Case Report / Olgu Sunumu

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Epiploic Appendicitis in Differential Diagnosis of Acute Abdominal Pain: A Pediatric Case

Akut Karın Ağrısı Ayırıcı Tanısında Epiploik Apandisit: Çocuk Olgu

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Abstract

Epiploic appendicitis is an uncommon and self-limiting disease. Clinically, it can often mimic acute appendicitis or acute diverticulitis, which are more common causes of acute lower abdominal pain. A 16-year-old male patient was admitted to our pediatric gastroenterology outpatient clinic with complaints of diarrhea (4 times a day) and severe abdominal pain in the epigastric region for three days. Abdominal computed tomography showed normal pancreas, hepatosteatosis, thickening of the cecum wall, multiple mesenteric lymphadenopathy in the right lower quadrant, areas similar to fat necrosis and 25x20 mm lesions compatible with EA. The patient, whose clinical and laboratory findings improved completely with antibiotic therapy, was discharged. In this study, we aimed to draw attention to epiploic appendicitis, which is one of the causes of acute lower abdominal pain in children and should be kept in mind in order to prevent unnecessary operations.

Keywords: Epiploic appendicitis, abdominal pain, pediatric case

Öz

Epiploik apandisit nadir görülen ve kendi kendini sınırlayan bir hastalıktır. Klinik olarak, sıklıkla akut alt karın ağrısının daha yaygın nedenlerinden olan akut apandisiti veya akut divertiküliti taklit edebilmektedir. On altı yaşında erkek hasta üç gündür ishal (günde 4 kez), epigastrik bölgede ve sağ alt kadranda şiddetli karın ağrısı şikayetleri ile çocuk gastroenteroloji polikliniğimize başvurdu. Karın bilgisayarlı tomografisinde pankreas normal, hepatosteatoz, çekum duvarında kalınlaşma, sağ alt kadranda çok sayıda mezenterik lenfadenopati, yağ nekrozuna benzer alanlar ve epiploik apandisit ile uyumlu 25x20 mm lezyonlar görüldü. Antibiyotik tedavisi ile klinik ve laboratuvar bulguları tamamen düzelen hasta taburcu edildi. Bu çalışmada, çocuklarda akut alt karın ağrısı nedenlerinden olan ve gereksiz operasyonların önlenmesi amacıyla akılda tutulması gereken epiploik apendisite dikkat çekmeyi amaçladık.

Anahtar Kelimeler: Epiploik apandisit, karın ağrısı, çocuk olgu

Introduction

Epiploic appendagitis (EA) is a mostly self-limiting, inflammatory/ischemic disorder that results from spontaneous torsion of fat-filled sacs formed by the peritoneum surrounding the colon or venous thrombosis.[1,2] Clinically, it can often mimic acute appendicitis or acute diverticulitis, which are more common causes of acute lower abdominal pain.[3] Clinical diagnosis of EA is difficult due to its rarity and non-specific clinical findings. However, with the increasing use of abdominal computed tomography (CT) in the investigation of acute abdominal pain, EA case reports have started to increase in the literature.[2] In our study, we aimed to draw attention to EA, which is an important differential diagnosis of acute abdominal pain that is treated conservatively and which is less common in children.

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Case Report

A 16-year-old male patient was admitted to our pediatric gastroenterology outpatient clinic with diarrhea lasting for three days (4 times/day), severe abdominal pain in the epigastric region and right lower quadrant. The patient's history and family history were unremarkable. On physical examination, blood pressure was 120/75 mmHg, heart rate was 80/min, respiratory rate was 13/min, body temperature was 37.7 °C, and there was tenderness in the epigastric region and right lower quadrant of the abdomen. His body weight was 95 kg (>97 p), his height was 168 cm (25 p), and his weight for height was 158%. In the laboratory findings, leukocytes value was 8856/μL, hemoglobin was 14.8 g/dL, platelets were 237,000/μL, C-reactive protein (CRP) was 116 mg/dL (normal: <5 mg/dL), amylase was 117 U/L (normal: <100 U/L) and lipase was 1786 U/L (normal: <55 U/L). Total/direct bilirubin, aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase, gamma glutamyl transferase, serum electrolytes, hepatitis serology and lipid levels were within normal intervals. In the abdominal ultrasonography (USG) taken for the preliminary diagnosis of acute pancreatitis, the pancreatic head was normal, the liver size was within normal limits, and stage-1 hepatosteatosis was observed. Oral intake of the patient who was hospitalized and followed up was discontinued, intravenous (iv) hydration and pantoprazole iv were started. Abdominal CT taken on the same day showed normal pancreas, hepatosteatosis, thickened cecum wall, a few mesenteric lymphadenopathies in the right lower quadrant, fat necrosis-like areas, and 25x20 mm lesions compatible with EA (Figure 1). Ceftriaxone IV was started with the preliminary diagnosis of EA and feeding was started.

After the first dose of ceftriaxone, he had urticarial rashes, and his antibiotic therapy was changed to ampicillin/sulbactam and amikacin with the recommendation of the pediatric infection specialist. The patient's abdominal pain decreased on the second day of his treatment, and his oral intake was gradually increased. After seven days of antibiotic therapy, the patient was discharged for his clinical and laboratory findings improved completely. In the six-month follow-up, abdominal pain did not recur, and laboratory values were within the normal range. Verbal and written informed consent were obtained from the family for the case report.

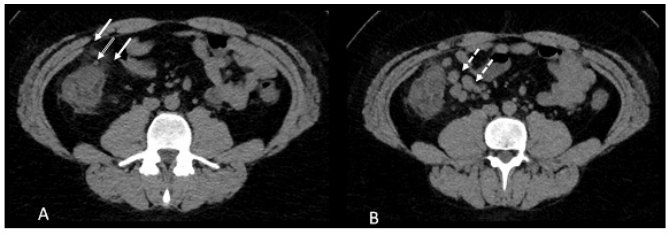

Figure 1. Abdominal computed tomography image of our case. A; At the level of the ileocecal junction, a lesion measuring 25x20 mm in fat density with a hyperdense focus (hollow arrow) in the center, high-density rim in its anterior neighborhood, and inhomogeneity compatible with inflammation in the surrounding mesenteric fatty tissue. B; adjacent mesenteric lymph nodes (dashed arrow)

Discussion

Although it is observed in higher numbers in the sigmoid colon and ileocecal region, the blood circulation of epiploic protrusions, which are about 50-100 in the whole colon, is provided by colic artery branches. Due to weak blood flow and their pedicled structures that allow free movement, they can be easily exposed to torsion and infarction, and can cause primary EA, which is usually a self-limiting, benign, rare inflammatory disease characterized by regional abdominal pain with sudden onset.[1,2,4] Secondary EA develops due to intra-abdominal inflammatory events such as acute appendicitis, cholecystitis, pancreatitis, and diverticulitis, and the main treatment is the elimination of the primary cause.[1,4,5] Although it can occur at any age, it is usually detected more frequently in men aged 20-50 years and in obese patients.[1,6-8] Our patient was a male, obese patient who was admitted with the clinic of acute pancreatitis, which was consistent with the literature. The incidence of epiploic appendicitis is estimated to be about 8.8 cases/million/year.[9]

Similar to our case for whom we considered primary EA, cases who were initially thought to have acute pancreatitis but were subsequently diagnosed and treated for EA have been reported in the literature.[10]

It presents with abdominal pain with acute onset mostly in the left lower quadrants and, in some cases, with abdominal tenderness and rebound. Fever, nausea, vomiting, diarrhea and constipation can be seen less frequently with EA.[4] There is no specific laboratory method for diagnosis, mild leukocytosis or normal leukocyte counts can be seen.[6,8] Although the leukocyte count of our patient was within the normal range, CRP positivity was detected due to acute inflammation. The lack of specific pathognomonic clinical and laboratory findings and the lack of awareness among physicians makes the diagnosis of EA difficult without the use of imaging methods.[4] EA should be considered in the differential diagnosis, especially in patients presenting with lower quadrant abdominal pain and in acute abdomen cases with suspicious laboratory and physical examination findings.[1,6] Accurate and rapid diagnosis is very important for EA that causes abdominal condition. The diagnosis of EA can be accurately and reliably made with USG and CT, and thus surgery can be avoided.[1,7] Since the physical examination of our patient revealed tenderness with superficial palpation in the epigastric and right lower quadrants, USG was first performed for diagnostic purposes.

However, the pancreas could not be fully evaluated due to the excess fat tissue in the abdomen. Therefore, abdominal CT was performed and the diagnosis of EA was established. Antibiotic treatment is rarely required in this self-limiting disease, but the use of antibiotics in addition to anti-inflammatory drugs is recommended in some studies.[4] Although anti-inflammatory conservative treatments are specified as the first treatment option in the literature, it has been reported that symptoms improve more rapidly when used together with the use of prophylactic antibiotic.[1,4,11] In our patient, CRP positivity was detected as an indicator of inflammation, and oral intake of the patient was re-opened after the condition of acute abdomen was excluded. It was observed that the abdominal pain decreased rapidly and the signs of inflammation regressed after the antibiotic was started. By the forty-eighth hour of the treatment, the abdominal pain was completely recovered. Studies on epiploic appendicitis have been reported mostly in adults in the literature, and a pediatric case was reported in this study.

Lipase is an enzyme that catalyzes the breakdown of triglycerides. In addition to pancreatic acinar cells, lipase is found in the gastrointestinal system, including the esophagus, duodenum, stomach, and colon. Knowing potential alternative causes of significantly elevated lipase is crucial for clinicians, as such levels may in some cases be erroneously interpreted as indicative of pancreatitis. Isolated increases in serum lipase can be explained by the release of non-pancreatic lipolytic enzymes into the general circulation. Various obstructive, inflammatory, ischemic, malignant, traumatic or systemic diseases induce the release of non-pancreatic lipolytic enzymes. Related causes mainly include systemic conditions such as acute cholecystitis, intestinal infarction, duodenal ulcer, obstructive or inflammatory bowel disorders, liver diseases, abdominal trauma as well as diabetic ketoacidosis and asymptomatic chronic alcoholism. In a study on 306 patients with abdominal pain, 12.5% had elevated serum lipase.[12-14] In studies on epiploic appendicitis, lipase elevation was not seen in the literature review. Although the prediagnosis of acute pancreatitis was considered due to high lipase level in our epiploic appendicitis at admission, no findings in favor of acute pancreatitis were detected in imaging studies. Lipase increase due to the release of non-pancreatic lipolytic enzymes into the general circulation was considered in the foreground in the patient whose abdominal pain was completely resolved on the 48th hour of antibiotic treatment, whose abdominal pain did not recur despite the initiation of oral intake, and whose lipase enzyme level gradually decreased and returned to normal on the 7th day.

In conclusion, since it is a rare disease in children, the diagnosis should be confirmed with CT before surgery in cases who present with the clinic of acute abdomen but the diagnosis is uncertain, and it should not be forgotten that unnecessary surgical interventions can be prevented only with conservative treatment. However, clinicians should be aware that elevated lipase and/or amylase alone may not reflect a true acute pancreatitis.

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Ethics

Informed Consent: Verbal and written informed consent were obtained from the family for the case report.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: M.Ç., Ş.Ö., S.D., Ö.K.Ş., Concept: M.Ç., Ö.K.Ş., Design: M.Ç., Ö.K.Ş., Data Collection or Processing: M.Ç., Ş.Ö., S.D., Ö.K.Ş., Analysis or Interpretation: M.Ç., Ş.Ö., S.D., Ö.K.Ş., Literature Search: M.Ç., Ş.Ö., S.D., Ö.K.Ş., Writing: M.Ç., Ş.Ö., S.D., Ö.K.Ş.

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