

Squeezed Heart

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Right answer: Chilaiditi's syndrome

Compression of the right atrium can be caused by different etiologies. "Cardiac lipomatosis" is characterized by the accumulation of adipose tissue caused by the hyperplasia of lipocytes and is frequently located in the interatrial septum. However, lipomatous hypertrophy localized to the epicardium can also be seen as an echolucent zone surrounding the heart. Right atrial compression due to "neoplasias" is very rare and may be due to the neighboring neoplasm, mediastinal tumors, or metastases. Metastases may reach the heart via the lymphatic route to the pericardium, by the hematogenous route to the myocardium, or by the transvenous route to the right heart chambers. "Extralobar lung sequestrations (ELS)" are often located between the posterior basal segments of the lower lung lobe and the diaphragm. Left-sided lesions are more common than right-sided lesions. ELS can be subdiaphragmatic and confused with diaphragmatic hernia or intestinal interpositions. ELS patients are usually diagnosed in infancy with respiratory distress and chronic cough. In our patient, to obtain any pathological clue and/or to exclude possible differential diagnoses, a thoraco-abdominal computed tomography (CT) was performed. There was no appearance of malign formation or fatty and pulmonary tissue. However, interposition of the right colic flexure between the liver and diaphragm was shown. Eventually, the diagnosis of Chilaiditi's syndrome was made (Figure 3). The patient was conservatively treated with stool softeners and by abstaining from solid food. His further clinical course was unremarkable.

Intestinal interposition is a condition where a segment of the bowel is temporarily or permanently interposed between two organs. Among these, Chilaiditi's sign is the interposition of the colon between the diaphragm and the liver and is usually incidentally revealed by chest or abdominal radiographs with an incidence of 0.025, 0.28%. It is usually asymptomatic, and when accompanied with clinical symptoms, it is termed Chilaiditi's syndrome. Its incidence rises with increasing age, and it has a marked male predominance, as seen in this case. It was first described in 1910 by Demetrius Chilaiditi. Because of the very close location of the colonic segments to the heart, two organs seem to be touching each other, but the diaphragm and the pericardium comprise a distinct border. ECG, cardiac functions, and cardiac hemodynamics remain within normal limits.



Figure 3. Thoraco-abdominal CT scan discloses the presence of colonic interposition (asterisk) with posterior displacement of the liver and pressed right atrium

CT – computed tomography

Although the precise mechanism remains unknown, there are some predisposing factors, such as elongated colon, small liver, relaxation of the suspensory ligament, or phrenic nerve injury (1). In addition, a large space between the liver and the diaphragm may potentially lead to colonic interposition. Patients are usually asymptomatic. However, it can be associated with right upper quadrant pain, vomiting, abdominal distension, or cardiac complications such as angina and arrhythmias. Although CT is the main diagnostic tool, in case of cardiovascular complaints, TTE may reveal this strange entity. It is most often found incidentally. Chest X-ray and thoraco-abdominal CT are required to demonstrate this interposition. Interventions are usually not required for asymptomatic patients with Chilaiditi's sign, and treatment is usually conservative.

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References

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