Intralobar Pulmonary Sequestration: A Case Report

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Abstract

A 20 year-old girl was admitted to our clinic in June, 1999 with a five-year history of cough and sputum production. Chest x-ray revealed nonhomogenous infiltrates in left lower paracardiac region. Bacteriological and biochemical tests and bronchoscopic examination were normal. High resolution computed tomography was performed which evidently indicated pulmonary sequestration findings and the diagnosis of pulmonary sequestration was confirmed by aortography. After thoracotomy and left lower lobectomy, the patient's follow up was without complaints.

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Case Report

A 20 year old girl was admitted to our clinic in June 1999 with a five year history of cough and sputum production. She was a non-smoker. Physical examination revealed rales over the lower part of the left hemithorax. Results of routine laboratory tests were normal except for raised erythrocyte sedimentation rate (90 mm/hr). Acid Resistant Bacilli were searched in sputum three times and found negative. Chest x-ray revealed double-contour of the left cardiac border and non-homogenous infiltrates on the left lower zone. On the lateral view, nonhomogenous density was seen posteriorly over the left lung base (Figure 1-2).

HRCT was performed to the patient to visualize the parenchyma of the lung, and it revealed bronhiectasis in the right lower posterobasal and laterobasal segments, also atelectasis was observed with sequestration in left lower anterobasal and posteromediobasal segments (Figure3). The HRCT findings and the history of recurrent pulmonary infections suggested a possibility of pulmonary anomaly. Bronchoscopically, endobronchial system was normal. An aortography was performed (Figure 4).

This descending aortography showed the left lower anterobasal and posteromediobasal segments were perfused via the hypertrophic left inferior phrenic artery from the coeliac trunk. The venous phase (not shown) releaved drainage into the

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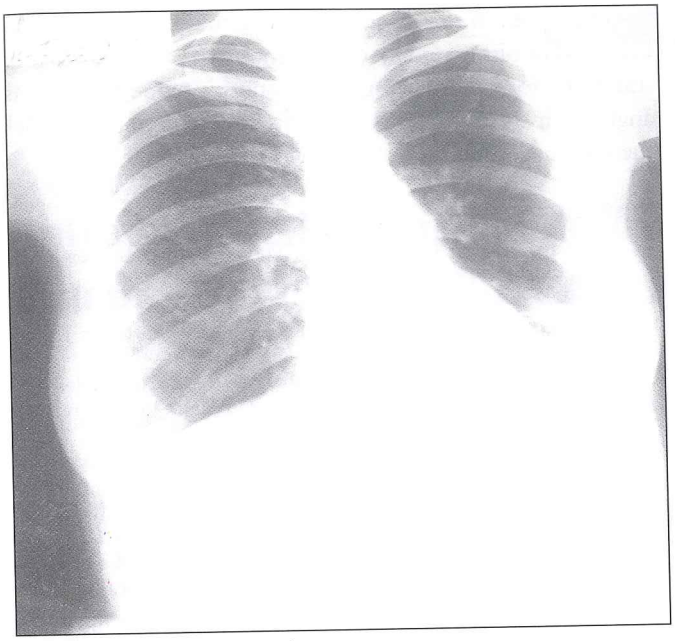

Figure 1. *Chest x-ray PA view.Double-contour in the left cardiac border.*

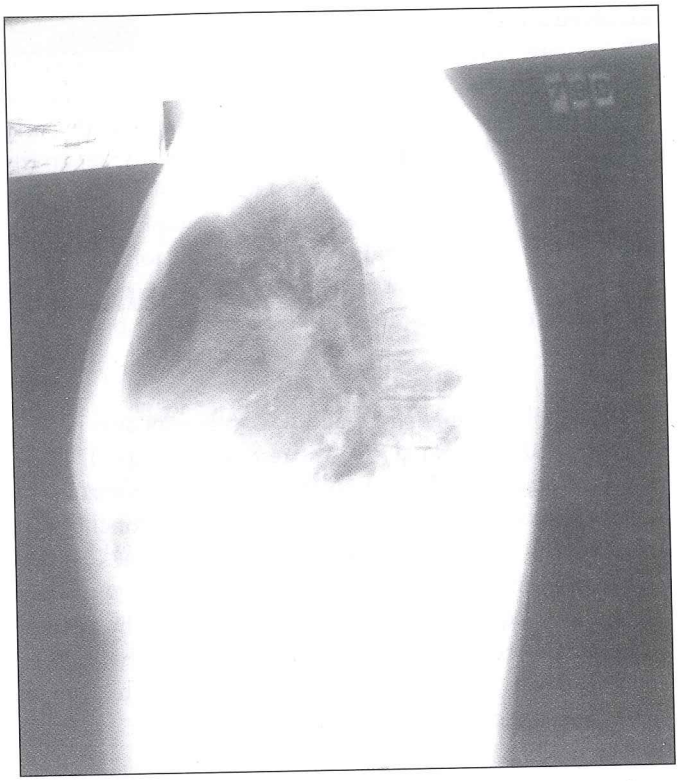

Figure 2. *Lateral view of the lesion.*

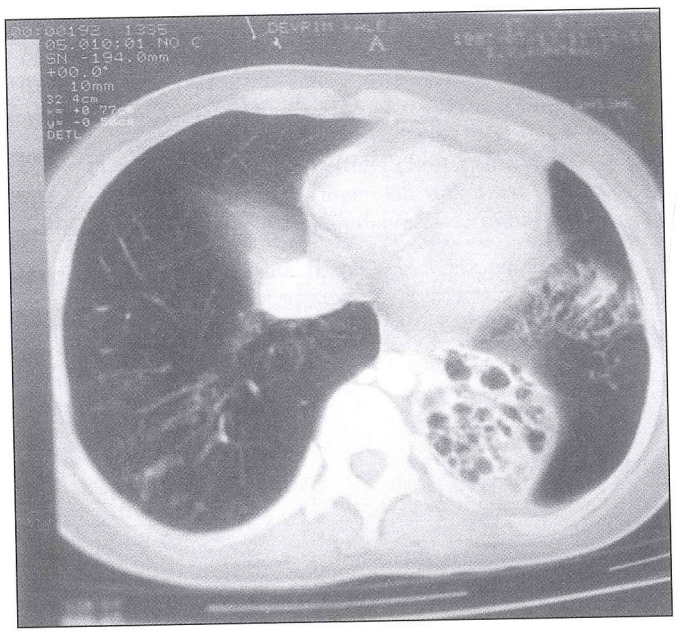

Figure 3. *High-resolution computarized tomography.*

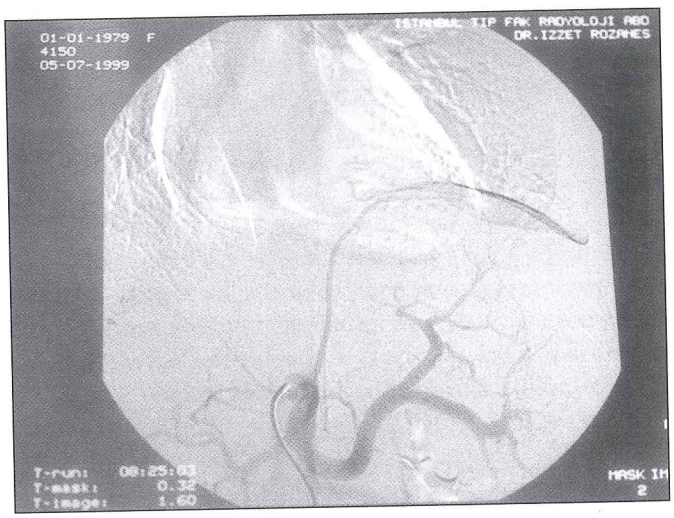

Figure 4. *Aortography.*

pulmonary vein. This abnormal vascular supply indicated pulmonary sequestration. In September 1999 left thoracotomy and lower lobectomy was performed. On pathological examination of dissected left lower lobe and lingula; bronchitis, bronchiolitis, chronic interstitial pneumonitis and diffuse fibrosis were detected.

Discussion

Pulmonary sequestration, as first described by Rektorzik in 1861, a malformation comprised of dysplastic lung tissue with no normal communication with the thracheobronchial tree and with an anomalous systemic arterial supply (1). The etiology of this defect is thought to be congenital. There are two types of pulmonary sequestration: intralobar and extralobar (2).

Intralobar Pulmonary sequestration is three to six times more common than the extralobar type (3). In ıntralobar pulmonary sequestration, the pulmonary tissue is isolated from the normal lung tissue; however, the pleural covering remains contiguous with that of lung. The left lung is

involved in 65% of the cases suggestion as in our case. There are rarely associated anomalies or foregut communications (4). But we did not find any associated anomalies. The symptoms typically occur during early childhood with the patient presenting with recurrent pneumonia. The diagnosis is made in 50% of intralobar pulmonary sequestration cases after the age of 20 (5). The incidence of intralobar pulmonary sequestration is equal in males and females. The arterial supply is via a systemic artery and the venous drainage is through the pulmonary veins.

The extralobar pulmonary sequestration has its own pleural covering and is seperated from the rest of the lung (5). There may be foregut communication and associated anomalies are quite common (cardiovascular malformation, bronchogenic cyst, pectus excavatum, diaphragmatic hernia) (4). In contrast to intralobar pulmonary sequestration, extralobar pulmonary sequestration is usually diagnosed in infancy secondary to respiratory distress or failure to thrive. The arterial supply is from a systemic artery and the venous drainage is typically via the systemic veins.

In conclusion, in the diagnosis of pulmonary sequestration, a CT, MRI or ultrasound may be diagnostic (6-8). But, the gold standart for identifying pulmonary sequestration is angiography. Angiography confirms the anatomy, identifies the systemic supply, and shows the venous drainage.

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