An Uncommon Cause of Acute Abdomen in a Pediatric Patient: Caecal Diverticulitis

Mehmet Fatih Erbay

Radiology, Private Gözde Academy Hospital, Malatya, Turkey

Abstract

Cecal diverticulitis is a rare condition in pediatric age groups. It is often misdiagnosed because it has nonspesific symptoms mimicking acute appendicitis. Without using any further radiological imaging techniques such as ultrasound (US) and/or computed tomography (CT), it is difficult to distinguish the cecal diverticulitis from acute appendicitis. Optimal management options of the disease are controversial but uncomplicated cases can be treated conservatively with appropriate antibiotics. However, surgical option can be preserved for the complicated cases. In this paper we presented a pediatric cecal diverticulitis case with lower right quadrant pain. We emphasized the diagnostic difficulty of the disease and the importance of CT in the correct diagnosis. The management options were also discussed.

Keywords: Cecal diverticulitis, pediatric age groups, computed tomography

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Corresponding Author: Mehmet Fatih Erbay, Radiology, Private Gözde Academy Hospital, Malatya, Turkey
E-mail: drfatiherbay@hotmail.com **Phone**: +905323356938 **Fax**: +904222114480

Introduction

Diverticular disease of the colon is among the most prevalent conditions in Western society and is one of the leading conditions for outpatient visits and hospitalizations [1]. The prevalence of diverticular disease increases with age, occurring in less than 10% of those who are younger than 40 years [2]. Left sided diverticular disease is very common in Western society and thought to be associated with low fiber diet. Right sided diverticular disease is relatively uncommon, in particular caecal diverticulitis. It represents 3.6% of all colonic diverticular disease [3]. It has higher prevelance in Far Eastern Asian population and higher predilection of males [4]. Caecal diverticulitis is an uncommon cause of acute abdomen and the clinical presentation of acute diverticulitis varies widely from mild inflammation to full-blown perforation and peritonitis. Its prevalence in pediatric or early adolescence age groups is extremely low in the Western population; the true incidence is not known [5]. It is quite difficult to differentiate it preoperatively from acute appendicitis [6,7]**.** With the increasing use of CT scanning in the emergency radiology, diagnosis and evaluation of the patients has been improved recent years [8]**.** Optimal treatment of caecum diverticulitis is controversial. While some authors accept surgical treatment due to its high relapse and complication rates; some claim that medical treatment is active and safe due to its low recurrence rates [9,10]**.** In this paper we present a 15 -years-old male diagnosed and got outpatient treatment as cecal diverticulitis.

Case

A 15-year-old male admitted our pediatry department with complaints of abdominal pain, nausea and slight fever for 2 days. In his medical history, her mother reported that he had been treated with rabeprazole and methyl phenidate due to diagnosis of Asperger's syndrome for 5 years and he had been suffering from an eating disorder as inadequate chewing for years. On physical examination he had right lower quadrant pain and rebound tenderness. There was no notable sign on routine blood and urine testings except slightly elevated white blood cell count as 10700 mm^{-3} with % 64 neutrophils and elevated C-reactive protein levels as 53 mg/L. We performed an abdominal US examination and US revealed some inflamatory echo changes in the omental fatty tissue around caecum but we could not visualize the appendix. With the presumptive diagnosis of retrocecal acute appendicites CT scanning was performed.

On CT images we noted that the appendix had a normal structure and there were no secondary inflamatory changes in the adjacent omentum **(Figure 1)**. But there were a few diverticulum of which some were calcified and the others seemed inflamed with wall thickening. Lateral adjacent omentum was dirty showing signs of 'fat-stranding' **(Figure 2a ve Figure 2b)**. No additional finding was seen regarding complications such as abcess. The whole imaging findings were consistent with uncomplicated cecal diverticulitis and based on the clinical and examination state, the patient was initiated outpatient treatment with orally amoxicilline-clavulanic acid 1000 mg and ibuprofen 400 mg twice per day for each. He was recommended to readmit to hospital in case of worsening symptoms such as abdominal pain, fever etc. After a week period, during the control examinations the patient had no symptoms and US showed that the previous inflamatory omental changes had been dissapeared.

Figure 1.

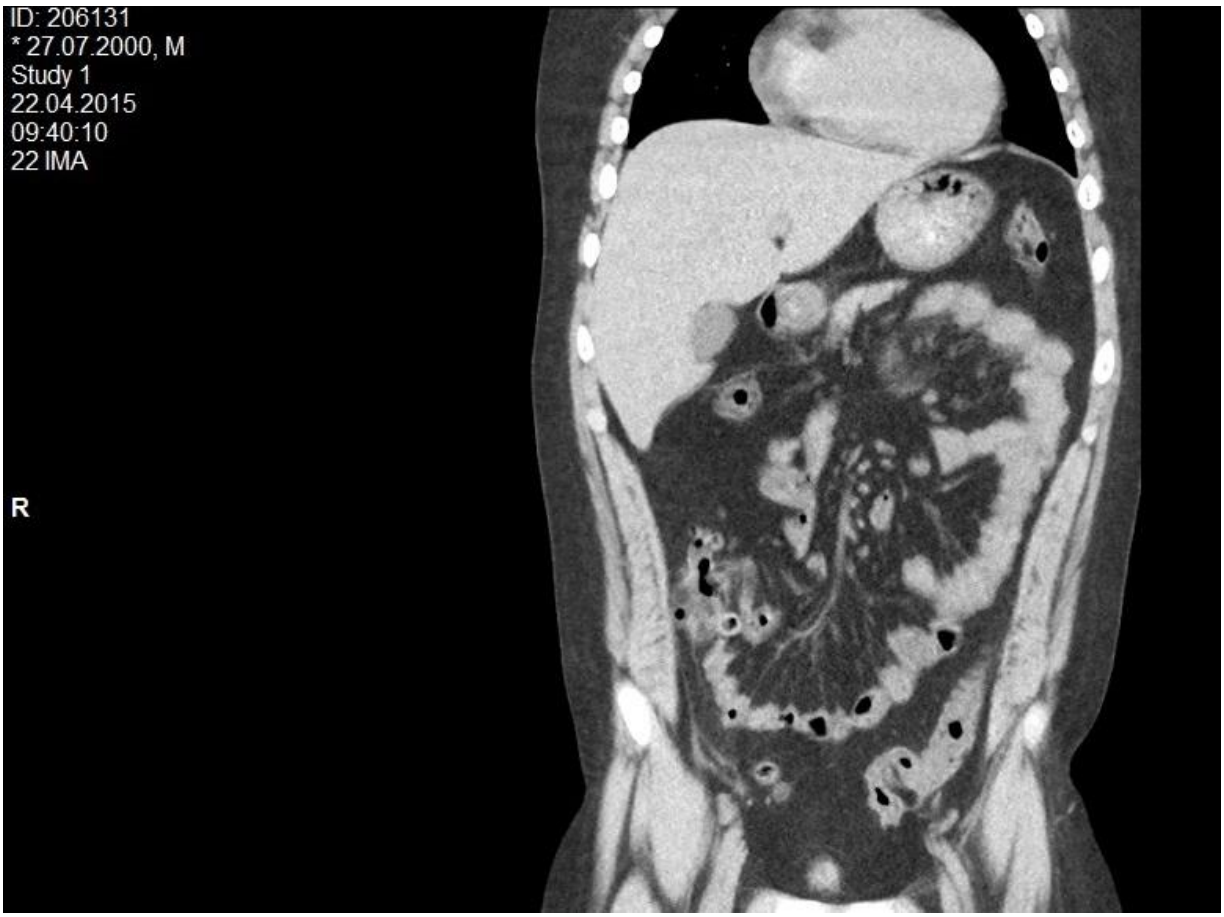

Figure 2a.

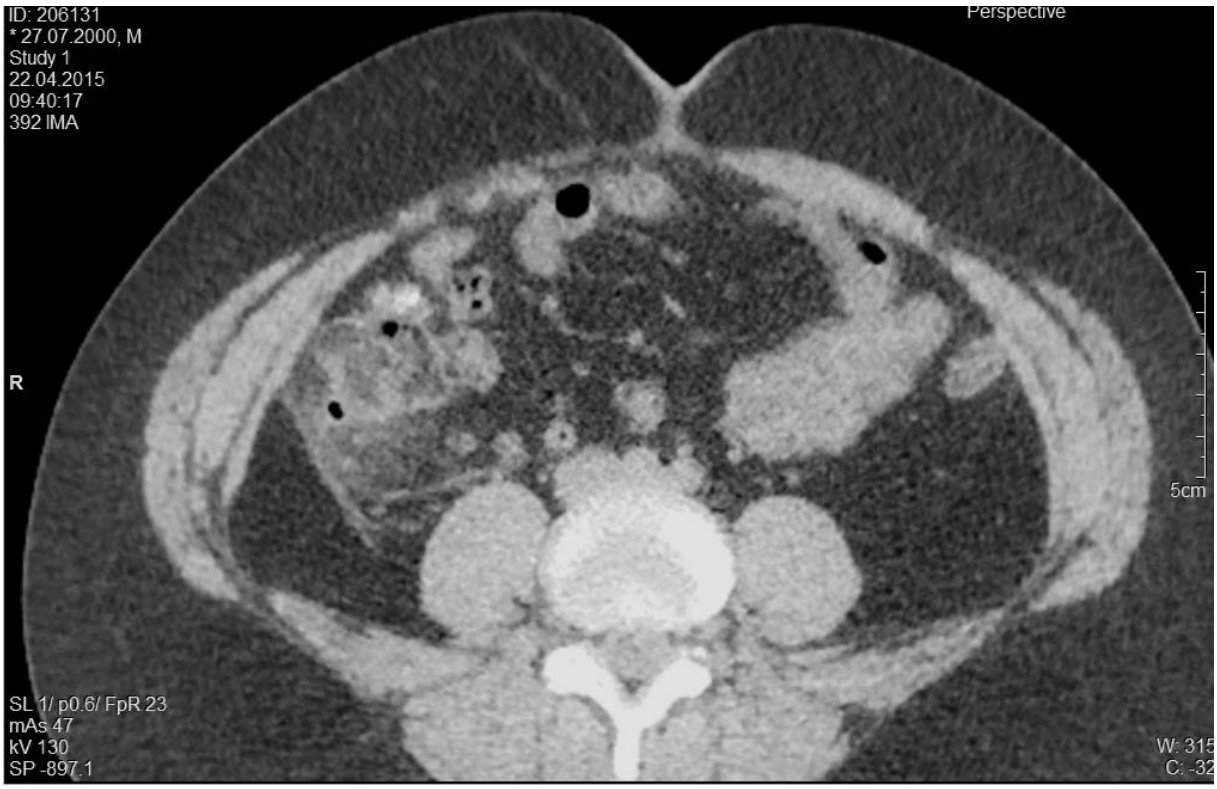

Figure 2b.

Discussion

Diverticular disease is an age-related disorder of the colon affecting greater than half of the population over the age of 65 years [1]. Current evidences suggest that decreasing dietary fibre, colonic pressure, motility changes and colonic structural alterations may collectively contribute to diverticula formation [11]. In our case, eating disorder as inadequate chewing might have played a role in developing a diverticular disease associated with the reasons mentioned above. Caecal diverticulitis is an uncommon condition in Western countries and is preoperatively almost indistinguishable from appendicitis. It has a high prevalence in the Oriental population [12,13]. Pediatric cecal diverticulitis is also a rare entity. The first report of this disease in a child was published in 1908. Since then, few cases have been reported on diverticular disease in adolescence [5]. But the incidence of pediatric cecal diverticulitis began to raise in the second half of the first decade of 2000's [14]. This may be associated with the increasing use of CT recently in the emergency radiology. Some studies in the literature also demonstrated that right colonic diverticulitis can be correctly diagnosed using

radiologic evaluation [15,16]. Without any further imaging modalities such as CT, right-sided diverticulitis, in particular cecal diverticulitis is quite difficult to distinguish from acute appendicitis before surgery based only on clinical presentations, and the percentage of misdiagnosis is over 90% [17,18]. Therefore CT should be considered the diagnostic tool of choice in patients with suspected acute diverticulitis of the colon [8]. It has high sensitivity (approximately 93%-97%) and specificity approaching 100% for the diagnosis [19,20]. In our case, the patient had classical symptoms such as right lower quadrant pain and tenderness favoring acute appendicites. We could not manage to visualize the appendix by US examination. On the second step, we performed CT scanning and showed the inflamed cecal diverticulums and the normal appendix structure successfully.

The treatment of suspected uncomplicated cecal diverticulitis diagnosed by radiological imaging has not been uniform. It can usually be treated with antibiotics [21]. The clinical course and outcome of diverticulitis in the younger patients is controversial. Diverticulitis in younger patients has been reported to have a more aggressive course or to require emergency surgery more frequently than in older patients [22]. Many clinicians prefer non-operative management if right-sided uncomplicated diverticulitis is recognized preoperatively and may achieve long-term remission and control of the disease. Cecal diverticulitis, if not combined with definite complications, seems to have a benign nature and may be treated non-operatively [21]. The treatment of complicated cecal diverticulitis or a suspected mass is less controversial due to high morbidity and unexpected pathologies [23]. Therefore surgical treatment is well accepted in these cases.

In conclusion, because pediatric cecal diverticulitis is an uncommon entity and its symptoms are nonspesific, it is quite difficult to recognize it without any imaging method such as CT. We think that CT imaging should always be performed on vague cases of which the clinical and laboratory findings are nonspesific and which US cannot exclude acute appendicitis or some other acute pathologies. CT plays a great role in the staging and the severity of the disease [8]. Cases of mild acute diverticulitis diagnosed by CT can be treated on an outpatient basis [24].

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