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An Unusual Left-Sided Chilaiditi Sign: An Incidental Radiological Finding

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ABSTRACT

Keywords:

Chilaiditi sign
Left-sided Chilaiditi sign
Chest radiography
Bowel interposition

Chilaiditi sign is an uncommon radiological finding caused by interposition of bowel between the diaphragm and an abdominal organ. Although usually right-sided, left-sided involvement is rare. A 61-year-old woman presented with right lower limb swelling and was diagnosed with deep vein thrombosis. During assessment, a chest radiograph obtained for bilateral flank pain incidentally demonstrated elevation of the left hemidiaphragm with interposition of a bowel loop and visible haustral markings, consistent with a left-sided Chilaiditi sign. The patient had no symptoms attributable to the finding, and no specific intervention was required. Recognition of left-sided Chilaiditi sign on plain radiography and correlation with the clinical presentation can prevent misdiagnosis and unnecessary investigation or intervention.

علامة تشيلايديتي غير المألوفة في الجانب الأيسر: اكتشاف عرضي في التصوير الشعاعي

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الملخص

علامة تشيلايديتي هي علامة شعاعية غير شائعة تنتج عن انحشار الأمعاء بين الحجاب الحاجز وأحد أعضاء البطن. على الرغم من أنها تظهر عادةً في الجانب الأيمن، إلا أن إصابة الجانب الأيسر نادرة. حضرت امرأة تبلغ من العمر 61 عامًا تعاني من تورم في الطرف السفلي الأيمن، وشُخصت إصابها بتجلط الأوردة العميقة. أثناء الفحص، أظهرت صورة الصدر بالأشعة السينية التي أجريت بسبب ألم في الخصرتين، بشكل عرضي، ارتفاعاً في الحجاب الحاجز الأيسر مع انحشار حلقة من الأمعاء أسفلها وظهور التعرجات القولونية، بما يتوافق مع علامة تشيلايديتي في الجانب الأيسر. لم تكن لدى المريضة أي أعراض تُعزى إلى هذه العلامة، ولم تكن هناك حاجة لأي تدخل طبي. إن التعرف على علامة تشيلايديتي في الجانب الأيسر في التصوير الشعاعي البسيط وربطها بالحالة السريرية يمكن أن يمنع التشخيص الخاطئ والفحوصات أو التدخلات غير الضرورية.

الكلمات المفتاحية:

علامة تشيلايديتي
علامة تشيلايديتي على الجانب الأيسر
تصوير الصدر بالأشعة السينية
انحشار الأمعاء

1. Introduction

Chilaiditi sign is a radiological finding characterized by the interposition of a bowel loop between the diaphragm and an abdominal organ, most commonly the liver. It was originally defined by the radiologist Demetrius Chilaiditi in 1910 and it is an uncommon finding, with a reported incidence of approximately 0.025 to 0.28% [1], and most patients remain asymptomatic. When associated with symptoms such as abdominal pain, nausea, distension, or respiratory complaints, it is referred to as Chilaiditi

syndrome [2]. The finding is usually identified on plain radiography, with computed tomography (CT) useful for confirmation when the diagnosis is uncertain. Although typically right-sided, left-sided Chilaiditi sign is uncommon and may mimic other causes of subdiaphragmatic radiolucency. We report an incidental left-sided Chilaiditi sign in an asymptomatic patient.

2. Case Presentation

A 61-year-old woman with a history of hypertension treated with amlodipine presented with swelling, warmth, and tenderness of the

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right lower limb. Duplex ultrasonography confirmed deep vein thrombosis involving the common femoral and popliteal veins, and oral anticoagulation with apixaban was initiated. During the clinical assessment, she also reported bilateral flank pain, and a chest radiograph was subsequently obtained and demonstrated elevation of the left hemidiaphragm with interposition of a bowel loop beneath the hemidiaphragm, with visible haustral markings, consistent with a left-sided Chilaiditi sign (Fig. 1). The patient had no abdominal pain, nausea, vomiting, abdominal distension, or other symptoms attributable to the finding. No features suggestive of bowel obstruction or other acute abdominal pathology were identified. CT was not performed, as the patient remained clinically asymptomatic with respect to the radiological finding.

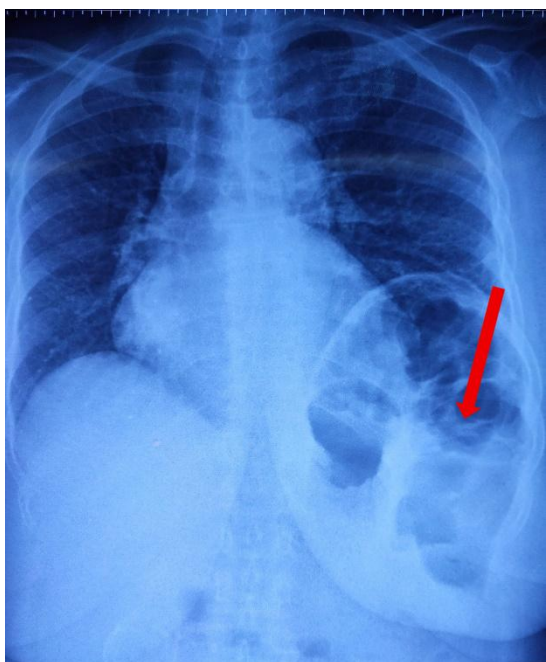


Fig. 1. Chest radiograph demonstrating elevation of the left hemidiaphragm with interposition of a bowel loop beneath the diaphragm (red arrow).

3. Discussion

Chilaiditi sign is an uncommon radiological finding most commonly observed on the right side and is usually asymptomatic. Left-sided Chilaiditi sign is considerably less common and may present a diagnostic challenge on plain radiography. The interposed bowel may produce subdiaphragmatic lucency that can be mistaken for pneumoperitoneum or other pathological findings [3]. In this patient, the absence of abdominal symptoms attributable to the radiological finding and the lack of clinical features suggesting bowel obstruction or another acute abdominal process supported conservative management. The presence of visible haustral markings on the radiograph further supported the diagnosis of bowel interposition. Given the patient's clinical stability and the characteristic radiographic appearance, CT was not considered necessary. However, CT would have been appropriate if clinical suspicion of an

alternative diagnosis, such as a subdiaphragmatic abscess, had remained.

Recognition of characteristic bowel markings and correlation with the clinical presentation are therefore important to avoid unnecessary investigations or intervention. In asymptomatic patients, Chilaiditi sign generally requires no specific treatment. In contrast, symptomatic cases, termed Chilaiditi syndrome, may present with gastrointestinal or respiratory symptoms and, rarely, complications such as bowel obstruction or volvulus. In our patient, the left-sided Chilaiditi sign was an incidental finding without symptoms attributable to the condition and required no specific intervention.

4. Conclusions

Left-sided Chilaiditi sign is an uncommon incidental radiological finding that can mimic other causes of subdiaphragmatic gas. Recognizing this anatomical variant and correlating the radiographic appearance with the clinical presentation can help avoid unnecessary investigations and intervention.

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Declarations

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Data availability: The data supporting this report are not publicly available because they contain information that could compromise patient privacy. Any relevant anonymized information may be made available from the corresponding author on reasonable request, subject to appropriate ethical and privacy considerations.

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