Chilaiditi's sign, a captivating radiological finding

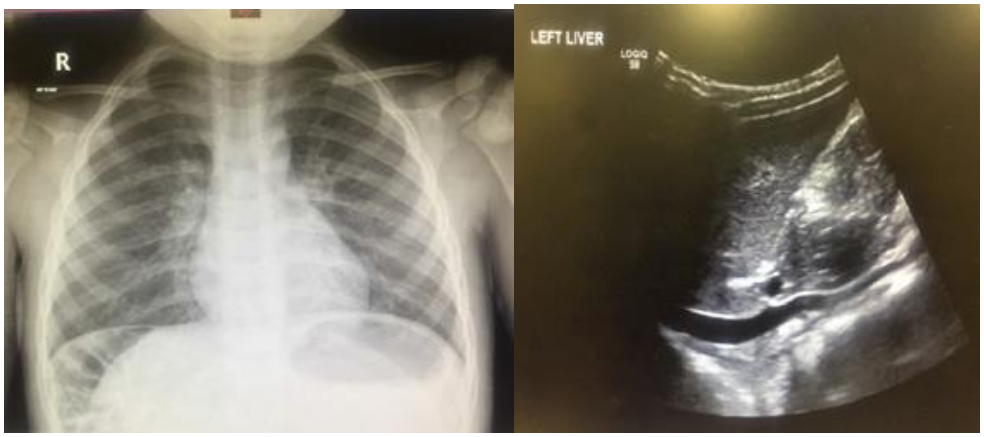
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Abstract

Background: Chilaiditi's sign is defined as the interposition of bowels between the liver and the right diaphragm on an X-Ray. When there are associated symptoms such as abdominal pain, tenderness, nausea, vomiting and anorexia, the case is referred to as Chilaiditi's syndrome. It is often misdiagnosed as a pneumoperitoneum.

Objective: To report a case of 4 year old child with Chilaiditi's syndrome and highlight how an incidental X-ray finding and prior knowledge about the condition aided diagnosis and further conservative management. The diagnosis of the syndrome is vital in order to avoid unnecessary surgical interventions.

Case Presentation: We present a rare case of a 4 year old boy who presented to our emergency department complaining of cough and intermittent fever. His clinical examination only revealed mild recession along with crackles over the right axilla. A chest X-ray was ordered which showed the air under the diaphragm. It was discussed with the radiologist consultant and after a literature review a diagnosis of Chilaiditi's syndrome was considered. There was a suggestion in literature that this sign can sometimes be associated with liver abnormalities so an ultrasound scan was performed which was normal. His hospital stay was uneventful and he had a favorable outcome. The family was updated regarding the condition and relevant information was shared with them.



Discussion: Chilaiditi's sign is named after the Greek radiologist Demetrius Chilaiditi who first described it when he was working in Vienna in 1910 and it is an incidental radiographic finding. Chilaiditi's sign presents as a crescent lucency below the right diaphragm due to malposition loops of the colon or small bowel which appears as the presence of air below the right diaphragm. Although the cause remains unknown, several theories have been touted including congenital meso-colonic redundancy, laxity of hepatic suspensory ligaments. Awareness of Chilaiditi's sign is important when free air under the diaphragm is seen in a patient who does not present symptoms and signs of abdominal emergency. It is an uncommon syndrome with a reported worldwide incidence of 0.25%-0.28% and a 4:1 male preponderance. Notwithstanding the benign nature, it can lead to various life threatening complications including obstruction, perforation or ischemia. It is therefore important to recognize this sign and proceed with timely management.

Conclusion: A review of the current literature on Chilaiditi's syndrome is conducted with a focus on increasing the familiarity of health care professionals with the conditions and stressing the importance of a physical examination in evaluating patients with what appears to be air under the diaphragm. Chilaiditi's sign and Chilaiditi's syndrome are rare entities and therefore are often misdiagnosed and mismanaged. Awareness of the radiological sign is important for all care providers so that they can opt for more conservative management strategies instead of unwarranted investigations and surgery.

Biography

Shaju Edavana has completed his primary medical education from the South India, Calicut Medical College followed by working in the Neonatology Department in Hadi Clinic, Kuwait. Meanwhile, he has done his MRCPCH (UK) and is currently practicing in NHS as a Senior Clinical Fellow in Neonatology.