

Chilaiditi's syndrome: A case report

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Summary

Chilaiditi's syndrome is the interposition of the colon or small bowel between the right hemidiaphragm and the liver. In general, patients are asymptomatic, but some patients have been associated with gastrointestinal or respiratory symptoms. Here is reported a 6-year-old boy who was admitted to our hospital complaining of breathlessness and respiratory distress caused by Chilaiditi's syndrome which was treated conservatively. (*Turk Arch Ped* 2011; 46: 253-5)

Key words: Chilaiditi's syndrome, child

Introduction

This syndrome was described by Demetrius Chilaiditi who was a Viennese radiologist in 1910 for the first time as hepatodiaphragmatic "interposition" of the colon or small intestines (1). There is a tendency to name this condition as Chilaiditi sign when no complaints are present and as Chilaiditi's syndrome when accompanied by complaints (2). Hepatodiaphragmatic interposition is a rather rare condition and has an incidence ranging from 0.025% to 0.28% in the general population (3). The incidence increases with age and is much lower during childhood (4). Although most cases have no complaints, some acute, chronic or recurring complaints related to the gastrointestinal or respiratory system may be observed (4).

In this article, a 6-year-old male patient who presented with respiratory distress and was diagnosed with Chilaiditi's syndrome as a result of radiologic investigations is presented in the light of the literature.

Case report

A 6-year-old male patient was presented with complaints of uneasy breathing, sighing from time to time and mild respiratory distress. Although the degree of the complaints increased and decreased from time to time, they had been

continuing for about a year. Physical examination revealed no pathology. Complete blood count and blood biochemistry were normal. Appearance of gas was observed below the right diaphragm on postero-anterior chest graphy (Picture 1). Electrocardiogram, respiratory function tests and cardiac enzymes were found to be normal. On CT, a colon segment was observed between the liver and the right hemidiaphragm extending to the right hemithorax (Picture 2, a-b). For differential diagnosis of Chilaiditi's syndrome from diaphragm hernia magnetic resonance imaging was performed and the diagnosis of Chilaiditi's syndrome was confirmed by demonstrating that the diaphragm was intact (Picture 3). The medical history of the patient revealed complaints including intestinal irregularities and constipation occasionally. Bed rest, bowel regulators and laxatives for periods of complaints were given. The complaints of the patient improved with "conservative" therapy. The patient is still being followed up, since digestive system complications which may need surgical treatment can develop and surgical treatment may be needed, if respiratory system complaints recur and do not respond to medical treatment.

Discussion

Chilaiditi's syndrome was described by Demetrius Chilaiditi in 1910 for the first time with three cases who had no complaints (1). Its incidence ranges between 0.025% and

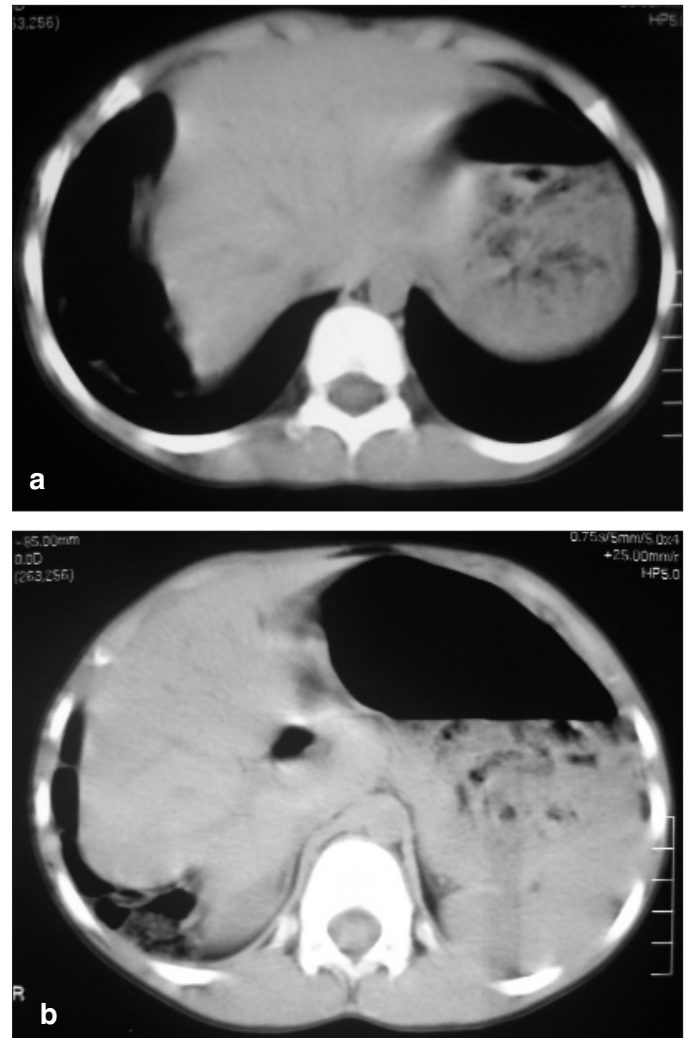
0,28% and increases with age (3,4). Most of the cases remain without complaints and are diagnosed accidentally during radiologic investigations. Hepatodiaphragmatic interposition may cause acute, chronic or recurring complaints including respiratory distress and chest pain related to the respiratory system and abdominal pain, vomiting, abdominal distension, decrease in appetite related to the digestive system. It can also lead to conditions which require urgent surgical intervention including volvulus, incarceration and perforation (5-7). In addition, this condition should always be kept in mind to differentiate from pneumoperitoneum because of its typical radiologic appearance of "gas below the diaphragm" (8).

In the formation of hepatodiaphragmatic interposition, hepatic factors including ptotic or small liver, abnormal falciform ligament or absence of the falciform ligament, diaphragmatic factors including degeneration of the diaphragmatic muscles, phrenic nerv palsy and increase in intrathoracic pressure as a result of tuberculosis or emphysema, colonic factors including abnormal extension of the colon, abnormal suspensory ligament or absence of the suspensory ligament, congenital malposition or malrotation of the colon are accused (8,9). Colonic tension caused by aerophagia especially in patients with mental deficit is proposed to be one of the most important causes in children (6,9). In the series of Huang WC et al. (6), aerophagia was found to be the cause in 46% of the patients.

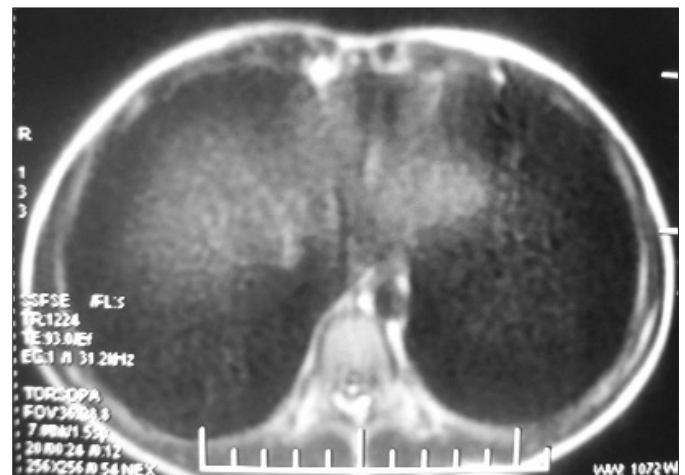
Conservative or surgical therapy may be performed for treatment of Chilaiditi's syndrome. Bed rest, nasogastric



Picture 1. Gas is observed below the diaphragm in the right side on postero-anterior chest graphy



Picture 2. Computarized tomography revealed the following findings: (a) An intestinal loop is observed between the diaphragm and the liver. (b) The colonic segment displaced upwards from the area between the liver and the right kidney is observed in the lower sections showing haustration



Picture 3. Magnetic resonance imaging revealed that the diaphragm was intact

decompression, diet rich in fiber, enema and laxatives may be used in the extent of "conservative" therapy (5,8). A need for surgical treatment may arise in a portion of the patients, cases who need urgent surgical treatment and whose complaints do not improve with "conservative" therapy (6,7). In the literature, patients who were operated because of volvulus, incarceration, perforation and acute abdomen and who had undergone colectomy or colopexy have been reported (6,7). Again, patients who were given medical treatment because of complaints including abdominal pain, constipation, growth retardation, respiratory distress, who were treated surgically, since no response could be obtained to medical treatment and whose complaints improved after the operation have been reported (6,10).

In this case presented, the patient whose complaints improved as a result of medical treatment is being followed up for possible problems.

Chilaiditi's syndrome is an important picture which should be kept in mind, since it may lead to severe acute and chronic complaints in some cases though no complaints are present mostly and to severe complications and may be confused with conditions which require surgical treatment because of its typical radiologic appearance. In suspected cases, further radiologic investigations should be performed.

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