An unusual cause of nonresponsive chronic dyspnoea

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Clinical

A 38-year-old male, a smoker (28 pack years), was referred to our Institute with history of chronic dyspnoea having poor response to inhaled bronchodilators. Erect chest radiographs were performed and the posteroanterior view is shown (Figure 1).

Figure 1. Chest radiograph posteroanterior view, showing lucency (white arrow) under right hemidiaphragm consistent with loop of colon interposed between right hemidiaphragm and liver. Over left side, air-fluid level in stomach below left hemidiaphragm is distinctly visible (black arrow).

What is the diagnosis?
Answer

The findings of gas under the right hemidiaphragm with haustral markings are suggestive of a colonic loop interposed between right hemidiaphragm and liver—the findings are described as Chilaiditi’s sign. As the patient was also having clinical symptoms, a diagnosis of Chilaiditi syndrome was made.

Discussion

Chilaiditi’s sign was initially described by a Greek radiologist Demetrius Chilaiditi while working in Vienna in 1910. Chilaiditi sign is characterised by the transposition of a loop of large intestine (usually hepatic flexure of transverse colon) in between the right hemidiaphragm and the liver. It is often detected incidentally on a plain abdominal radiograph or chest radiograph. The sign may be seen permanently or intermittently. Chilaiditi sign associated with clinical symptoms like shortness of breath, abdominal pain, and torsion of the bowel is described as Chilaiditi syndrome.

The exact cause for this disorder remains elusive. This is seen in around 0.1–0.25% of chest radiographs; more often in males and almost always in adults though isolated reports in children are present. The association with chronic obstructive pulmonary disease, cirrhosis, ascites etc. has been described. Other factors predisposing to it may include absence of normal suspensory ligaments of the transverse colon, abnormality of the falciform ligament, paralysis or evagination of the right hemidiaphragm, aerophagia and redundant colon, as might be seen with chronic constipation or in bedridden individuals. It can also be associated with relative atrophy of the medial segment of the left lobe of the liver.

This anatomical variant is sometimes mistaken for pneumoperitoneum and may lead to unnecessary surgical interventions. The presence of haustral folds can accurately establish that the air beneath the diaphragm is contained within large bowel. Left lateral decubitus abdominal films may help when confusion is not resolved.

In most instances, the treatment is largely conservative and may comprise of bed-rest, fluid supplementation, nasogastric decompression, enemas, high-fibre diets and stool softeners.

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