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Case Report

Chilaiditi Syndrome-Diagnostic Dilemma: Case Report

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Abstract

In Chilaiditi's syndrome is uncommon clinical condition. Mostly it is a symptomless condition and rarely patient can present with upper abdominal frequent pain. We report a patient who presented with recurrent severe abdominal pain in surgical OPD. Routine blood investigations were within normal limits. Plain X-Ray abdomen showed interesting findings which were confirmed on computed tomography (CT). There was interposition of transverse colon in between the right hemi-diaphragm and liver Chilaiditi's sign). The clinical presentation is informative because of recurrent abdominal pain associated with interposition of colon between the liver and the right hemi-diaphragm.

Key words: Chilaiditi's Syndrome; Symptomless; Recurrent Severe Abdominal Pain; Right Hemi-Diaphragm

Introduction

Interposition of the colon in between liver and right hemidiaphragm is rare [1,2]. The occurrence on abdominal or chest X-rays is around 0.1% but it can be up to 1% in series of older adults [3]. It has also been reported in children [4]. Its incidence is about 0.25% to 0.28% of the general population. It was first described by Demetrious Chilaiditi in 1910 [5]. Chilaiditi's syndrome is defined as the combination of the sign with other clinical manifestations, which are usually gastrointestinal. In Chilaiditi's syndrome, a rare occurrence, there is upper abdominal pain due to interposition of hepatic flexor of colon between right lobe liver and dome of right hemi-diaphragm. Most of the time these patients are asymptomatic. A few may present with indigestion and rarely with recurrent upper abdominal pain. Rarely abnormally paced colon may compress gastric outlet leading to obstruction [6]. Loaded colon may produce recurrent respiratory distress due compression on lower lobe of right lung [7]. This syndrome may be coincidently found on X-ray chest or CECT abdomen in asymptomatic patient. Our patient, 65 years male presented with gastric outlet obstruction. To our knowledge, this is the second known reported case of Chilaiditi's syndrome in which symptoms resulted from compression of the gastric outlet by the abnormally placed colon.

Case Report

A 65 years male presented in OPD with history of frequent severe upper abdominal pain along with distension after meals. Pain abdomen was associated with nausea and vomiting. He was diagnosed as case of acute gastritis and was put on antacids and was advised to regulate his diet. Examination of the abdomen did not reveal tenderness, or gaurding. Bowel sounds were normal. No palpable abdominal masses were appreciated, and there was no costovertebral angle tenderness. The initial impression was functional abdominal pain or acute gastritis. The patient was admitted for observation, hydration, and serial abdominal examinations. He was treated with antiemetics. His condition improved, and was asymptomatic within 48 h. He was discharged from hospital. Follow-up examinations revealed an important history of several similar attacks. There was no history of smoking, high fatty diet and patients was eating a bland diet. Ultrasound and all blood investigations were within normal range. Patient was advised plain X-Ray chest including upper abdomen which revealed gas under diaphragm due to interposition of colon in between liver and right dome of diaphragm [Fig-1]. CECT abdomen confirmed X-Ray findings [Fig-2]. Patient was diagnosed with Chilaiditi's syndrome. Considering his advance age, he was treated conservatively.

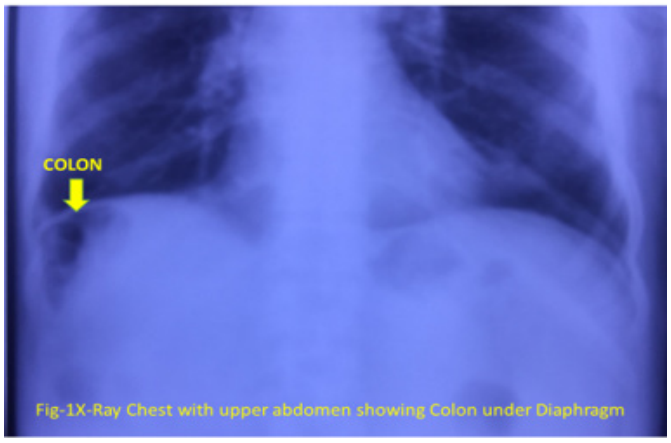

Figure 1: X-Ray Chest upper abdomen showing Colon under Diaphragm.

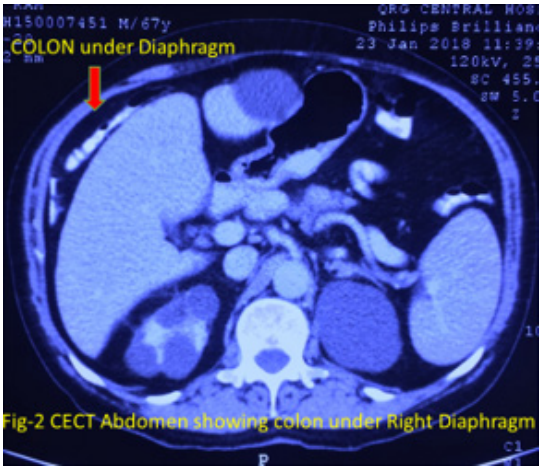

Figure 2: 2 CECT Abdomen showing colon under right Diaphragm.

Discussion

Hemi-diaphragmatic interposition of the colon is clinical entity and its incidence about 0.25% to 0.28% of the general population [1]. It was first described by Demetrious Chilaiditi in 1910 [5]. He described this phenomenon of movement of the liver that allows the transverse colon to interpose between it and the hemidiaphragm on abdominal roentgenology [5]. Demetrious Chilaiditi, original 3 cases presented with intermittent abdominal pain that resolved without surgery. The sign is usually not associated with symptoms. Chilaiditi's syndrome is a clinical abnormality consisting of episodic, recurrent, abdominal pain sometimes associated with colonic volvulus but occasionally with intermittent upper abdominal pain.

Usually there is abnormal anatomy of colon. Hepatic flexor is with loose mesentery and due to this, lax transverse colon get displaced between right lobe of liver and right hemi diaphragm. Sometime, due to lax transverse mesocolon, the transverse colon shift anteriorly and medially in the subhepatic space (Morison's pouch) and thus crosses beneath the proximal duodenum and extending anterior to the pancreatic head and may press the anterior surface of the duodenal-jejunal flexure resulting in obstruction [6].

The radiologic anatomy of the patient's colon is usually atypical in Chilaiditi's syndrome and it may show movement of abnormal one-half the length of the transverse colon into the subhepatic space and Winslow's canal [5,8]. The exact cause is not always known, but it may occur in patients with a long and mobile colon (dolichocolon), chronic lung disease such as emphysema, or liver problems such as cirrhosis and ascites. Chilaiditi's sign is generally not associated with symptoms, and is most commonly an incidental finding in normal individuals. Absence or laxity of the ligament suspending the transverse colon or of the falciform ligament are also thought to contribute to the condition. It can also be associated with relative atrophy of the medial segment of the left lobe of the liver. In this case, the gallbladder position is often anomalous as well – it is often located anterior to the liver, rather than posterior

Normally this causes no symptoms, and this is called Chilaiditi's sign. The sign can be permanently present, or sporadically. This anatomical variant is sometimes mistaken for the more serious condition of having air under the diaphragm (pneumoperitoneum) which is usually an indication of bowel perforation, possibly leading to surgical interventions. Chilaiditi syndrome refers only to complications in the presence of Chilaiditi's sign. These include abdominal pain [9], torsion of the bowel transverse colon volvulus [10,11] or shortness of breath [4].

Differential diagnosis includes interpositio hepato-diaphragmatica, subphrenic displacement of the colon, subphrenic interposition syndrome and pseudo pneumoperitoneum. Since laparoscopic treatment has been successful with colonic malformations [12,13], So, diagnostic laparoscopic is essential to rule out possible serious colonic etiologies. Conservative management is gold standard and surgical intervention is required when there is associated colonic malformations or to relieve the obstruction or for management of frequent respiratory distress.

Conclusion

Chilaiditi's syndrome is defined as the combination of the sign with other clinical manifestations, which are usually gastric in nature. Clinician should aware of the clinical picture that may generate the syndrome. It is imperative that the surgeon should be aware this condition and should recognise its radiological image and thus makes the correct differential diagnosis otherwise patient may get unnecessary surgery for bowel perforation (presence of a small crescent of air under right hemi-diaphragm).

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