients. Epiploic appendagitis is more commonly diagnosed today with the increasing use of cross-sectional imaging.

REFERENCES