CASE REPORT PEER REVIEWED | OPEN ACCESS

An unusual case of displaced colon: Chilaiditi’s sign

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ABSTRACT

Introduction: Chilaiditi’s sign was first described in 1910 by a Greek radiologist, Demetrius Chilaiditi. It is defined by the interposition of a part of the colon between the liver and the right hemidiaphragm. The incidence is estimated at 0.025–0.28%. Case Report: We report the case of a 65-year-old male patient, with history of functional colopathy for several years with constipation since 10 days. Clinical examination showed a breathless patient with a painful and distended abdomen. Abdominal-pelvic computed tomography (CT) showed Chilaiditi’s sign. After four days of symptomatic treatment, he was discharged from hospital completely asymptomatic. Conclusion: The recognition of the radiological evidence of pneumoperitoneum and pseudo-pneumoperitoneum is important to prevent unnecessary procedures, such as an exploratory laparotomies.

Keywords: Chilaiditi, Colon, Interposition, Sign, Syndrome

INTRODUCTION

Chilaiditi’s sign was first described in 1910 by a Greek radiologist, Demetrius Chilaiditi who gave it his name while he was working in Vienna [1]. It is a very rare situation defined by the interposition of a part of the colon between the liver and the right hemidiaphragm [2]. The incidence is estimated at 0.025–0.28% [3]. There is a male predominance: male to female ratio 4/1 [4]. It rises with age to an estimated 0.2% for males over 65 years [5].

This sign is most often asymptomatic. When associated with clinical symptoms such as nausea, vomiting, anorexia, constipation, and epigastric pain, it becomes a syndrome. Occasionally, serious complications can occur such as internal hernias, colonic volvulus, and acute intestinal obstruction [6, 7]. Intestinal, hepatic, and diaphragmatic factors have been implicated in the etiology of Chilaiditi’s syndrome [8]. In the absence of complications, its treatment is most often conservative [9].

CASE REPORT

We report the case of a 65-year-old male patient, with history of functional colopathy for several years with constipation since 10 days. Clinical examination showed a breathless patient with a painful and distended abdomen. There was no fever or tachycardia.

Abdominal-pelvic CT showed an interposition of the transverse colon between the liver and the right hemidiaphragm (Figures 1 and 2) which was consistent with Chilaiditi’s sign. There was no evidence of intestinal obstruction, digestive distress, or peritoneal effusion. After four days of bed rest, high fiber diet, fluid supplementation, and stool softeners, our patient recovered well, and was discharged from hospital completely asymptomatic.

DISCUSSION

Hepatodiaphragmatic interposition of the colon or Chilaiditi’s sign is generally asymptomatic and often
should not be confused with a pneumoperitoneum which is the presence of free air in the peritoneal cavity. The presence of haustration makes it possible to differentiate between these two entities. Gas does not generally mold the diaphragmatic dome, unlike pneumoperitoneum [4]. Abdominal computed tomography remains the benchmark examination for a definitive diagnosis [11]. It clearly shows the interposition of part of the colon between the liver and the right hemidiaphragm which is raised.

Several factors are involved in the etiology of Chilaiditi’s syndrome. It is a malposition linked to a modification of one of the organs in question, liver, diaphragm or colon: Colonic elongation due to chronic constipation and congenital malpositions can cause this syndrome by increasing colonic mobility [12, 13].

For the liver, distention of the falciform ligament which normally keeps the liver attached anteriorly, cirrhosis, or liver surgery that decreases liver volume.

For the diaphragm, all causes of dome rise like paralysis of the phrenic nerve. Chilaiditi’s syndrome can present a wide variety of symptoms: nausea, vomiting, loss of appetite, pain, and dyspnea. Complications such as respiratory failure, occlusion or digestive ischemia are exceptional and require treatment.

Asymptomatic patients do not need treatment. In case of non-severe symptoms, treatment is initially conservative: bed rest, decompression with a nasogastric tube, intravenous fluids, enemas, and laxatives [4].

The occurrence of rare complications such as an intestinal volvulus requires surgical treatment but conservative treatment is accepted as the best initial approach, since the volvulus generally resolves spontaneously [6]. However, 26% of patients may require colectomy [14]. Alternatively, laparoscopic colopexy has been described [10].

CONCLUSION

Chilaiditi’s sign and syndrome are important differential diagnoses for general surgeons. The recognition of the radiological evidence of pneumoperitoneum and pseudoperitoneum is important to prevent unnecessary procedures, such as an exploratory laparotomies.

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Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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