A Rare Cause in The Differantial Diagnosis of Chilaiditi Syndrome: A Peptic Ulcer Perforation

Chilaiditi Sendromunun Ayırıcı Tanısında Nadir Bir Neden: Peptik Ülser Perforasyonu

Chilaiditi Sendromu / Chilaiditi Syndrome

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Özet

Chiliaditi sendromu oldukça nadirdir ve kolon ve/veya ince barsakların hepatodiyafragmatik aralığa interpozisyonu olarak bilinir. Genellikle asemptomatiktir, fakat abdominal ağrı, bulantı, kusma, konstipasyon ve solunum problemleri gibi semptomlar görülebilir. Genel popülasyondaki sıklığı %0.025-0.28 arasındadır. Sendromun tanısı X-ray görüntüleme ve bilgisayarlı tomografi ile konulur. Bu hastalığın ayırıcı tanısı birçok nedeni içerebilir. Biz bu çalışmada, nadir görülen Chiliaditi sendromunun ayırıcı tanısında göz önünde bulundurulması gereken peptik ülser perforasyonu olan 62 yaşındaki bir olguyu sunduk.

Anahtar Kelimeler

Karın Ağrısı; Chiliaditi Sendromu; Peptik Ülser

Abstract

Chiliaditi syndrome is a quite rare and it is known the interposition of colon and/or small intestine in hepatodiaphragmatic area. Generally it is asymptomatic, but sometimes, it may present with abdominal pain, nausea, vomiting, constipation and respiratory distress. The incidence in general population is between 0.025-0.28%. It is diagnosed by X-ray radiographs or computed tomography. Differential diagnoses of this syndrome may include a various reason. In this study, we presented a 62-year old, a case of peptic ulcer perforation which must be considered in the differential diagnosis of Chiliaditi syndrome that is rare.

Keywords

Abdominal Pain; Chiliaditi Syndrome; Peptic Ulcer

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Introduction

Chilaiditi appearance, first described in over a century ago by the radiologist Demetrius Chilaiditi, is known colonic interposition between the liver and diaphragm [1]. Colonic interposition is usually an asymptomatic radiologic sign and seen in routine chest X-ray. Chilaiditi syndrome refers to the medical condition in which a Chilaiditi sign is accompanied by clinical symptoms [2]. The prevalence in the general population is quite low and the syndrome is more common male [3]. In patients presenting with Chilaiditi syndrome, the most common symptoms are abdominal pain, nausea, vomiting, and constipation, and respiratory problems.

The differential diagnoses of Chilaiditi syndrome can also contain subdiaphragmatic abscess, pneumoperitoneum, bowel obstruction, volvulus, ischemic bowel, or inflammatory conditions [4].

We presented, a case of peptic ulcer perforation which must be considered in the differential diagnosis of this syndrome that is rare.

Case Report

62-year-old man with chronic constipation, chest and abdominal pain was admitted to our emergency. On physical examination there were acute abdominal findings such as distention, tenderness on palpation, defense and rebound. It learned from his history that he has cirrhosis and his symptoms began before 2 days ago. White blood count is 18.000/uL and on biochemical evaluation elevated live function test (AST: 85 U/L (5-40 U/L) and ALT: 70 U/L (5-40 U/L)). Elevation of right hemidiaphragma and presence of colonic haustra between hemidiaphragma and liver with free air below the diaphragm were noticed on abdominal x-ray (Figure 1). Computed tomography depicted colonic haustrations between right hemidiaphragm and liver (Figure 2). Therefore the patient diagnosed as “Chilaiditi syndrome” radiologically. Laparotomy was performed because the patient had findings of acute abdomen. Prepyloric peptic ulcer perforation was detected. Colonic segments positioned in hepatodiaphragmatic area were released from adhesions, repositioned in the abdomen, and loose diaphragm was plicated. Postoperative period was uneventful and the patient was discharged 6 days after the operation.

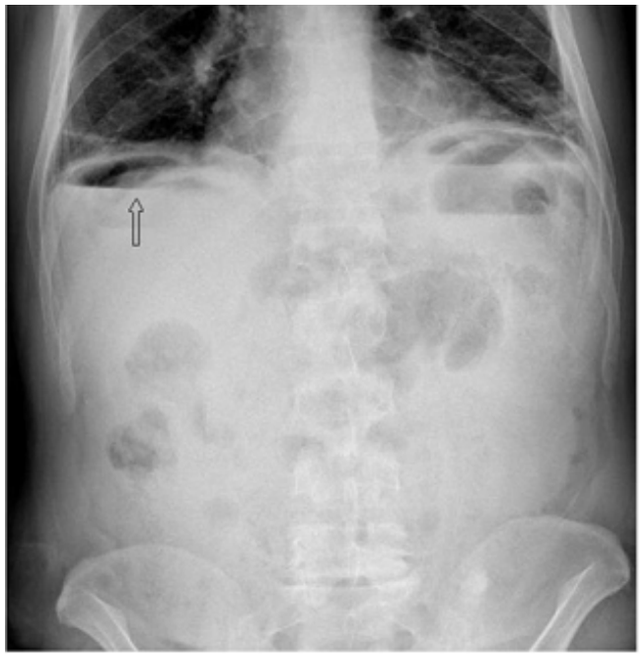


Figure 1. The presence of free air below the diaphragm on the imaging of abdominal x-ray.

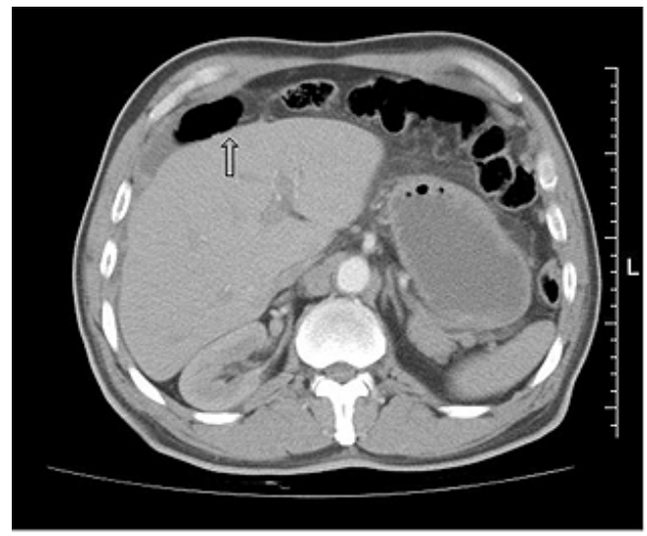


Figure 2. Chiliaditi appearance on the computed tomography.

Discussion

The hepatodiaphragmatic interposition of the colon was described for the first time by Cantini in 1865. In 1910, the radiologist Demetrius Chiliaiditi, presented a small case series of 3 patients with the incidental radiologic finding of colonic interposition between the liver and diaphragm [1]. The prevalence in the general population ranging between of 0.025-0.28% and the incidence usually increases with age. The rate, the patients with cirrhosis, is reaches 22%. Ratio of female to male is ¼ [3]. Our case was 62 years old man and he had liver cirrhosis.

This syndrome is usually asymptomatic, presented as an incidental finding on radiographs. In patients presenting with Chilaiditi syndrome, the most of common symptoms are gastrointestinal such as abdominal pain, nausea, vomiting, and constipation, followed by respiratory distress, and chest pain [5]. In our patient, there were abdominal distention, tenderness on palpation, defense, and rebound sign.

Intestinal, hepatic, and/or diaphragmatic etiologies contribute to the pathogenesis of Chilaiditi sign and syndrome. Under normal conditions, suspensory ligaments and fixation of the colon block interposition of the colon between the liver and diaphragm. Nevertheless, variations in normal anatomy can give rise to the pathologic interposition of the colon. These anatomic variations can contain the absence, laxity, or elongation of the suspensory ligaments of the transverse colon, as well as dolichocolons or congenital malpositions. Anatomic deterioration can also result from functional disorders such as chronic constipation, aerophagia, cirrhosis (liver atrophy), diaphragmatic paralysis, chronic lung disease (enlargement of the lower thoracic cavity), obesity, multiple pregnancies, and ascites (increased intra-abdominal pressure) [3;6]. In our case, there was liver atrophy and ptosis due to liver cirrhosis.

Because patients are usually asymptomatic, diagnosis of syndrome is generally incidental based on the chest or abdominal

X-ray. When the air is located under the right hemidiaphragm, differential diagnoses should be considered. The most important differential diagnoses include pneumoperitoneum and subphrenic abscess. The finding of normal plicae circulares or haustral markings of the colon under the diaphragm can rule out these more serious entities. The differential diagnoses of Chilaiditi syndrome can besides contain bowel obstruction, volvulus, retroperitoneal mass, intussusceptions, bowel perforation, ischemic bowel, inflammatory conditions (e.g., appendicitis or diverticulitis), posterior lesions of liver, and omental fat. X-ray films, ultrasonography and tomography can assist diagnosis [2;3]. In our case, there was peptic ulcer perforation which must be considered in the differential diagnosis.

The treatment of Chilaiditi syndrome is usually conservative. This treatment includes bed rest, parenteral fluid therapy, nasogastric decompression, enemas and laxatives. The success of conservative treatment is demonstrated by the disappearance of the air under the diaphragm on the repeat radiograph [3]. Unless the patient responds to initial conservative treatment, then surgical treatment is indicated. This treatment may be required in cases of intestinal obstruction or ischemia, insistent abdominal pain, and acute abdomen such as perforation and inflammation. The surgical approach depends on the nature of interposed segment of colon and includes a variety of methods such as cecopexy, hepatopexy, and colectomy [3]. Our patient hasn't shown improvement after the conservative treatment. So, surgical treatment was performed and peptic ulcer perforation was repaired. Colonic segments positioned in hepatodiaphragmatic area were released from adhesions, repositioned in the abdomen, and loose diaphragm was plicated.

In conclusion, Chiliaditi syndrome is rare and generally asymptomatic. However, it should be kept in mind that this syndrome might require surgical intervention for colonic volvulus, bowel obstruction or ischemia, and persistent pain or it could be associated with other acute abdominal conditions such as peptic ulcer perforation which was detected in the present case report. Patients with Chiliaditi syndrome diagnosed radiologically and with acute abdominal findings should be treated surgically.

Competing interests

The authors declare that they have no competing interests.

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