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CONTINUING MEDICAL EDUCATION
ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Surgery Quiz – Case 57

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2025, 42(2):283–284

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A 54-year-old patient presented at the emergency room with pain in the upper right quadrant of the abdomen. A full blood test, an abdominal and chest x-ray, as well an electrocardiogram (ECG) were also done. The laboratory results returned normal. The only finding was from the abdominal X-ray (fig. 1).

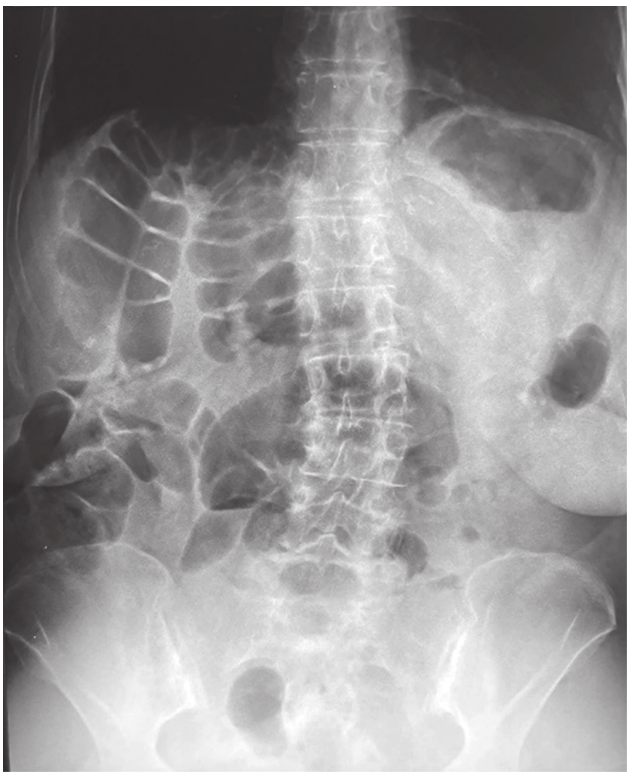

Figure 1.

Comment

Demetrius Chilaiditi was a Greek radiologist born on 11th of April 1883 in Vienna, Austria. He graduated in medicine, in 1908 from the University of Vienna. He studied radiology at Medical University Clinic, Vienna and Zentralröntgeninstitut. He set up private practice in Constantinople (Istanbul) and is one of the first members of the Turkish Radiological Society. He died on 2nd of January 1975 in Istanbul.

In 1910 he observed a segmental interposition of the colon (usually the transverse colon) between the liver and the diaphragm, which he named Chilaiditi sign. Intestinal interposition is a medical condition where a segment of the bowel is temporarily or permanently interposed between two organs, whether it is the liver and the diaphragm, the spleen and the diaphragm, the spleen and the left kidney or the stomach and the pancreas. Chilaiditi sign, including digestive symptoms, which range from mild abdominal pain to acute bowel obstruction is termed Chilaiditi syndrome. It has an incidence of 0.025–0.28% worldwide with a male predominance (male/female= 4:1). The incidence of Chilaiditi syndrome rises with increasing age. The hepatic flexure of the colon and much less frequently the small bowel occurs in 3–5% of Chilaiditi sign cases. Various factors have been implicated that result in the pathological interposition of the colon; these include hepatic, intestinal, diaphragmatic and other miscellaneous causes.

The exact cause of Chilaiditi syndrome is unknown, but it is thought to be related to anatomical variations, such as a long and mobile colon or lax ligaments that support the colon. It can also be associated with other conditions, such as cirrhosis, emphysema, or diaphragmatic paralysis.

A large space between the liver and the diaphragm may potentially lead to colonic interposition. Other factors include megacolon, an elongated/hypermobile colon with constipation, absence/laxity/elongation of the ligament suspending the transverse colon, abnormal gas accumulation due to aerophagia, chronic obstructive pulmonary disease, increased intra-abdominal pressure (obesity, multiple pregnancies and ascites), mental retardation and schizophrenia, which are also associated with anatomic abnormalities. Chilaiditi syndrome may also be an indirect manifestation of certain abdominal malignancies.

It may be asymptomatic or may be accompanied by a series of clinical symptoms such as abdominal pain, nausea, flatulence, vomiting, constipation, changes in bowel habits, acute bowel obstruction,

shortness of breath and chest pain. A characteristic marker of Chilaiditi sign is the observation of air below the diaphragm, with visible haustral folds between the liver and the diaphragmatic surface.

Diagnosis of Chilaiditi syndrome is typically made through imaging studies, such as X-rays or computed tomography (CT) scans. Chilaiditi syndrome is often misdiagnosed in clinical practice due to its rarity.

Differential diagnosis should be done from pneumoperitoneum which normally shows a crescent-shaped gas shadow under the diaphragm without haustral folds, and altering the posture of the patient changes the position of the gas. Ultrasonography is also useful in the differentiation of Chilaiditi syndrome from pneumoperitoneum.

The management of Chilaiditi syndrome includes conservative treatment and surgical intervention. Interventions are not required for asymptomatic patients with Chilaiditi sign, and the treatment is usually conservative. Treatment, such as pain medication and dietary changes, is sufficient. However, in severe cases, surgery may be necessary. Surgical interventions include segmental colon resection, colopexy and hepatopexy.

In conclusion, Chilaiditi syndrome is rare in some countries such as China. It may be asymptomatic or present with acute abdominal pain and other complaints from the gastrointestinal tract. Occasionally, Chilaiditi syndrome is associated with malignancies, and it may be misdiagnosed. Clinicians should be aware of this syndrome and be able to differentiate it from other life-threatening conditions.

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