

A rare case of pulmonary sequestration with pulmonary drainage into the left renal vein



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Abstract

Extralobar pulmonary sequestration (ELS) is a nonfunctional lung tissue that has no relationship to the tracheobronchial tree, abnormal arterial supply from the aorta, and venous drainage into the systemic vein. We provide a very unusual instance of ELS in a newborn with venous drainage into the left renal vein, emphasizing the need to include ELS in the differential diagnosis of congenital lung lesions and meticulous verification of arterial supply and venous drainage before surgical resection.

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Introduction

Pulmonary sequestration is abnormal lung tissue that has no relationship with the bronchial tree or pulmonary arteries. There are two types of sequestration; extralobar pulmonary sequestration (ELS) with its pleural investment and intralobar pulmonary sequestration (ILS) without a pleural coat. Both kinds get systemic arterial flow from the aorta. However, ELS drains into systemic veins (mostly azygos and hemiazygos), whereas ILS drains into pulmonary veins (1-3). Patients with ILS typically have recurring infections, but those with ELS may be asymptomatic or have respiratory discomfort. A contrast-enhanced computed tomography (CT) scan is required to determine vascular supply and venous drainage (4). We describe a very unusual instance of ELS, including systemic venous draining into the left renal vein.

Case Presentation

A 9-month-old girl with an aberrant echogenic left lower lobe lesion on prenatal ultrasonography was sent to our center to rule out sequestration, and a contrast-enhanced CT scan was ordered for further investigation.

A CT scan reveals increased aberrant lung tissue in the left lower lobe (Figure 1), which might easily be misconstrued as collapsed lung tissue. A more detailed investigation revealed a branch of the celiac artery to supply this abnormal lung tissue, and the

Key point

Extralobar pulmonary sequestration (ELS) is a congenital lung disease that requires careful determination of arterial supply and venous drainage before treatment planning, as depicted in this rare case.

venous drainage was in the left renal vein (Figures 2-4).

Discussion

Extralobar sequestration is an abnormal lung tissue that is not connected to the bronchial tree and receives blood flow directly from the aorta, as well as rarely from the celiac, intercostal, or subclavian arteries. The venous drainage is commonly through the azygos or hemiazygos vein.

ELS is commonly detected in infancy and may appear with respiratory distress. However, it can be discovered during a prenatal examination without any clinical symptoms.

The diagnosis of ELS can easily be ignored on a non-contrast CT scan; hence, a contrast-enhanced CT scan is needed to confirm the diagnosis.

In this case, we described an unusual example of ELS with venous drainage into the left renal vein and arterial supply from the celiac artery.

The therapy of ELS is controversial (5), however surgical excision or radiological intervention is commonly considered for

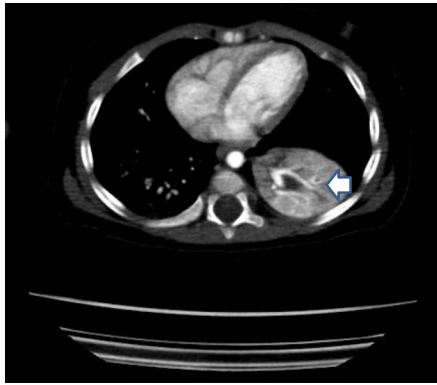


Figure 1. An axial CT scan of the thorax shows abnormal lung tissue in the left lower lobe (arrow).

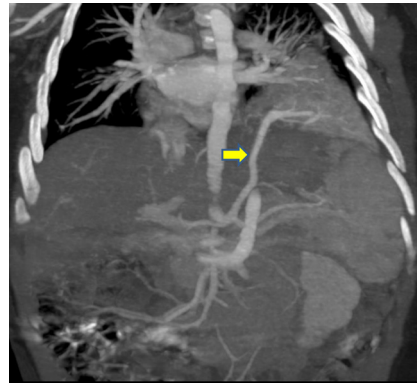


Figure 2. Coronal maximal intensity projection shows the celiac artery to supply extralobar sequestration (arrow).



Figure 3. Coronal oblique maximal intensity projection shows the venous drainage (small arrow) into the left renal vein (large arrow).



Figure 4. The volume-rendered image shows the arterial supply (short arrow) from the celiac artery and venous drainage (large arrow) in the left renal vein.

intrathoracic ELS. Therefore, precise identification of arterial supply and venous drainage is critical for treatment planning (6,7).

Conclusion

Extralobar pulmonary sequestration should be included in the diagnosis of congenital lung illness, and an accurate evaluation of arterial supply and venous drainage is crucial for treatment planning.

Conflicts of interest

The author declares that he has no competing interests.

Ethical issues

This study was conducted in accordance with the World Medical Association Declaration of Helsinki. The patient has provided written informed consent for the publication of this case report. Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the author.

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