Pulmonary sequestration in a healthy teenage girl

Séquestration pulmonaire chez une adolescente

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The present brief case report highlights the importance of considering pulmonary sequestration (PS) in front of any persistent pulmonary opacity despite appropriate antibiotic treatment, particularly in young people.

Case report

A 14-year-old North-African teenage girl, without any past medical history, was referred from the pediatric department for a left lower lobe pneumonia treatment. She complained of an acute chest pain, productive cough, and fever. On admission to the pneumology department, physical examination showed high fever (39°C) and a slight decrease of breathing sounds in the left lower lung field. Laboratory findings showed white blood cell count at 12600/mm^3 and C-Reactive Protein at 152 mg/dL. Arterial blood gas analysis showed pH=7.34, PCO2=40.2mmHg, PO2= 77 mmHg, HCO3= 22 mEq/L and SaO2= 94.5%. Sputum smear was negative for acid-fast bacilli. The Chest radiograph showed a retrocardiac inhomogeneous opacity containing an air-fluid level (Figure 1A). Pulmonary endoscopy was normal. The treatment of acute lung abscess by antibiotic drugs was initiated with significant clinical improvement. However, no improvement on chest-X ray was seen with the persistence of the retro-cardiac opacity on the chest-X ray at three weeks treatment (Figure 1B). A complicated hydatid cyst was suspected. She had no history of living or visiting an endemic area and her hydatid serology was negative. Contrast thoracic Computed Tomography (CT) showed a smooth bordered and low attenuated consolidation, measuring 56x49x65 mm, in the posterior and lateral basal segment of the left lower lobe with areas of cavitation, cysts, and atelectasis. This consolidation was supplied by an aberrant systemic artery arising from the celiac trunk (Figure 2). On the basis of these findings, intralobar pulmonary sequestration (PS) was diagnosed. The patient was referred to cardiothoracic surgery and underwent a left lower lobe lung resection with an excellent result and satisfactory outcome.

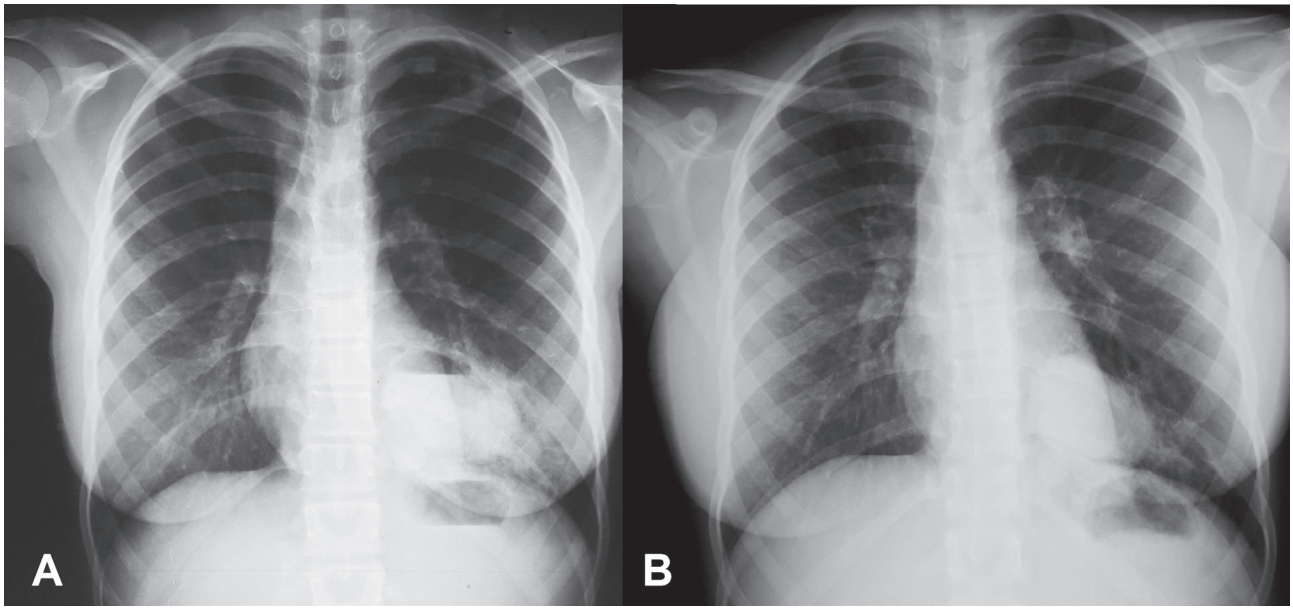

Figure 1A: Chest X-ray shows pulmonary consolidation in the left lower lobe with an air-fluid level.
Figure 1B: Chest X-ray shows persistent retro-cardiac opacity.

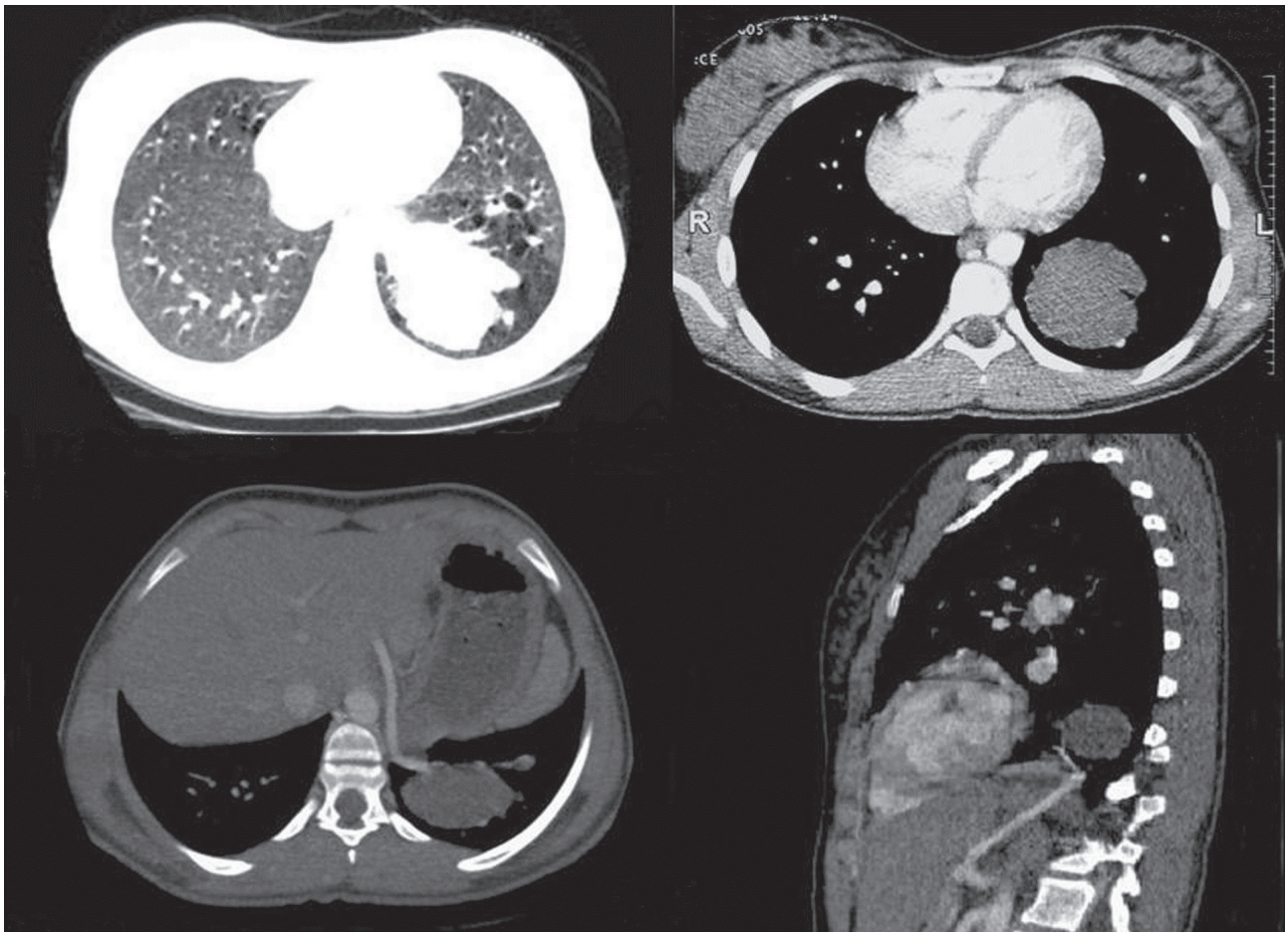

Figure 2 : CT Angiogram image showing a solid mass in the left lower lobe supplied by an aberrant systemic artery arising from the celiac trunk

Commentaires

The differential diagnosis of a pulmonary opacity with an air-fluid level in an immunocompetent child is various and includes infections (abscess and tuberculosis), hydatic cyst and malformation such as PS. Primary or metastatic pulmonary tumors can mimic the imaging appearance of PS in adult (1).

PS is a rare congenital malformation of the lower respiratory tract, classified anatomically into intralobar and extralobar types. Intralobar sequestration is surrounded by normal lung tissue and visceral pleura with venous drainage into the pulmonary veins. It's found in childhood or adolescence with recurrent respiratory infection (2,3).

The diagnosis of PS is initially suspected on chest X-rays. The usual imaging features are solitary nodule or mass, cystic lesion, lung consolidation and air-fluid level (1). Currently, non-invasive imaging techniques such as magnetic resonance angiography (MRA) or computed tomography angiography (CTA) are being used for the diagnosis and the preoperative evaluation of PS (1).

Surgical excision is the treatment of choice of PS, particularly in symptomatic patients to avoid the risk of recurrent infection and hemoptysis (2,3).

References

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