



Case Report

A Rare Cause Of Lung Collapse : Endobronchial Hamartoma

Dr Arppana Thomas¹, Dr Krishna M S², Dr Sundeep S³, Dr Sajith S L⁴, Dr Praseeda⁵, Dr Chandni Thomas⁶

¹PG resident, Department of General Medicine, Travancore Medical College, Kollam, Kerala, India.

²PG resident, Department of Pulmonology, Travancore Medical College, Kollam, Kerala, India.

³Professor, Department of General Medicine, Travancore Medical College, Kollam, Kerala, India.

⁴Associate Professor, Department of Pulmonology, Travancore Medical College, Kollam, Kerala, India.

⁵Professor and Head, Department of Pathology, Travancore Medical College, Kollam, Kerala, India.

⁶Senior resident, Department of Pathology, Travancore Medical College, Kollam, Kerala, India.

OPEN ACCESS

ABSTRACT

Corresponding Author:

Dr Arppana Thomas

Post Graduate Student,
Department of General Medicine
Travancore Medical College,
Kollam, Kerala, India

Received: 17-09-2025

Accepted: 08-10-2025

Available online: 24-10-2025

Copyright © International Journal of
Medical and Pharmaceutical Research

Pulmonary hamartoma is the most common benign pulmonary tumours that are composed of varying amounts of at least two mesenchymal tissues like cartilage, fat, bone, connective tissue, smooth muscle along with entrapped respiratory epithelium. Though pulmonary hamartomas are peripheral and asymptomatic, a rare subset known as endobronchial hamartomas arise within the bronchial tree and may cause airway obstruction, lobar collapse, or recurrent pulmonary infections. We report a case of 58-year-old chronic smoker who presented with persistent cough, low-grade fever, pleuritic chest pain, breathlessness, and hemoptysis. Clinical examination and imaging revealed signs of left lower lobe collapse and consolidation. Bronchoscopy evaluation identified a pedunculated endobronchial mass, and histopathological examination confirmed the diagnosis of pulmonary hamartoma. This case report highlights the need for early recognition and intervention in symptomatic endobronchial lesions to prevent long term pulmonary sequelae.

Keywords: Pulmonary hamartoma, Endobronchial mass, Airway obstruction, Lobar collapse, Benign lung tumor.

INTRODUCTION

Pulmonary hamartomas are the most frequently encountered benign neoplasms of the lung [1]. These tumors are typically composed of mixture of mesenchymal components such as cartilage, adipose tissue, smooth muscle, and fibrous tissue along with entrapped respiratory epithelium [2]. They are usually peripheral in location and discovered incidentally on imaging studies [3]. But hamartomas presenting as endobronchial lesion is a rare presentation, and when these tumors arise endobronchially, they present with symptoms due to bronchial obstruction, which can lead to lobar collapse, recurrent infections or obstructive pneumonia [4]. The diagnosis of endobronchial hamartoma is often delayed due to similarity in clinical presentation with common conditions such as chronic bronchitis, tuberculosis, bronchogenic carcinoma, particularly in patients with a history of smoking [5]. Imaging findings may be non-specific and definitive diagnosis requires bronchoscopy evaluation with histopathological confirmation [6]. Surgical resection remains the treatment of choice in symptomatic or complicated cases [7]. In this case report, we present a case of endobronchial pulmonary hamartoma in a chronic smoker presenting with lower lobe collapse and features similar to pneumonia.

CASE REPORT

A 58-year-old male manual labourer with no comorbidities, presented with complaints of cough for two month duration which was productive since 1 week and a one-month history of low-grade, intermittent fever. The cough was initially dry but became productive with yellowish sputum, he also developed breathlessness which was progressive, followed by blood-tinged sputum. He also had left-sided pleuritic chest pain for two days. There was no history of weight loss, reduced appetite, abdominal discomfort, or recent travel. He is chronic smoker with a pack year of 30. There was no significant past medical, surgical, or family history.

CLINICAL EXAMINATION

On examination, the patient was conscious and oriented, moderately built and nourished. Tobacco stains were present on the teeth. His vital signs were stable: pulse rate 86/min, blood pressure 130/70 mm Hg, respiratory rate 21/min, and SpO₂ 96% on 3 L/min oxygen via nasal prongs. He was afebrile at the time of examination. Respiratory system examination revealed a tracheal shift to the left side. Vocal fremitus and vocal resonance decreased over the left mammary, infraclavicular, interscapular, and infra-axillary areas. Air entry was markedly reduced in these areas. Cardiovascular, gastrointestinal, and neurological system examinations were within normal limits.

INVESTIGATIONS

Initial investigations showed neutrophilic predominant leucocytosis with raised inflammatory markers. Chest radiography showed tracheal and mediastinal shift toward the left, with a homogenous opacity in the left lower zone suggestive of consolidation. Sputum studies including acid-fast bacilli, gram staining were negative, and no bacterial growth was observed on culture. There was obliteration of the left costophrenic angle, hyperinflation of the right lung, and crowding of the left lower ribs indicative of lobar collapse (Figure 1). A contrast-enhanced computed tomography (CECT) scan of the thorax, revealed homogenous enhancing collapse consolidation involving all segments of left lower lobe, suggestive of pneumonia, volume loss of left hemithorax with mediastinal shift to left (Figure 2,3). Flexible bronchoscopy revealed a congested, pale brown, sessile polypoidal mass partially obstructing the bronchial lumen (Figure 4,5) which was resected via bronchoscopy. Histopathological evaluation lesion revealed fibrocollagenous tissue with extensive hemorrhagic areas and nodular aggregates of mature hyaline cartilage embedded in a myxoid stroma, adipose tissue vacuolations and mesenchymal elements, consistent with the diagnosis of pulmonary hamartoma (Figure 6,7). No evidence of malignancy was found.



Figure 1: Chest X ray



Figure 2: CECT thorax



Figure 3: CECT thorax



Figure 4: Pedunculated
endobronchial lesion



Figure 5: Pale brown polypoid lesion



Figure 6: Hyaline cartilage embedded in a myxoid stroma



Figure 7: Repeat chest x ray on follow up

TREATMENT

Patient was initiated treatment on intravenous antibiotics for suspected infective exacerbation, nebulizations and other supportive measures. During hospitalization, patient's condition improved clinically and symptomatically.

FOLLOW-UP

A repeat chest x ray taken after 3 weeks showed significant improvement. Patient improved clinically and symptomatically.

DISCUSSION

Pulmonary hamartomas are benign tumors composed of an abnormal mixture of lung tissue elements, most commonly cartilage, fat, and connective tissue [8]. While peripheral hamartomas are often asymptomatic and incidentally discovered, endobronchial location is rare presentation (1.4 %–10 %) [9]. Endobronchial variants can present with symptoms related to airway obstruction such as cough, wheeze, breathlessness, and recurrent pneumonia [10]. In smokers, such symptoms may be misdiagnosed to chronic bronchitis or malignancy, delaying definitive diagnosis [11].

Radiologically, hamartomas may appear as well-circumscribed opacities [12]. In peripheral lesions, the presence of "popcorn" calcification is considered pathognomonic. However, endobronchial hamartomas may present as non-specific opacities with collapse, necessitating further evaluation with CT and bronchoscopy [13,14]. Bronchoscopy biopsy is often sufficient, though in some cases, intraoperative frozen section analysis may be required [15].

Histopathologically, the diagnosis is confirmed by identifying characteristic mesenchymal elements such as cartilage and adipose tissue within a disorganized matrix. Treatment of symptomatic endobronchial hamartomas involves surgical excision [16]. Other options include bronchoscopy resection, enucleation, lobectomy depending on size, location, and extent of damage [17,18]. Surgery should be the last therapeutic option. It is commonly performed in patients with a chronic obstruction, non-resolving symptoms, a large-sized tumor and in the case of an irreversible surrounding lung damage. It may include a wedge resection, a segmentectomy or a lobectomy. Complete removal leads to excellent prognosis, with low recurrence rates and relief of obstructive symptoms. In this case, the patient's symptoms, examination, initial investigations suggested infective pathology. The bronchoscopy finding of a pedunculated mass and subsequent biopsy were crucial in establishing the diagnosis and avoiding unnecessary aggressive treatments for suspected malignancy.

CONCLUSION

Endobronchial hamartomas, although benign and rare, can be included in the differential diagnosis of endoluminal lesions causing lobar collapse, especially in chronic smokers. Thorough clinical evaluation, imaging, and bronchoscopy are essential for diagnosis.

Histopathology remains the gold standard for confirmation. This case highlights the importance of considering benign tumors in patients with persistent respiratory symptoms and radiological evidence of lobar collapse.

Declaration:

Conflicts of interests: The authors declare no conflicts of interest.

Author contribution: All authors have contributed in the manuscript.

Author funding: Nill

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 hondroid 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. Adachi Y, Araki K, Metsugi H, Tokushima T. A case of relatively rapid enlargement of a pulmonary hamartoma. *Journal of the Japanese Association For Chest Surgery*. 2012; 26:673–676.
6. Himpe U, Deroose CM, Leyn PD, Verbeken E, Vansteenkiste J. Unexpected slight fluorodeoxyglucose-uptake on positron emission tomography in a pulmonary hamartoma. *Journal of Thoracic Oncology*. 2009;4(1):107–108.
7. Hasegawa M, Sone S, Takashima S, et al. Growth rate of small lung cancers detected on mass CT screening. *British Journal of Radiology*. 2000;73(876):1252–1259.
8. Okubo T, Iwashiro N, Ishizaka M, et al. A resected case of non-chondromatous hamartoma composed predominantly of smooth muscle. *Japanese Journal of Chest Diseases*. 2009;68(2):167–171.
9. Raina N, Kaushal V, Pathania R, Rana A. Pulmonary hamartoma: Case report and brief review of literature. *Clinical Cancer Investigation Journal*. 2016;5(3):240.
10. Itoga M, Kobayashi Y, Takeda M, et al. A case of pulmonary hamartoma showing rapid growth. *Case Rep Med*. 2013; 2013:231652.
11. Choi JC, Yu CM, Ryu YJ, et al. The role of endoscopic surgery for completely obstructive endobronchial benign tumor. *Korean J Intern Med*. 2006;21(1):15-19.
12. Schneider F, Winter H, Schwarz F, et al. Endobronchial lipomatous hamartoma: an incidental finding in a patient with atrial fibrillation-a case report. *Case Rep Med*. 2012;2012:897581.
13. Nili M, Vidne BA, Avidor I, Paz R, Levy MJ. Multiple pulmonary hamartomas; a case report and review of the literature. *Scand J Thorac Cardiovasc Surg*. 1979;13(2):157-160.
14. Van den Bosch JM, Wagenaar SS, Corrin B, Elbers JR, Knaepen PJ, Westermann CJ. Mesenchymoma of the lung (so called hamartoma): a review of 154 parenchymal and endobronchial cases. *Thorax*. 1987;42(10):790-793.
15. Ulas AB, Aydin Y, Eroglu A. Pulmonary Hamartomas: A Single-Center Analysis of 59 Cases. *Eurasian J Med*. 2022;54(3):270-273.
16. Esme H, Duran FM, Unlu Y. Surgical treatment and outcome of pulmonary hamartoma: a retrospective study of 10-year experience. *Indian J Thorac Cardiovasc Surg*. 2019;35(1):31- 35.
17. Li B, Xin Z, Xue W, Zhang X. Lung hamartoma resembling lung cancer: a report of three cases. *J Int Med Res*. 2022;50(11):30-3.
18. Kulkarni K, McHugh KE, Miller JJ. Long-term outcomes of surgical resection in pulmonary carcinoid tumors. *The Annals of Thoracic Surgery*. 2017;103(3):1015-1020