

Chilaiditi sign secondary to a right renal agenesis

Kenza Berrada, Asaad El Bakkari, Hounayda Jerguigue,
Rachida Latib, Youssef Omor

ABSTRACT

Chilaiditi's sign is a rare radiological finding in which a portion of the colon or small intestine is interposed between the liver and right hemidiaphragm

radiology department to release a body-computed tomography (CT) for its breast cancer extension assessment. We incidentally discovered a colic hepato-phrenic interposition related to a Chilaiditi sign associated with right renal agenesis. In this case report we treated Chilaiditi sign can exist without Chilaiditi syndrome, as it could be associated with other pathologies and abnormal anatomic malformation like renal agenesis.

Keywords: Chilaiditi sign, Chilaiditi syndrome, Renal agenesis

How to cite this article

Berrada K, El Bakkari A, Jerguigue H, Latib R, Omor Y. Chilaiditi sign secondary to a right renal agenesis. *Edorium J Radiol* 2022;8(2):10–13.

Article ID: 100023R02KB2022

Kenza Berrada¹, Asaad El Bakkari², Hounayda Jerguigue¹, Rachida Latib², Youssef Omor³

Affiliations: ¹Resident in Radiology, Department of Radiology, National Institute of Oncology, UHC Ibn Sina, Rabat, Morocco; ²Professor Chief of the Radiology, Department Oncology, National Institute UHC Ibn Sina, Rabat, Morocco; ³Assistant Professor, Department of Radiology, National Institute of Oncology, UHC Ibn Sina, Rabat, Morocco.

Corresponding Author: Kenza Berrada, Rabat 140000, Morocco; Email: Knouz.berrada@gmail.com

Received: 05 March 2022

Accepted: 29 May 2022

Published: 08 November 2022

doi: 10.5348/100023R02KB2022CR

INTRODUCTION

Chilaiditi sign is defined by hepatophrenic intestinal interposition. When it is associated to pain, it is called Chilaiditi syndrome; commonly, incidentally discovered, and/or secondary to a complication like intestinal occlusion and bowel ischemia. We describe the case of a patient who was admitted to our radiology department to release a body-computed tomography (CT) for its breast cancer extension assessment, we incidentally discovered a colic hepato-phrenic interposition related to a Chilaiditi sign associated with right renal agenesis.

CASE REPORT

A 66-year-old female with a newly diagnosed breast carcinoma presented with right upper quadrant pain and sensation of heaviness.

Investigations

A contrast-enhanced CT of thoracic, abdomen, and pelvis was performed with series obtained in portal phase for initial extension assessment and to explore the symptomatology. It demonstrates an interposition of transverse colon between liver and diaphragm (Figure 1). Besides CT also shows a right empty renal fossa with left normal kidney and no other anomalies were noted, related to a renal agenesis (Figure 2).

Differential diagnosis

In front of the medical history of breast carcinoma the diagnosis of an interposed intestine between the diaphragm and the liver can be mistaken with a peritoneal node, especially when it is empty. Pneumoperitoneum can be another misleading diagnosis in a traumatic context. Finally, a perihepatic abscess can mimic it.

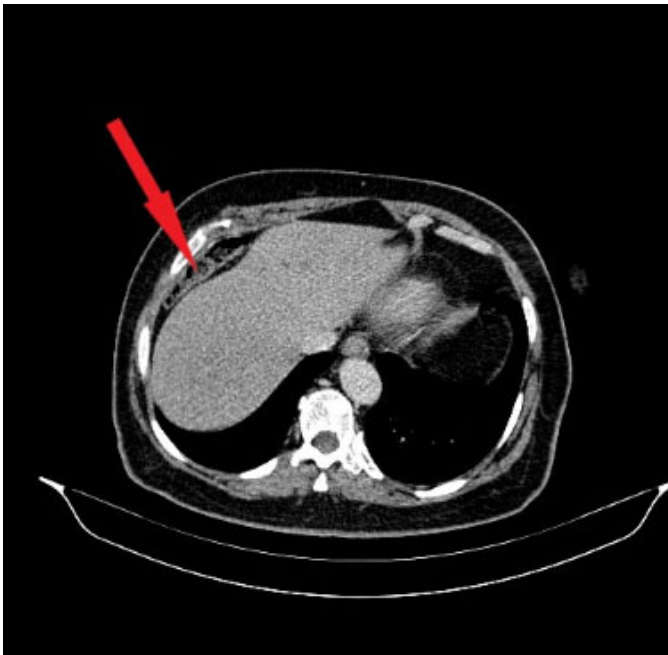


Figure 1: Axial-CT section with contrast enhancement demonstrates visible intestinal haustra below the diaphragm.



Figure 2: Axial-CT reconstruction shows the interposition of the colon between the diaphragm and the liver and right renal agenesis.

Treatment

No intervention is required for an asymptomatic patient with Chilaiditi sign. Those with abdominal pain or distension are usually treated conservatively with analgesia and fluid resuscitation. Patients with recurrent presentations or evidence of bowel ischemia may be offered surgical treatment.

DISCUSSION

Chilaiditi syndrome is used to describe pain caused by an interposition of the intestine between liver and diaphragm, which is called Chilaiditi sign. Firstly, described in 1910, it is named after a Greek radiologist Chilaiditi Demetrius [1].

It is an uncommon syndrome, occurring its incidence varies from 0.25% to 0.28% of the general population and affects mainly male and elderly patients [2, 3].

Different predisposing factors engender the development of Chilaiditi sign [4]. Its cause still remains unknown, but it is probably multifactorial. Congenital anatomical abnormalities such as colonic elongation and laxity of colonic and hepatic suspensory ligaments have been postulated as the principal predisposing factors. Other predisposing situations can be acquired such as an enlarged lower thoracic outlet (e.g., pregnancy, emphysema, and cirrhosis with ascites), or organ shrinkage (atrophic cirrhosis of the liver). Fat deposition between the liver and the colon, in obese individuals, widens the space between the two organs and can also favor the migration of the colon [5].

It is usually asymptomatic and mostly discovered incidentally on CT examination. Most frequent symptoms are abdominal pain, nausea, vomiting, and respiratory distress. Differential diagnoses of this radiographic sign include pneumoperitoneum, peritoneal nodes, and subphrenic abscess. Main complications are intestinal occlusion and bowel ischemia [6]. Chilaiditi syndrome has been associated with a variety of pulmonary or gastrointestinal malignancies (involving the colon, rectum, or stomach) [7].

If Chilaiditi sign is visualized and the patient is symptomatic, it is then referred to as Chilaiditi's syndrome. Gastrointestinal symptoms, such as epigastric pain, nausea, vomiting, constipation, abdominal distention are the main symptoms [6].

Diagnosis of the disease is made primarily through CT scans. It demonstrates the air below the diaphragm associated with visible intestinal haustra, which does not change with variation in patient position. Besides, elevated right hemidiaphragm above the liver by the intestine and depression of the superior margin of the liver below the left hemidiaphragm are associated. The differential diagnoses of Chilaiditi syndrome can include diaphragmatic hernia, pneumoperitoneum, and subphrenic abscess [7].

Complications of Chilaiditi syndrome may include a volvulus of the cecum, splenic flexure, or transverse colon. Cecal perforation and, rarely, perforated subdiaphragmatic appendicitis can also occur as complications of Chilaiditi syndrome [8]. Respiratory distress, cardiac arrhythmia and serious complications, can also be seen [9].

CONCLUSION

In this case report we treated Chilaiditi sign can exist without Chilaiditi syndrome, as it could be associated with other pathologies and abnormal anatomic malformation like renal agenesis. Radiologic investigation is crucial to stand up the right diagnosis, the radiologist has to pay attention to not confuse it with other differential diagnosis, mainly with pneumoperitoneum and peritoneal nodes for patients with malignancies.

REFERENCES

1. Maizlin ZV. Wonders of Radiology. USA: CreateSpace Independent Publishing Platform; 2010.
2. McNamara RF, Cusack S, Hallihan P. Chilaiditi's Syndrome. *West J Emerg Med* 2009;10(4):250.
3. Chen SY, Liu CT, Tsai YC, Yu JC, Lin CH. Sigmoid volvulus associated Chilaiditi's syndrome. *Rev Esp Enferm Dig* 2007;99(8):482–3.
4. Tangri N, Singhal S, Sharma P, et al. Coexistence of pneumothorax and Chilaiditi sign: A case report. *Asian Pac J Trop Biomed* 2014;4(1):75–7.
5. Sorrentino D, Bazzocchi M, Badano L, Toso F, Giagu P. Heart-touching Chilaiditi's syndrome. *World J Gastroenterol* 2005;11(29):4607–9.
6. Antonacci N, Di Saverio S, Biscardi A, Giorgini E, Villani S, Tugnoli G. Dyspnea and large bowel obstruction: A misleading Chilaiditi syndrome. *Am J Surg* 2011;202(5):e45–7.
7. Kapania EM, Link C, Eberhardt JM. Chilaiditi syndrome: A case report highlighting the intermittent nature of the disease. *Case Rep Med* 2018;2018:3515370.
8. Moaven O, Hodin RA. Chilaiditi syndrome: A rare entity with important differential diagnoses. *Gastroenterol Hepatol (N Y)* 2012;8(4):276–8.
9. Özer C, Zenger S. Chilaiditi syndrome in a patient with urological problems: Incidental diagnosis on computed tomography. *Can Urol Assoc J* 2012;6(2):E75–6.

Author Contributions

Kenza Berrada – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Asaad El Bakkari – Interpretation of data, Drafting the work, Revising the work critically for important

intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Hounayda Jerguigue – Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Rachida Latib – Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Youssef Omor – Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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.

Copyright

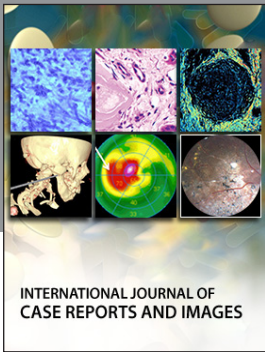
© 2022 Kenza Berrada et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

Access full text article on
other devices



Access PDF of article on
other devices





INTERNATIONAL JOURNAL OF
CASE REPORTS AND IMAGES



VIDEO JOURNAL OF
CLINICAL RESEARCH



VIDEO JOURNAL OF
BIOMEDICAL SCIENCE



INTERNATIONAL JOURNAL OF
HEPATOBIILIARY AND
PANCREATIC DISEASES



INTERNATIONAL JOURNAL OF
BLOOD TRANSFUSION AND
IMMUNOHEMATOLOGY



EDORIUM JOURNAL OF
OPHTHALMOLOGY



Submit your manuscripts at
www.edoriumjournals.com



EDORIUM JOURNAL OF
MEDICINE



EDORIUM JOURNAL OF
CARDIOTHORACIC AND
VASCULAR SURGERY



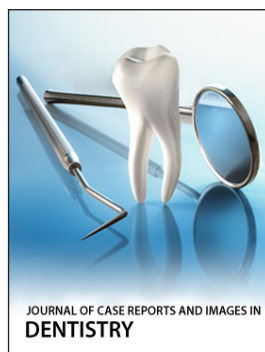
JOURNAL OF CASE REPORTS
AND IMAGES IN ORTHOPEDICS
AND RHEUMATOLOGY



EDORIUM JOURNAL OF
PSYCHOLOGY



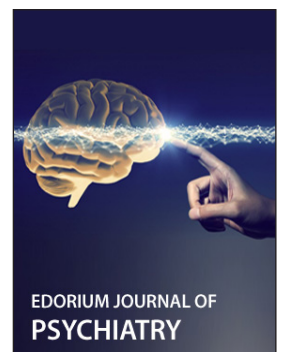
EDORIUM JOURNAL OF
CELL BIOLOGY



JOURNAL OF CASE REPORTS AND IMAGES IN
DENTISTRY



EDORIUM JOURNAL OF
CANCER



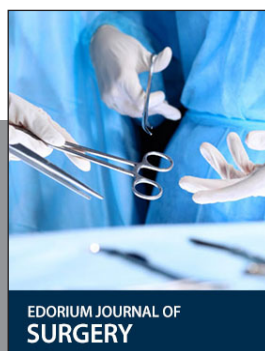
EDORIUM JOURNAL OF
PSYCHIATRY



JOURNAL OF CASE REPORTS AND
IMAGES IN INFECTIOUS DISEASES



EDORIUM JOURNAL OF
ANATOMY AND EMBRYOLOGY



EDORIUM JOURNAL OF
SURGERY



JOURNAL OF CASE REPORTS
AND IMAGES IN PATHOLOGY



EDORIUM JOURNAL OF
ANESTHESIA