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Endobronchial Hamartoma: A Case Report

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Abstract

Pulmonary hamartomas are among the most common benign lung tumors and are typically located in the peripheral lung parenchyma. Endobronchial localization is uncommon and may cause significant airway obstruction and diagnostic challenges.

We report the case of a 40-year-old male chronic smoker presenting with a two-month history of persistent productive cough. Chest computed tomography (CT) revealed a heterogeneous left parahilar opacity associated with obstruction of the left upper lobe bronchus and partial left upper lobe atelectasis. Bronchoscopy identified a smooth, well-defined endobronchial lesion at the entrance to the left upper lobe bronchus. Histopathological examination confirmed the diagnosis of a bronchial hamartoma, with adipose and smooth muscle components and bland spindle cells described in the available report. The patient was referred for thoracic surgical evaluation; however, subsequent treatment and clinical outcomes were unavailable.

Endobronchial hamartomas may mimic malignant tumors and other obstructive airway conditions. CT imaging and bronchoscopy are important diagnostic tools, while histopathological examination is essential for establishing the diagnosis. Endoscopic resection may be considered when technically feasible, with surgical management as an alternative in selected cases.

Although uncommon, endobronchial hamartoma should be considered in the differential diagnosis of patients presenting with persistent respiratory symptoms and bronchial obstruction. Accurate diagnosis relies on correlation between clinical, radiological, bronchoscopic, and histopathological findings.

Categories: Pulmonology
Keywords: benign lung tumor, bronchial obstruction, bronchoscopy, endobronchial hamartochondroma, endobronchial hamartoma, endoscopic resection

Introduction

Pulmonary hamartomas are among the most common benign tumors of the lung, accounting for a substantial proportion of benign pulmonary neoplasms [1]. They consist of a disorganized mixture of mature tissues, which may include cartilage, adipose tissue, connective tissue, and smooth muscle. Most are located in the peripheral lung parenchyma and remain asymptomatic. Endobronchial hamartomas are uncommon, accounting for approximately 1.4% of pulmonary hamartomas in a large series of 215 cases, whereas other published series have reported proportions ranging from 10% to 20% [2,3]. This variability likely reflects differences in the populations studied and the series reported. These figures refer to the proportion of pulmonary hamartomas with endobronchial localization, rather than the proportion of all benign pulmonary tumors.

Endobronchial hamartoma may cause airway obstruction, leading to persistent cough, wheezing, recurrent respiratory infections, or atelectasis. Their clinical and radiological manifestations may mimic those of malignant endobronchial tumors and other benign airway lesions, making diagnosis challenging. Computed tomography (CT) helps characterize the lesion and may reveal suggestive features, such as intralesional fat or calcification, although these findings are not present in every case. Bronchoscopy allows direct visualization of the lesion and histopathological sampling.

Endoscopic resection is often a preferred treatment option when technically feasible, as it can relieve airway obstruction while preserving lung parenchyma [4]. Given the uncommon presentation and its potential to mimic other airway disorders, we report a case of endobronchial hamartoma presenting with persistent cough and partial left upper lobe atelectasis.

The differential diagnosis of endobronchial lesions includes primary bronchial malignancies, carcinoid tumors, endobronchial lipoma, leiomyoma, and other benign airway tumors. Pulmonary hamartomas are benign lesions composed of a disorganized mixture of mature tissues in varying proportions. Although cartilage may be a component of pulmonary hamartomas, its presence must be established by

histopathological examination rather than assumed. In the present case, the available histopathology report described a bronchial hamartoma without documenting a cartilaginous component. Histopathological examination is, therefore, essential for characterizing the lesion and supporting the final diagnosis. This case illustrates the diagnostic challenges associated with an endobronchial hamartoma presenting with bronchial obstruction and atelectasis.

Case Presentation

We report the case of a 40-year-old male patient, a chronic smoker with a 30-pack-year smoking history, with no significant past medical history, who presented with a two-month history of productive cough with mucous sputum. The cough was persistent but not associated with fever, chest pain, hemoptysis, or weight loss. His general condition remained preserved, and there were no signs of systemic illness.

On clinical examination, the patient was hemodynamically and respiratorily stable. There were no abnormal findings on pulmonary auscultation, and no signs of respiratory distress or cyanosis were noted.

Chest CT revealed a heterogeneous left parahilar opacity associated with obstruction of the left upper lobe bronchus and partial atelectasis of the left upper lobe (Figures *1*, *2*). No lymphadenopathy or pleural effusion was observed.

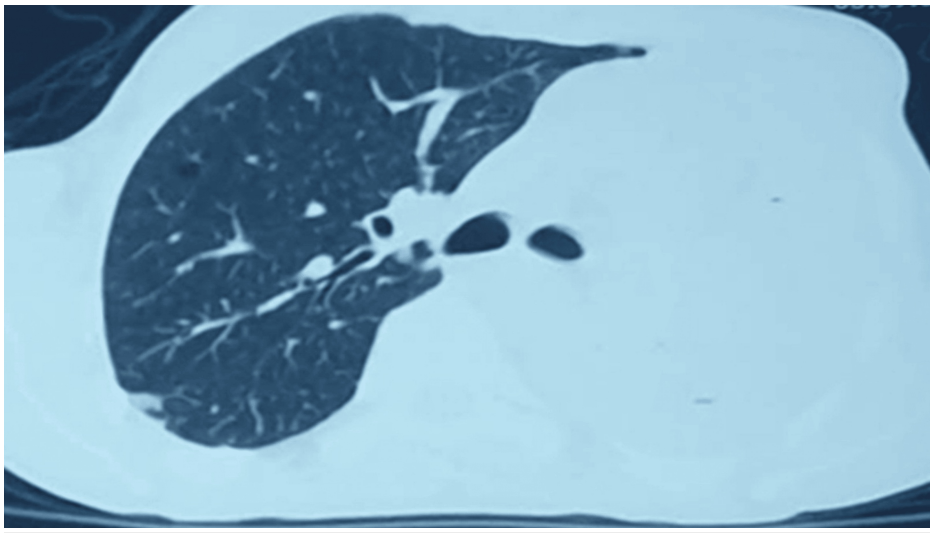

FIGURE 1: Chest CT scan (parenchymal window, axial section) showing obstruction of the left upper lobe bronchus causing atelectasis with reduced lung volume.

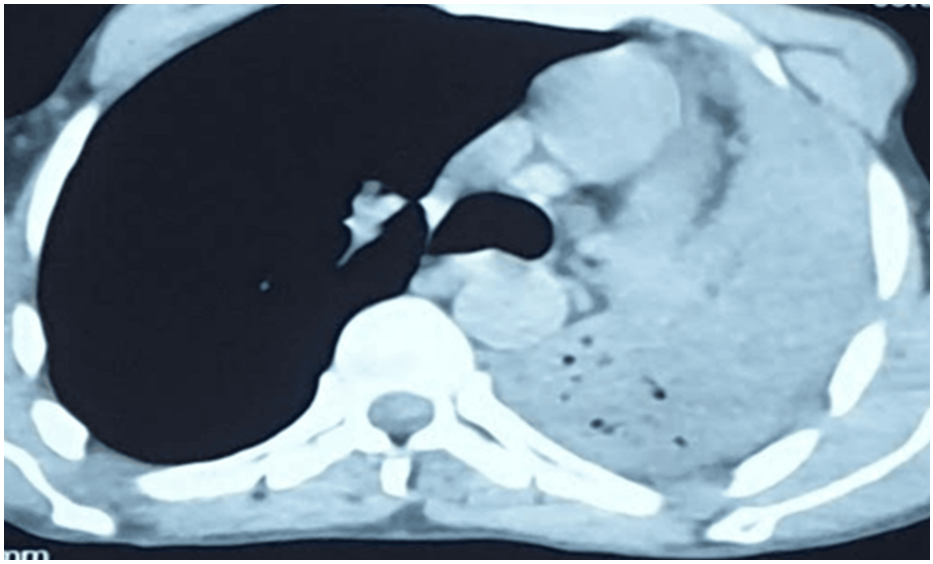

FIGURE 2: Chest CT scan (mediastinal window, axial section) showing obstruction of the left upper lobe bronchus causing atelectasis with reduced lung volume.

Flexible bronchoscopy subsequently revealed a smooth, well-defined endobronchial polypoid lesion partially obstructing the entrance to the left upper lobe bronchus (Figure *3*). Multiple biopsies were obtained for histopathological examination.

FIGURE 3: Bronchoscopic appearance of a smooth, well-defined endobronchial lesion at the entrance of the left upper lobe bronchus.

Histopathological examination confirmed the diagnosis of an endobronchial hamartoma. The lesion was described as containing adipose and smooth muscle components, along with bland spindle cells, without documented cytological atypia or mitotic activity (Figures 4, 5).

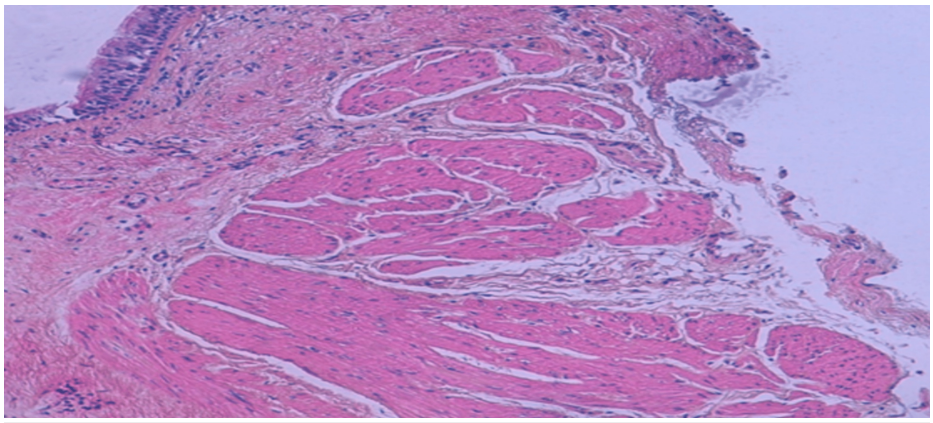

FIGURE 4: At low magnification, the bronchial mucosa shows a benign-appearing tumour proliferation within the chorion, composed of a mixture of muscular and adipose tissue.

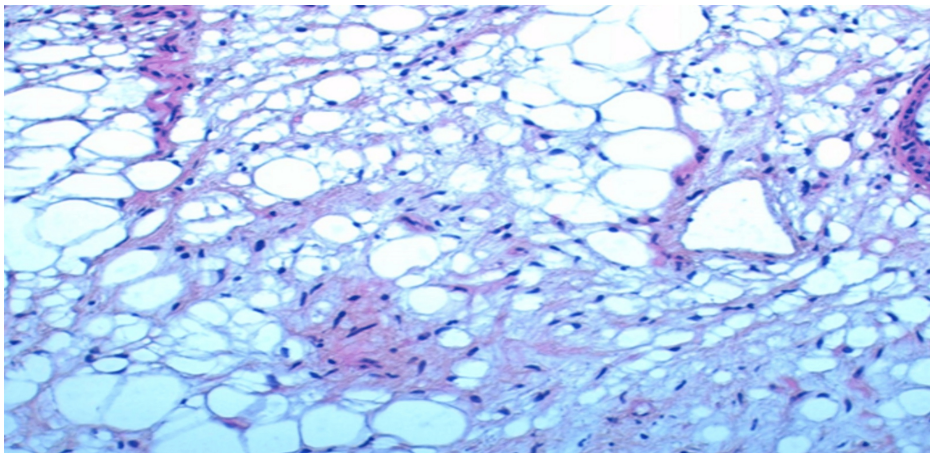

FIGURE 5: At high magnification, the adipose component is mainly composed of numerous mature adipocytes without cytonuclear atypia, associated with non-atypical spindle cells of fibroblastic appearance. The muscle component is formed of regular smooth muscle cells, without cytonuclear atypia or mitotic figures.

The patient was referred to the thoracic surgery department and was subsequently lost to follow-up at our institution. Further information regarding the definitive treatment, postoperative course, and long-term outcome was unavailable.

Discussion

Bronchopulmonary hamartomas are benign tumors composed of a disorganized mixture of mature tissues, which may include cartilage, connective tissue, adipose tissue, smooth muscle, and respiratory epithelium in variable proportions [4]. Most pulmonary hamartomas are located in the lung parenchyma, whereas endobronchial localization is uncommon and may cause significant airway obstruction [2].

In the series reported by Cosío et al., which included 43 cases of endobronchial hamartoma, the mean age at diagnosis was 62 years (range, 29-81 years), with a male-to-female ratio of 6.1 (37 men and six women) [2]. Clinically, endobronchial hamartomas may produce symptoms related to airway obstruction, including persistent cough, dyspnea, hemoptysis, recurrent localized infections, and atelectasis [4,5]. However, these manifestations are nonspecific and may overlap with those of malignant tumors and other benign airway

lesions. Therefore, accurate diagnosis requires correlation of clinical findings with radiological, bronchoscopic, and histopathological results.

Thoracic imaging plays a pivotal role in the diagnostic evaluation of endobronchial lesions. Chest radiography may reveal indirect signs of bronchial obstruction, such as atelectasis, abscess formation, air trapping, or recurrent localized pneumonia [2]. CT is more effective in determining the precise location of the lesion and its relationship with adjacent structures. Pulmonary hamartomas may appear as well-defined nodular lesions, sometimes containing areas of fat attenuation or characteristic calcifications, although these features are not present in all cases [3,6]. Endobronchial lesions may also cause distal ventilation abnormalities and atelectasis.

Bronchoscopy allows direct visualization of the lesion, which may appear as a smooth or lobulated, yellowish to pinkish polypoid mass protruding into the bronchial lumen [2,6]. Endobronchial biopsies may contribute to diagnosis but can sometimes be inconclusive because of sampling limitations [6]. Histopathological examination is essential for characterizing the lesion and establishing the final diagnosis.

The treatment of choice is endoscopic excision, particularly via rigid bronchoscopy, which allows complete removal of the lesion while preserving lung parenchyma. This technique is particularly suitable for tumors with purely endoluminal growth [6,7]. In selected cases, interventional bronchoscopic techniques such as laser therapy or cryotherapy can be employed successfully [8]. When endoscopic techniques are inadequate or not feasible, surgical intervention is indicated. Excision by bronchotomy is a conservative and safe option. For tumors with a broad base or complex morphology, bronchoplastic surgery may be required [1,8].

Conclusions

Endobronchial hamartomas are uncommon benign lesions that may cause airway obstruction and atelectasis, mimicking malignant endobronchial tumors. This case highlights the importance of correlating clinical presentation, CT findings, bronchoscopic examination, and histopathological analysis to establish an accurate diagnosis. Endoscopic resection may be considered for symptomatic lesions when technically feasible, whereas surgical management may be appropriate in selected cases. Treatment decisions should be individualized according to lesion characteristics and the degree of airway obstruction.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Disclosures

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References

1. World Health Organization Classification of Tumours: Pathology and Genetics of Tumours of the Lung, Pleura, Thymus and Hear. Travis WD, Brambilla E, MüllerHermelink HK, Harris CC (ed): IARC Press, Lyon, France; 2004.
2. Cosío BG, Villena V, Echave-Sustaeta J, de Miguel E, Alfaro J, Hernandez L, Sotelo T: Endobronchial hamartoma. Chest. 2002, 122:202-5. 10.1378/chest.122.1.202

3. Goodman A, Falzon M, Gelder C, George J: Central airway obstruction caused by a peripheral hamartoma . Lung Cancer. 2007, 57:395-8. 10.1016/j.lungcan.2007.03.008
4. Nassiri AH, Dutau H, Breen D, Colchen A, Quiot JJ, Nguyen B, Vergnon JM: A multicenter retrospective study investigating the role of interventional bronchoscopic techniques in the management of endobronchial lipomas. Respiration. 2008, 75:79-84. 10.1159/000109709
5. Gjevre JA, Myers JL, Prakash UB: Pulmonary hamartomas. Mayo Clin Proc. 1996, 71:14-20. 10.4065/71.1.14
6. Zhang M, Feng D, Jing J, Liu H, Zhao S, Zhang Q: PD-L1 protein expression in non-small cell lung cancer based on different immunohistochemical antibodies. J Thorac Dis. 2017, 9:E470-3. 10.21037/jtd.2017.04.34
7. Sellers D, Djaiani G: Dexmedetomidine: magic bullet or firing blanks? . J Thorac Dis. 2016, 8:3024-7. 10.21037/jtd.2016.11.34
8. Ahmed S, Arshad A, Mador MJ: Endobronchial hamartoma; a rare structural cause of chronic cough . Respir Med Case Rep. 2017, 22:224-7. 10.1016/j.rmcr.2017.08.019