Acute Bochdalek hernia in an adult: A case report of a 3D image

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ABSTRACT

A 61-year-old male was found to have a bilateral Bochdalek hernia on routine CT during admission for acute respiratory failure. The chest X-ray showed a left paracardiac mass having a diameter of 6 cm. This mass was initially considered as a mediastinal tumor. However, CT scan showed a bilateral large defect of the posteromedial portion of the diaphragm and mesenteric fat. 3D imaging was also useful for the stereographic perception of Bochdalek hernia. Although Bochdalek hernia is not rare, to our knowledge, this is the first case of Bochdalek hernia continued transverse colon observed by spiral CT 3D imaging.

1. Introduction

In adults, most Bochdalek hernias are asymptomatic, and therefore their detection is usually incidental. We describe here a case of a large asymptomatic diaphragmatic hernia which is confirmed by CT.

2. Case report

A 61-year-old man was admitted in January 2010 to the Emergency Department, Habib Bourguiba University Hospital, with a sudden onset of dyspnea and abdominal pain. He had a medical history of epilepsy, but had no history of any previous thoracoabdominal trauma or surgery. His temperature was 37.8 °C and he was cyanotic.

A chest X-ray revealed a left paracardiac mass about 6 cm × 3 cm in diameters (Figure 1). A posterior mediastinal tumor was suspected. The laboratory data revealed that white cell count was 12.1 × 10³/µL, hemoglobin was 2.7 g/dL, hematocrit was 12.2% and platelet count was 22000. Besides, the kidney and liver functions were normal. An arterial blood gas analysis showed pH 7.43, 32 mmHg arterial partial pressure of carbon dioxide and 143 mmHg arterial partial pressure of oxygen, while he breathed 6 L/min O₂ through a face mask.

Bone marrow examination showed an erythroblastic reaction about 60% without malignancy. Ciprofloxacin and cefotaxime were administered. After 3 days, clinical symptoms and
haemogramme abnormalities were resolved by red cell transfusion.

CT was performed and showed bilateral multifocal consolidation and bilateral pleural effusion, a round mass with a smooth outline and a homogenous low density area indicative of fatty tissues and bilateral discontinuity of the diaphragmatic musculature continued a transverse colon (Figure 2). The 3D reconstruction confirmed these findings and suggested the presence of bilateral Bochdalek hernias (Figure 3).

After 7 days, the patient was weaned from oxygen and was discharged. He was convened 10 days later to repair his diaphragmatic defect but he refused.

3. Discussion

Congenital hernias resulting from a developmental failure of posterolateral diaphragmatic foramina to fuse properly were first described by Victor Alexander Bochdalek in 1848[1].

It is more common in infants (90%) with an incidence of 1/2500 live births. In adults, most Bochdalek hernias are asymptomatic, and therefore their detection is usually incidental. The real prevalence in the population is unknown, with an estimated range between 0.17% and 12.7%[2,3].

The prevalence of left- and right-sided Bochdalek hernias is a controversial topic. Left-sided predominance has been reported to have prevalence between 70% and 90% in most reports[2,4,5]. However, Temizöz et al. reported the percentages of Bochdalek hernias as 42.2% left-sided, 37.4% right-sided and 20.4% bilateral, with no statistically significant correlation of location and prevalence[6].

The majority of these small Bochdalek hernias in adults are composed of retroperitoneal fat[6,7]. Besides in large hernias, the liver and kidney are predominantly in right-sided and enteric tract, and spleen, liver, pancreas, kidney, or fat in left-sided.

Colon containing hernias are rare and usually occur through left-sided defects[3,8,9].

It is rarely diagnosed in adult patients with pain, pulmonary, digestive clinical signs being the most common symptoms[10,11]. To our knowledge, there are only five published cases of Bochdalek hernia in the adult population causing respiratory failure[12].

The principal management of Bochdalek hernias includes replacing the abdominal organs and repairing the defect. However, the best method to accomplish this is still controversial[13].

Many cases were described in literature. Most of case reports described a diaphragmatic hernia in one side[6,7,9,12]. The case reported here is interesting because the patient has a large bilateral diaphragmatic hernia which was confirmed by CT and 3D reconstructions to have definite protrusion of transverse colon through both sides of the hernias.

Conflict of interest statement

The authors report no conflict of interest.

References