A Rare Entity: Coexistence of Acute Appendicitis and Cecal Diverticulitis

Nadir Bir Durum: Akut Apandisit ve Çekal Divertikülitin Birlikteliği

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Geliş Tarihi / Received : 14 Ocak 2024 Kabul Tarihi / Accepted: 13 Şubat 2024

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Hippocrates Medical Journal / Hippocrates Med J 2024, 4(1):30-33 DOI: https://doi.org/ 10.58961/hmj.1419585

Abstract

In this case report, we wanted to present the diagnostic and treatment process of a patient who was diagnosed with acute appendicitis in the preoperative period, was taken to surgery, and was diagnosed with cecum diverticulitis in the perioperative period. A 36-year-old female patient was admitted to our emergency department with complaints of abdominal pain, nausea, and loss of appetite for 3 days. Abdominal pain started in the lower right abdomen and gradually increased in severity as the day passed. On physical examination, there was defense and rebound localized to the lower right quadrant of the abdomen. In the laboratory, the white blood cell count was within normal limits (7.4 10*9 L-1) and the c-reactive protein (CRP) level was 79 mg L-1 (0-5 mg L-1). On abdominal ultrasonography, the diameter of the appendix vermiformis was measured as 8.5 mm, and it was observed that there was increased echogenicity in the fatty tissue around the appendix vermiformis. The patient was taken to emergency surgery. During exploration, the appendix was observed to be oedematous. Additionally, diverticulitis was observed in the anterior wall of the cecum, close to the ileocecal area. Simultaneous appendectomy and diverticulectomy were performed. The patient was discharged without complications on the 4th postoperative day.

Keywords Appendicitis, Colonic diverticulitis, Operative procedure

Özet

Bu olgu sunumunda ameliyat öncesi dönemde akut apandisit tanısı konularak ameliyata alınan ve perioperatif dönemde çekum divertiküliti tanısı konulan bir hastanın tanı ve tedavi sürecini sunmak istedik. 36 yaşında kadın hasta, 3 gündür devam eden karın ağrısı, bulantı, iştahsızlık şikayetiyle acil servisimize başvurdu. Karın ağrısı sağ alt karın bölgesinde başladı ve gün geçtikçe şiddeti giderek arttı. Fizik muayenesinde batın sağ alt kadranda lokalize defans ve rebound mevcuttu. Laboratuvarda beyaz küre sayısı normal sınırlarda (7,4 10*9 L-1), C-reaktif protein (CRP) düzeyi 79 mg L-1 (0-5 mg L-1) idi. Batın ultrasonografisinde apendiks vermiformis çapı 8,5 mm olarak ölçüldü ve apendiks vermiformis çevresindeki yağ dokusunda ekojenitenin arttığı gözlendi. Hasta acil ameliyata alındı. Eksplorasyon sırasında apendiksin ödemli olduğu görüldü. Ayrıca çekum ön duvarında ileoçekal bölgeye yakın divertikülit gözlendi. Eş zamanlı apendektomi ve divertikülektomi yapıldı. Hasta ameliyat sonrası 4. günde komplikasyonsuz olarak taburcu edildi.

Anahtar Kelimeler Apandisit, Kolon divertiküliti, Ameliyat prosedürü

INTRODUCTION

Potier first described the cecum diverticulum in 1912 (1). Although cecum diverticulum is more common in Asian society than in Western society, the average age of detection is 44 years. It is mostly seen in young people and males (2). Cecum diverticula constitute 3.6% of all colon diverticula (3). Although the etiology is not clear, it is thought to be a congenital defect that occurs in the form of a sac called a true diverticulum, in which all layers of the colon participate, in the 6th week of pregnancy (4).

Cecum diverticula are often asymptomatic, but they produce clinical findings when complications develop (5). When the diverticulum is inflamed (diverticulitis), it most commonly causes right iliac fossa pain. Therefore, it is confused with acute appendicitis, which is the most common cause of right lower quadrant pain. Therefore, it is difficult to diagnose cecum diverticulitis. Cecum diverticulitis is usually detected in patients who undergo surgery with the preliminary diagnosis of acute appendicitis. It has been observed that approximately 1 case of cecum diverticulitis is detected in every 300 appendectomies performed (6).

Diverticula usually arise from the anterior part of the cecum. While inflammation of anteriorly located diverticula may cause signs of peritonitis, inflammation of posteriorly located diverticula may present with a mass without any signs of peritonitis (7). In cases where a preoperative diagnosis can be made and there is no suspicion of malignancy or evidence of perforation, the primary treatment is a conservative approach (8). The treatment of cecal diverticulitis detected during appendectomy is controversial. There is a wide range of surgical approaches, ranging from appendectomy and diverticulum resection to right hemicolectomy (6).

In this case report, we wanted to present the diagnostic and treatment process of a patient who was diagnosed with acute appendicitis in the preoperative period, was taken to surgery, and was diagnosed with cecum diverticulitis in the perioperative period.

CASE REPORT

A 36-year-old female patient was admitted to our emergency department with complaints of abdominal pain, nausea, and loss of appetite for 3 days. Abdominal pain started in the lower right abdomen and gradually increased in severity as the day passed. Loss of appetite and nausea have become more evident in the last day. The patient had no history of surgery, chronic disease, or medication use.

On physical examination, there was defense and rebound localized to the lower right quadrant of the abdomen. Other system examinations, including rectal examination, were normal. In the laboratory, the white blood cell count was within normal limits (7.4 10*9 L-1) and the c-reactive protein (CRP) level was 79 mg L^{-1} (0-5 mg L^{-1}). The pregnancy test taken was also negative. An abdominal ultrasonography (USG) was performed. On USG, the diameter of the appendix vermiformis was measured as 8.5 mm, and it was observed that there was increased echogenicity and contamination in the fatty tissue around the appendix vermiformis. Additionally, there was oedematous wall thickness in the cecum.

The patient was taken into emergency surgery with the preliminary diagnosis of acute appendicitis. During exploration performed through Mc Burney incision under spinal anesthesia, the appendix was observed to be oedematous and erect. Additionally, diverticulitis was observed in the anterior wall of the cecum, close to the ileocecal area (**Figure 1**).

Figure 1. The blue arrow shows inflamed and increased blood supply appendix vermiformis and the green arrow shows cecal diverticulitis.

Simultaneous appendectomy and diverticulectomy were performed. A drain was placed in the right lower quadrant. The patient was followed up in the service during the postoperative period. Oral feeding was stopped in the first 2 days postoperatively. Oral nutrition was started on the 3rd postoperative day for the patient who had spontaneous gas and stool. The patient was discharged without complications on the 4th postoperative day after the abdominal drain was removed.

Pathological examination of the operation material was reported as compatible with cecal diverticulitis and inflamed appendix vermiformis. The patient underwent total colonoscopy at the 6th week after the operation and no pathology was observed in the colonoscopy.

DISCUSSION

Cecum diverticula are generally known as congenital, solitary, and true diverticula, which are mostly observed in the young population. In the new publications, it is stated that congenital ones show these features, but this part is in the minority, while the majority are acquired and increase with age (9). In the present case, the patient was 36 years old and had true diverticulitis involving all layers of the isolated cecum.

Cecal diverticulitis causes right lower quadrant pain, fever, peritoneal irritation findings, leukocytosis, and elevated CRP levels, causing the cases to be confused with the clinic of acute appendicitis. This confusion causes surgeons to perform incorrect surgical interventions on patients with the preliminary diagnosis of acute appendicitis. As a matter of fact, as in the present case, all preoperative clinical findings showed the clinical picture of acute appendicitis. Therefore, surgical intervention was planned for the patient and the actual diagnosis could be made in the perioperative period.

While contrast enema examination was used in the diagnosis of cecal diverticulitis before, today USG and CT, which have high specificity and sensitivity, are used. 12.5% of the cases can be diagnosed correctly with USG and 70.6% with CT. Colonic wall thickening, extraluminal air around the colon, edema, increased echogenicity in pericolic fat tissue, or abscess can be observed on USG and CT (10,11). In this case, the edema of the cecum and the increased diameter of the appendix vermiformis on USG immediately led us to the preliminary diagnosis of acute appendicitis. Cecal edema can be seen in cases of acute appendicitis, but also in ileocolic site malignancies and cecal diverticulitis. Although the young age of the patient strengthens the preliminary diagnosis of acute appendicitis, it should not be forgotten that isolated cecal diverticulitis is usually seen at young ages. However ileocolic malignancy cases are mostly seen at older ages.

Treatment of cecal diverticulitis is determined according to whether the case is complicated or not. In uncomplicated cases (without generalized peritonitis, perforation, abscess, fistula, or stricture) diagnosed preoperatively, they are treated conservatively with bowel rest, intravenous antibiotics, and hydration. Thus, unnecessary surgical procedures and the risk of surgery-related complications are reduced (12). In their retrospective study, Chen et al. divided 114 cecal diverticulitis patients into 3 groups: surgery, drainage, and conservative follow-up. Diverticulectomy and repair were given to 13 patients, drainage catheter application to 15 patients, and conservative treatment to 86 patients. They did not see a significant difference in the effect of the 3 treatments, but they concluded that the hospital cost in the conservative approach was less than other treatment options (13). In the present case, the diagnosis could be made during the operation, as in most cases.

In complicated cases (with generalized peritonitis, perforation, abscess, fistula, or stricture), the surgical treatment approach varies depending on the patient's hemodynamic findings, age, comorbid diseases, and the presence of sepsis. While laparoscopic procedures are preferred in hemodynamically stable patients, laparotomy is preferred in septic patients and patients with severe peritonitis. Diverticulectomy, anastomosis after right hemicolectomy, anastomosis with diverting ileostomy, and end ileostomy are surgical procedures that can be preferred. Laparoscopic lavage and drainage can also be applied in selected cases (14). This case was an uncomplicated diverticulitis and there was no suspicion of malignancy. Therefore, diverticulectomy with appendectomy was performed.

CONCLUSION

Although acute appendicitis is primarily considered in patients with right lower quadrant pain, the diagnosis of cecal diverticulitis, which is a rare clinical entity, should be kept in mind. Ultrasound and computed tomography are the most effective imaging tools for preoperative diagnosis, but most cases are often diagnosed at the time of surgery. Uncomplicated cases of cecal diverticulitis (without generalized peritonitis, perforation, abscess, fistula, or stenosis) are treated conservatively, while complicated cases of cecal diverticulitis (with generalized peritonitis, perforation, abscess, fistula, or stenosis) are treated surgically.

Ethical Declerations

Since it is a case report, ethics committee approval is not required. An inform consent was obtained from the patient for this case report.

Conflict of Interest Statement:

No conflict of interest was declared by the authors.

Financial Disclosure:

No financial disclosure was declared by the authors.

Author Contribution

TK proposed the study and wrote the paper. All authors contributed to the design and interpretation of the research and to further drafts.

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