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Case report

Incidental finding of Bochdalek hernia in an adult: a case report

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Abstract. A Bochdalek hernia, also known as a congenital diaphragmatic hernia (CDH), is a type of hernia that occurs in infants. The diaphragm, the muscle that separates the chest cavity from the abdominal cavity, is characterized by a hole or gap during birth. This opening allows the abdominal organs, such as the stomach, intestines, or liver, to pass through the thoracic cavity. Here, we report a 56-year-old male patient who came to our hospital because of rectal bleeding, symptoms unrelated to the hernia. We performed a Computed Tomography (CT) scan with contrast enhancement to find the cause of the bleeding and as an incidental finding we diagnosed the hernia: it is very rare to find a silent Bochdalek hernia for more than 50 years. (www.actabiomedica.it)

Key words: Bochdalek hernia, case report, chest, abdomen, CT

Introduction

Bochdalek hernia (BH) is a distinct type of congenital diaphragmatic hernia caused by the incomplete closure of the pleuroperitoneal canal (1). It mostly affects infants (2) manifesting with signs and symptoms of pulmonary insufficiency (3). Adult presentation is rare because the symptoms are appreciable in childhood; usually, patients present unspecific respiratory and gastrointestinal symptoms, making the diagnosis more difficult (2). In contrast, asymptomatic cases have been considered very uncommon and discovered incidentally (3).

Case presentation

We report a case of a 56-year-old male patient who was admitted to the emergency room complaining of rectal bleeding. The patient did not claim any other respiratory or abdominal symptoms. He also denied history of abdominal or thoracic trauma and past surgical treatments.

Clinical examination did not reveal any suspicious signs, in fact on palpation the abdomen was completely normal, and no obstructive gastrointestinal symptoms were observed; laboratory findings were unremarkable, except for microcytic, hypochromic anemia.

A CT scan with contrast enhancement was advised: a triphasic protocol was performed with the administration of 100 mL of Iohexol 350 mg I/ml.

No CT signs of gastro-intestinal bleeding were noticed; instead, a large defect in the posterior wall of the left hemidiagram was detected, with herniation of the stomach, spleen, posterior portions of the pancreas, few small bowel loops, and the transverse-descending colon in the left thoracic cavity. Signs of mass effect were also present with the collapse of the left lung and contralateral dislocation of the mediastinum. (Figures 1-4). The CT findings were consistent with Bochdalek hernia.

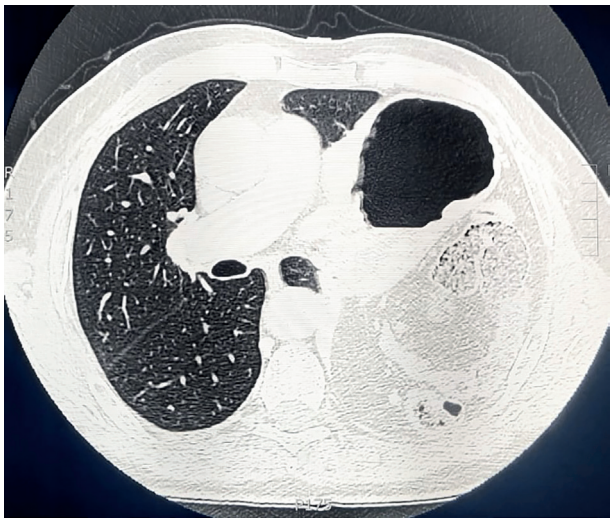

Figure 1. Axial CT image acquisition for pulmonary parenchyma.

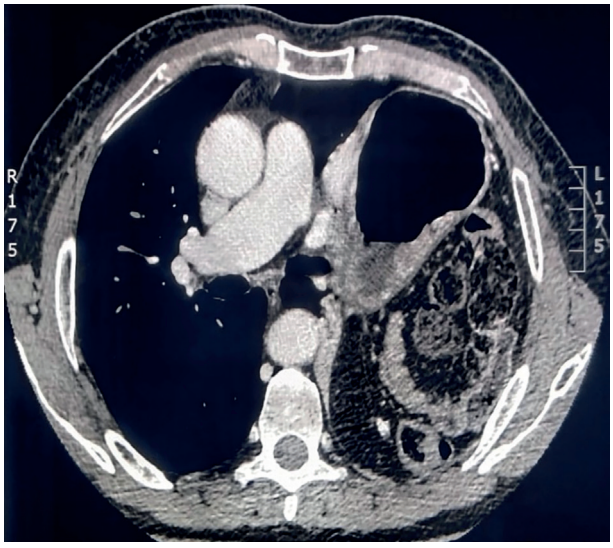

Figure 2. Axial CT image acquisition for soft tissue.

The patient was admitted for investigating the anemia; a surgical treatment for the correction of the hernia was proposed, but the patient declined for the moment.

Discussion

Bochdalek hernia, first described in 1754 by McCauley in an infant, was better characterized by the Czech pathologist Vincenz Alexander Bochdalek (1801–1883), in 1848 (2).

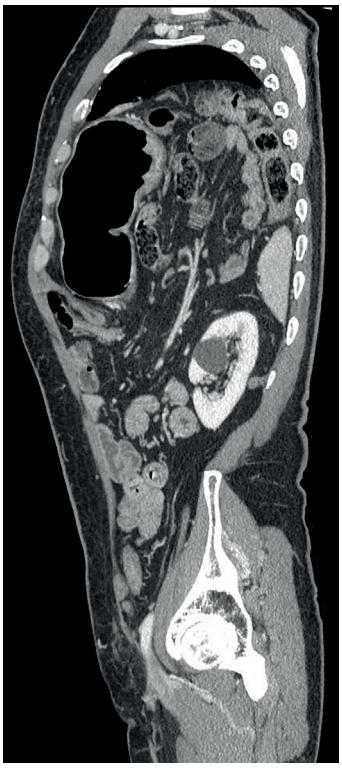

Figure 3. Sagittal CT image acquisition for soft tissue.

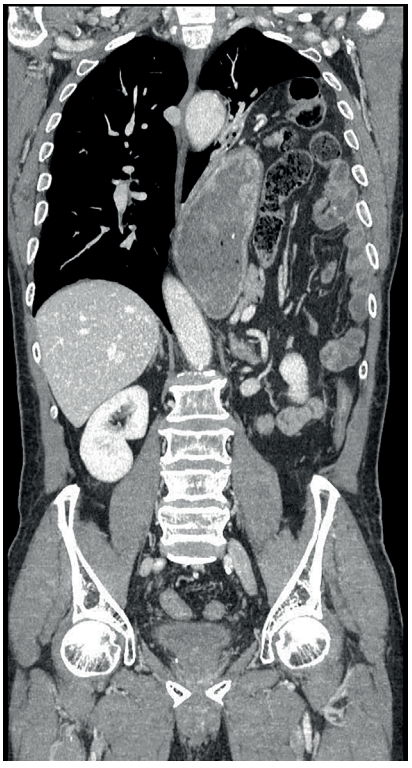

Figure 4. Coronal CT image acquisition for soft tissue.

It is a congenital herniation due to failure of pleuroperitoneal canal closure, which normally occurs from the 8th week of gestation, with subsequent herniation of abdominal viscera into the thorax through the defect in the posterolateral part of the diaphragm (2). In general, the right side closes before the left one (2).

BH is a rare condition that is mostly encountered in infants; it usually affects the left side and manifests with severe respiratory distress symptoms with a high-rate mortality (2).

Other comorbidities, such as thoracic and abdominal malformations or syndromes, can also be present (4). Almost 5% of BH are diagnosed in adults and may present with a variety of symptoms, including thoracic and/or abdominal pain, respiratory distress, and abdominal obstruction (2). A precipitating factor can be found in a quarter of the cases and is related to an increase in intra-abdominal pressure (such as cough, laughing, pregnancy, and physical activity) (2). Incidental BH is more common in females (77%) and affects the right side (68%) (3).

Asymptomatic cases have been described as extremely rare: in their retrospective review, Mullins et al. reported an incidence of 0.17% (3); in contrast, some more recent reviews reported higher incidence, of about 12.7% and 10.5% (5; 6).

The diagnosis may be challenging since symptoms may also be vague and non-specific; in this respect, Imaging plays an important role: chest X-ray may be suspicious if an air meniscus sign is present (7), but CT is superior since can show the diaphragmatic defect with herniation of the abdominal content and also may exclude other possible causes (8). Multiplanar reconstructions (MPR) allow the visualization of even smaller diaphragmatic herniations (9).

Regardless of the clinical presentation, surgical intervention is generally advised to reduce the visceral herniation and correct the defect (4). Recently, interest is raising in minimally invasive techniques with an increasing number of reports that adopted these measures (10).

The wait-and-see approach has also been proposed for patients with no symptoms or no herniation of abdominal viscera (9).

Conclusion

BH is a rare condition that usually involves newborns or adults with respiratory or abdominal symptoms. Asymptomatic cases are extremely rare and usually encountered incidentally. Imaging is important in the diagnosis, especially for symptomatic patients, and to rule out other possible causes.

Ethics Approval and Consent to Partecipate: Written consent was obtained from the patient to publish the case report.

Declarations: Consent to participate and for publication.
Written informed consent for publication was obtained from the patient.

Conflict of Interest: Each author declares that he has no commercial associations (e.r. consultancies, stock ownership, equity interest, patent/licensing arrangement, etc.) that might pose a conflict of interest in connection with the submitted article.

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