Case Report

A Case of Pulmonary Hamartoma Mimicking Pulmonary Tuberculoma

Harveen Kaur, Dilbag Singh, Naveen Pandhi

Department of Pulmonary Medicine, Government Medical College, Amritsar, Punjab, India

Abstract

Pulmonary hamartomas are rare, benign lung tumors. They are usually asymptomatic, and are present as solitary or multiple, round nodules. Here, we report an unusual presentation of pulmonary hamartoma in a 60-year-old male, mimicking pulmonary tuberculoma. Histopathological examination subsequent to wedge resection confirmed the diagnosis of pulmonary hamartoma.

Keywords: Chest X-ray, contrast-enhanced computed tomography chest, histopathological evaluation, pulmonary hamartoma, tuberculoma

Introduction

Pulmonary hamartomas are the most common benign tumor of the lung.[1] They are found more commonly in males, around the fifth decade, and have an incidence of 0.025%–0.32%.[2] Pulmonary hamartomas can be parenchymal or endobronchial.

These are mostly asymptomatic and present as typical coin lesions with "popcorn-like" calcification on radiological examination. Computed tomography (CT) scan is a sensitive modality for detection of calcification, as well as fat in pulmonary lesions. Histopathological examination in these cases usually reveals an abnormal mixture of mesenchymal and fibromyxoid tissue.[3]

No treatment is needed for asymptomatic hamartomas. In symptomatic cases, the treatment is primarily surgical and comprises wedge resection or enucleation.

The presented case highlights the unusual presentation of pulmonary hamartoma, as a mimicker of pulmonary tuberculoma.

Case Report

A 60-year-old male presented with chief complaints of shortness of breath, chest pain, cough with expectoration, and recurrent hemoptysis.

The initial laboratory evaluation revealed the blood and biochemical parameters within the normal range. Based on sputum analysis for *Mycobacterium tuberculosis*, he was subsequently started on antituberculous therapy for pulmonary tuberculosis. One month after the treatment initiation, there occurred progressive worsening of symptoms.

Chest X-ray revealed a mass lesion in the left lower zone of the lung [Figure 1]. Contrast-enhanced CT chest revealed a well-defined opacity of 6.8 cm × 6.0 cm × 6.7 cm size, involving the apical segment of the left lower lobe, showing small eccentric specks of calcification with minimal enhancement, raising the suspicion of pulmonary hamartoma [Figure 2].

Subsequently, surgical intervention (wedge resection) was performed, and a circumscribed gray-white nodule measuring 5.4 cm × 4.3 cm showing areas of calcification was obtained. Microscopic evaluation of histopathological specimen confirmed the lung hamartoma. There were lobules with cartilage components, both mature and immature, mixed with areas of myxomatous change with interspersed slit-like spaces [Figure 3]. The patient improved eventually and was followed up at regular intervals.

Address for correspondence: Dr. Harveen Kaur,
Department of Pulmonary Medicine, Government Medical College,
Amritsar, Punjab, India.
E-mail: hk_94basra@ymail.com

Access this article online

Quick Response Code:

Website: www.ijrc.in

DOI: 10.4103/ijrc.ijrc_106_21

How to cite this article: Kaur H, Singh D, Pandhi N. A case of pulmonary hamartoma mimicking pulmonary tuberculoma. Indian J Respir Care 2022;11:74-6.

Received: 30-07-2021 **Revised:** 23-11-2021
Accepted: 25-11-2021 **Published:** 04-01-2022

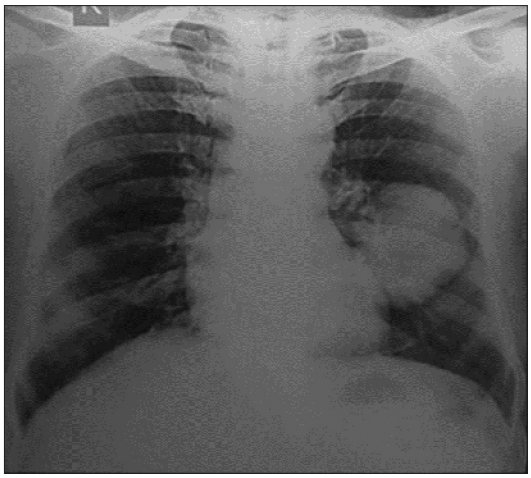

Figure 1: Chest X-ray PA view showing mass lesion in the left lower lobe of the lung

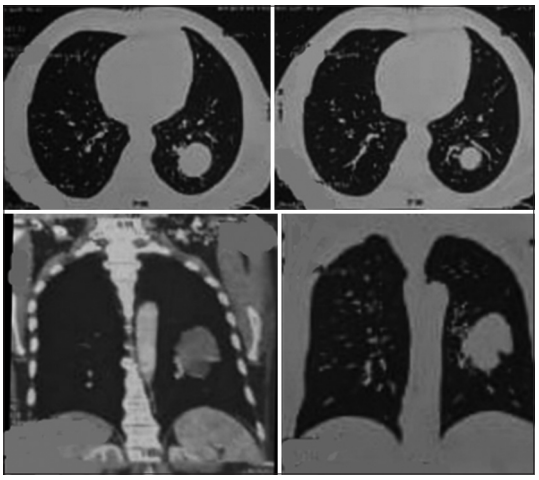

Figure 2: Contrast-enhanced computed tomography chest revealed a well-defined opacity measuring 6.8 cm × 6.0 cm × 6.7 cm in the apical segment of the left lower lobe showing peripheral areas of calcification with minimal enhancement

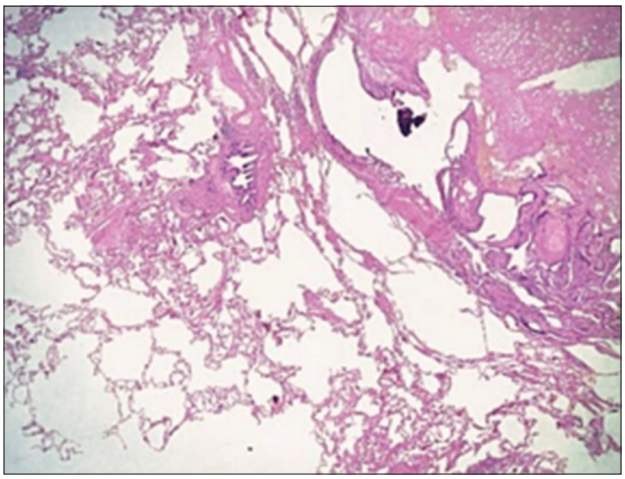

Figure 3: Microbiologic evaluation of histopathological specimen showed lobules comprising cartilage with few slit-like spaces, along with areas of immature myxomatous tissue

Discussion

Albrecht was the first to describe pulmonary hamartoma in 1904.[4] These are rare, benign tumor-like lesions made of an abnormal mixture of epithelial and mesenchymal elements such as cartilage, adipose tissue, bone, and smooth muscle bundles.[2,4] In pulmonary hamartomas, there has been reported abnormal karyotype, with recombination between 6p21 and 14q24 chromosome bands, raising the suspicion of neoplastic potential.[5]

Pulmonary hamartomas can be parenchymal or endobronchial. The endobronchial hamartomas are usually symptomatic, giving rise to hemoptysis and central airway obstruction. Pulmonary hamartomas are frequently reported in the fifth to sixth decade, with a male predilection.

Radiologically, these constitute 7%–14% of coin lesions of lungs,[6] and are most often found in the periphery and rarely near the hilum, the "popcorn calcification," being present in 10%–30% of cases. The detection of fat or calcification in a well-circumscribed peripheral lung tumor makes the diagnosis of pulmonary hamartoma definite. On CT chest, these well-defined lesions show multiple intralesional hyperdense areas alternating with areas of calcifications and fat.

The differential diagnosis includes primary central carcinoid of the lung, primary bronchogenic carcinoma, and metastases.[7] Although hamartomas are slow-growing tumors, they can rarely undergo rapid growth, making the differentiation from bronchogenic carcinoma difficult. There have been reported cases of unusual presentation in the form of rapid growth, cases with interferon-gamma release assay for tuberculosis positive, making the diagnosis difficult in endemic regions.

The most important treatment measure is conservative surgery: wedge resection of lesions situated in periphery and sleeve resection for endobronchial lesions.

Conclusion

Pulmonary hamartomas are difficult to diagnose in the tuberculosis endemic regions. It is of paramount importance to initiate timely intervention following the diagnosis in both entities, since untreated tuberculomas can progress to extensive pulmonary tuberculosis and hamartomas could grow rapidly and end up into malignancy.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Umashankar T, Devadas AK, Ravichandra G, Yaranal PJ. Pulmonary hamartoma: Cytological study of a case and literature review. J Cytol 2012;29:261-3.
2. Raina N, Kaushal V, Pathania R, Rana A. Pulmonary hamartoma: Case report and brief review of literature. Clin Cancer Investig J 2016;5:240-2.
3. Saadi MM, Barakeh DH, Husain S, Hajjar WM. Large multicystic pulmonary chondroid hamartoma in a child presenting as pneumothorax. Saudi Med J 2015;36:487-9.
4. Jacob S, Mohapatra D, Verghese M. Massive chondroid hamartoma of the lung clinically masquerading as bronchogenic carcinoma. Indian J Pathol Microbiol 2008;51:61-2.
5. Johansson M, Dietrich C, Mandahl N, Hambraeus G, Johansson L, Clausen PP, *et al.* Recombinations of chromosomal bands 6p21 and 14q24 characterise pulmonary hamartomas. Br J Cancer 1993;67:1236-41.
6. Wiatrowska BA, Yazdi HM, Matzinger FR, MacDonald LL. Fine needle aspiration biopsy of pulmonary hamartomas. Radiologic, cytologic and immunocytochemical study of 15 cases. Acta Cytol 1995;39:1167-74.
7. Grewal RG, Austin JH. CT demonstration of calcification in carcinoma of the lung. J Comput Assist Tomogr 1994;18:867-71.