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CASE REPORT

Pulmonary Sequestration: Case Report

AQRABAWI H E

ABSTRACT

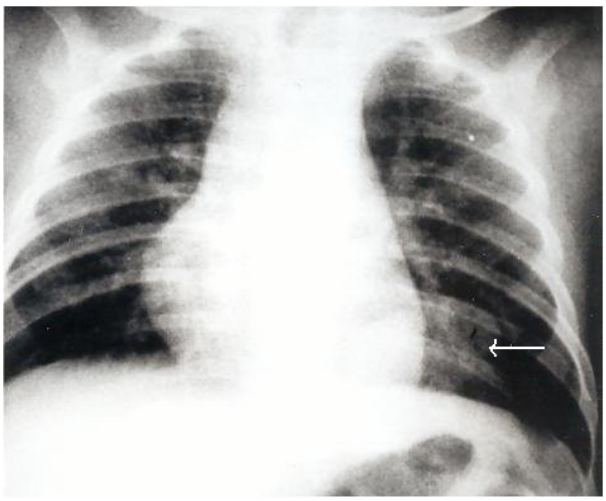
Pulmonary sequestration is a rare congenital anomaly of the lung that has variable presentation. It can remain asymptomatic up to early adulthood. This condition is suspected when a shadow persists on a chest radiograph. Confirmatory diagnosis requires angiography or computed tomography (CT) angiogram. Treatment of choice remains surgical removal; however, embolisation of the feeder artery presents a recent advance. We present a case of a 4-month-old infant, with pulmonary sequestration found on a radiograph done incidentally.

Key words: Bronchopulmory sequestration, pulmonary, sequestration, infant

Introduction

Pulmonary sequestration is a rare congenital abnormality, which is characterised by a mass of nonfunctioning, embryonic, cystic pulmonary tissue that receives its blood supply from the systemic circulation [1]. Both *intralobar* and *extralobar* sequestrations arise through the same pathoembryologic mechanism as a remnant of a diverticular outgrowth of the foregut. Gastric or pancreatic tissue may be found within the sequestration [2]. The presentation is variable, ranging from no symptoms to hemoptysis. Herein, we present a case of pulmonary sequestration in an infant with minimal symptoms.

A 4-month-old male infant, who was born at full term via normal vaginal delivery, following an uneventful pregnancy to a healthy Jordanian mother, was brought to emergency room with complaints of excessive crying and fever. The infant was well till a day prior to presentation. Physical examination was unremarkable, except mild nasal congestion and low-grade fever. A chest radiograph was ordered by a junior resident, which revealed a left lower lobe opaque shadow [Table/Fig 1].



[Table/Fig 1] Chest radiograph with opacity in left lower zone.

The infant was treated with presumptive diagnosis of pneumonia. Complete resolution of clinical features was noticed. Follow-up chest radiograph, a

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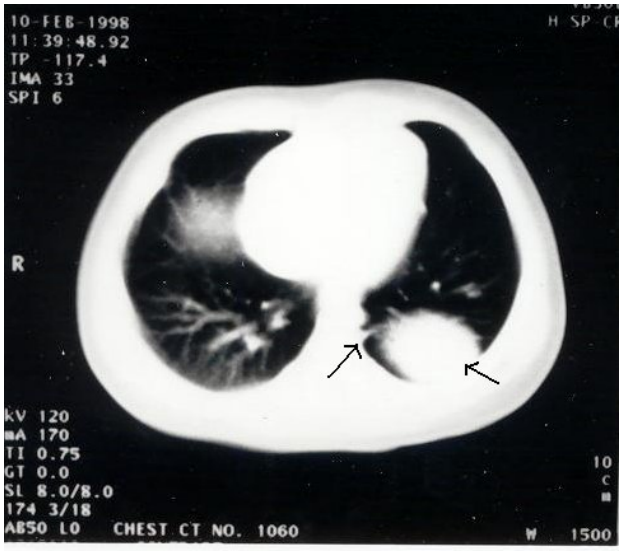
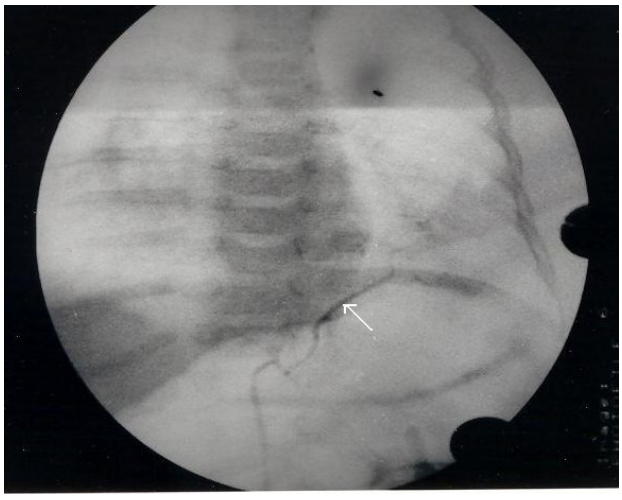
few weeks later, showed persistence of the left lower lobe shadow. Hence, a chest CT scan was ordered, which delineated a separate mass lesion in the left lower lobe with an independent blood supply [Table/Fig 2].



[Table/Fig 2] Chest CT scan: Trans-thoracic section showing pulmonary sequestration with independent blood supply from aorta.

Abdominal aortography confirmed the systemic origin of the blood supply directly from aorta via an aberrant blood vessel [Table/Fig 3]. Surgical excision was undertaken at the age of 6 months with good outcome.



[Table/Fig 3] Aortogram showing infra-diaphragmatic aberrant arterial vessel supplying the pulmonary sequestration mass.

Discussion

Pulmonary sequestration represents a segment of pulmonary tissue with no developmental connection to the tracheobronchial tree or pulmonary arterial circulation. Sequestrations are subdivided according to their relationship with the pleura into

1. intralobar type, and
2. extralobar type.

Intralobar sequestrations have no separate pleural envelope, whereas the *extralobar* sequestrations are completely enclosed by pleura and lie outside the boundary formed by the pleural layer that surrounds the rest of the lung. The intralobar variety is much more common [3]. They are part of the spectrum of bronchopulmonary foregut malformations, and it is therefore not surprising that both varieties occasionally communicate with the gastrointestinal tract. The arterial supply is usually a branch of the descending aorta, arising above or below the diaphragm. In this case, it was below the diaphragm. The venous drainage can be either to the pulmonary or to the systemic venous circulation. Intralobar sequestrations usually drain into pulmonary veins; extralobar sequestrations usually drain into the azygos system [4].

Clinically, pulmonary sequestration is latent until infection leads to symptoms. Recurrent pneumonitis of the sequestrated segment, purulent sputum and haemoptysis are the prevailing symptoms [5]. Pulmonary sequestration can be present clinically at all ages, but most lesions tend to develop these infective complications at school age and adolescence. However, symptoms may also occur in infancy and preschool age group. A symptomatic adult has also been described [6]. Many a times, it is discovered incidentally on a chest radiograph taken for another reason, as in this case. About two-thirds of all pulmonary sequestrations are found in the posterior basal segment of the left lower lobe [7]. On radiograph, the initial impression is usually one of pneumonia, though the lesion may appear as air- or fluid-filled cysts, single or multiple. Till recently, aortography, with selective angiography, was usually necessary to diagnose sequestration and demonstrate its blood supply. CT scanning and recently spiral CT angiography offer less invasive means of demonstrating the anomalous vascular supply [8]. Surgical excision is usually curative; it should be conservative, sparing the normal lung parenchyma [9]. Some authors advocate embolisation of the aberrant systemic artery at the

time of initial catheterisation, which may result in complete radiological resolution of mass [10],[11].

Conflict of Interest: none declared.

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