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Endobronchial Lipoma Presenting with Localised Wheezes: A Case Report

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Abstract

A 67-year-old non-smoking man was referred to our clinic with dry cough and shortness of breath during exercise over the course of 6 months. The physical examination was unremarkable except for the presence of isolated localised wheezes over the left upper lung. His chest X-ray was normal. A computed tomography (CT) scans of chest revealed an irregular and partial obstruction of the left upper lobe bronchus with soft-tissue density lesion. Bronchoscopy revealed the presence of a smooth surface tumour occluding the orifice of the lingula bronchus. The lesion and its stalk were totally removed by cutting with forceps. After the removal of the lesion, patient's dyspnoea and wheezes were disappeared completely. Histopathological examination of the lesion was reported as endobrochial lipoma (EL). At the 2-years follow-up period, the patient was remained asymptomatic. We present a case report of an unusual presentation of EL with localised wheezes and without the presence of fat density on CT scanning.

Keywords: Lipoma, respiratory sounds, bronchoscopy

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Introduction

Endobronchiallipoma (EL) is a rare benign tumour of the tracheobronchial tree. Endobronchial benign tumours are seen in less than 4% of pulmonary neoplasms. EL accounts for only 0.1% to 0.5% of all lung tumours and for 13% of benign pulmonary tumours. It originates in the normal fat tissue of the bronchi [1-3].

Bronchial occlusion symptoms may mimic symptoms of asthma, chronic obstructive pulmonary disease (COPD), or lung carcinoma, and may lead to misdiagnosis. Early diagnosis and treatment is required to prevent sequelae such as bronchiectasis and lung damage [1-3].

We present a case report of an unusual presentation of endobronchiallipoma with localised wheezes and without the presence of fat density on computed tomography (CT) scanning.

Case

A 67-year-old man was admitted to our hospital with a cough and shortness of breath during exercise over the course of 6 months. He was a non-smoker with no history of fever or haemoptysis. The physical examination revealed the wheezes to be over the left upper lung field in anterior and posterior aspect. The laboratory findings were normal. Pulmonary function tests (PFT) and flow-volume loop contours were normal.

The chest X-ray was normal except for the presence of left pleural thickening. CT scans of the chest revealed an irregular and partial obstruction of the proximal portion of the left upper lobe bronchus by a soft-tissue density on an endobronchial lesion (Figure 1).

Fibreoptic bronchoscopy (FOB) revealed a total obstruction of the lingula bronchus by a pale yellow endobronchial lesion with a diameter of approximately 3 mm and a smooth surface (Figure 2). The mass was located on the superior wall of the bronchus and moved on inspiration. The bronchoscopic appearance of the lesion suggested a benign endobronchial tumour. Biopsy specimens were obtained with forceps, which completely removed the lesion and its stalk. Minimal bleeding from the site was observed during FOB. The histopathology was compatible with EL (Figure 3).

In our case, the lesion was totally resected by cutting with forceps. After the removal of the lesion, the patient's dyspnoea and wheezes disappeared completely. At the 2-year follow-up, the patient was symptom free.

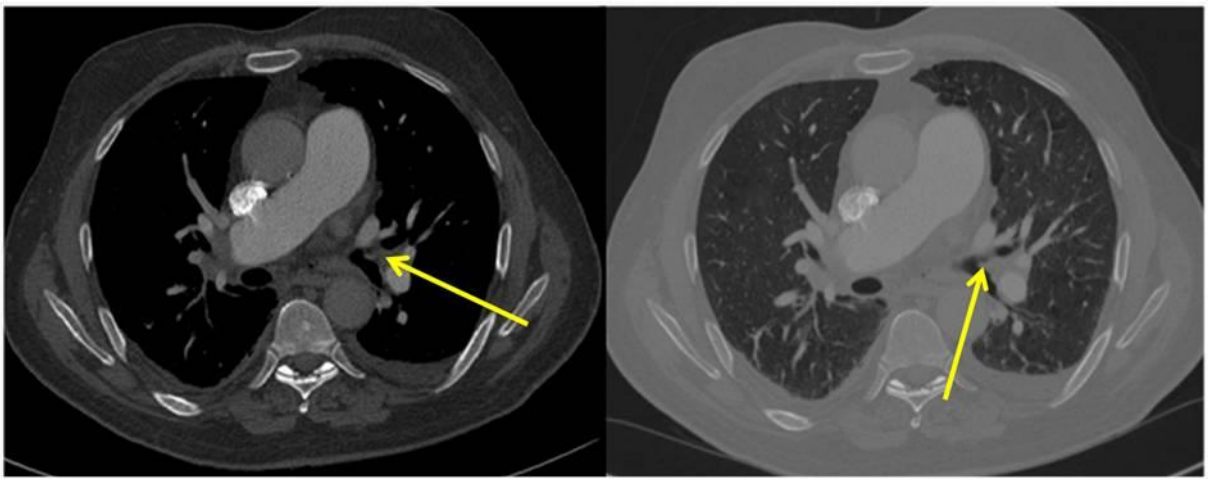

Figure 1. Computed tomography of chest: irregular obstruction of the proximal portion of the left upper lobe bronchus by a soft-tissue endobronchial mass (yellow arrows).

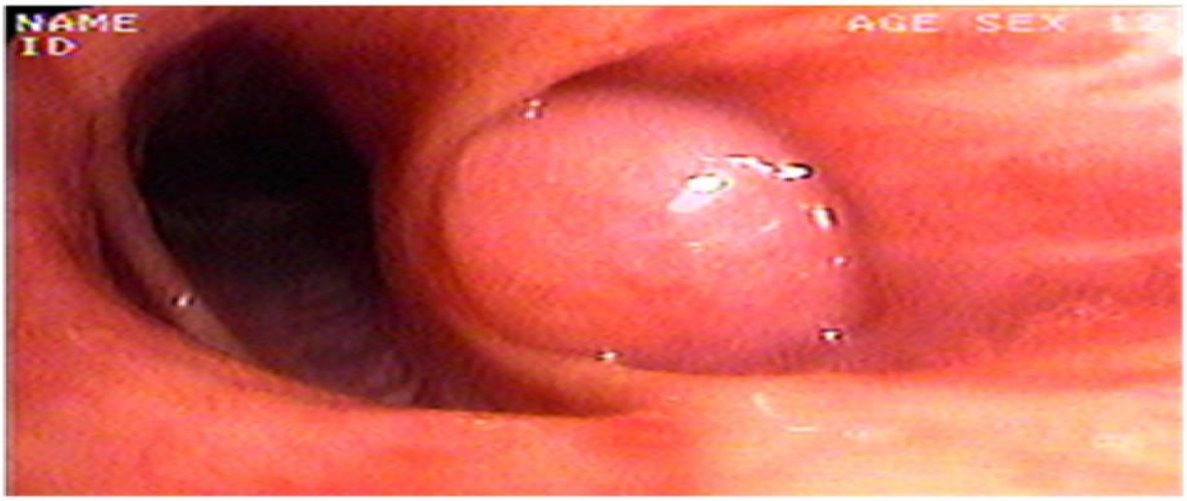

Figure 2. Endobronchiallipoma with a smooth surface almost completely obstructing the orifice of the lingula bronchus.

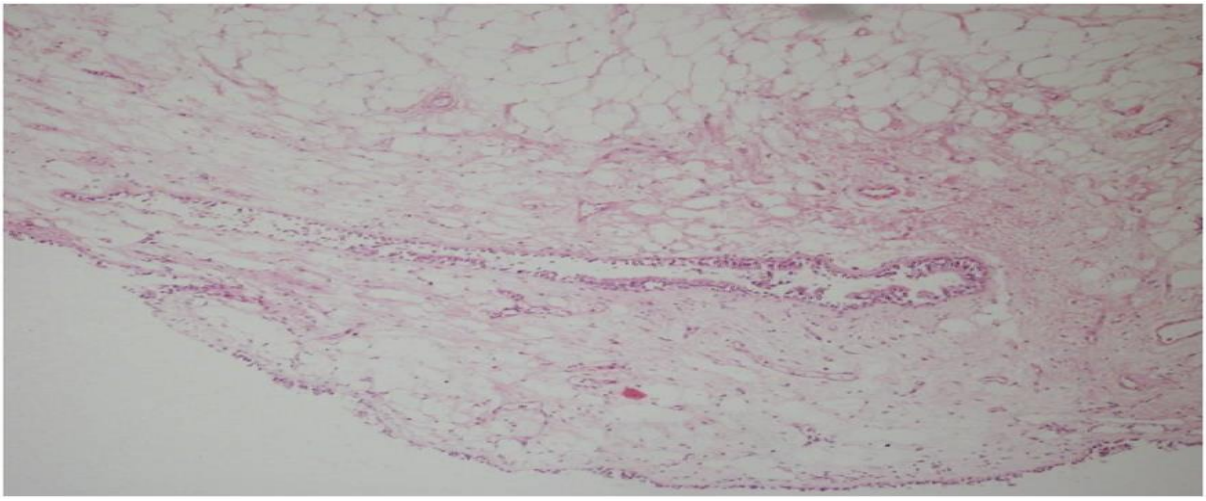

Figure 3. Haematoxylin eosin staining (100×20).Histologic examination revealed lobulated adipose tissue consisting of mature lipocytes covered by respiratory epithelium.

Discussion

Endobronchiallipoma (EL) is an extremely rare tumour of the tracheobronchial tree, which usually causes recurrent obstructive pneumonia and acquired lung destruction. It is histologically benign and originates from the normal fat tissue of the bronchi, and is mostly seen in middle-aged men [1-3].

Cases with EL are often symptomatic. Symptoms are usually caused by bronchial occlusion. Patients often present with persistent cough, dyspnoea, haemoptysis, and symptoms of recurrent pneumonia. The duration of the symptoms varies from a few months to several years [1,3]. Our patient had a dry cough and shortness of breath during exercise but had no history of pneumonia.

In this case, isolated inspiratory localised wheezes were heard over the left upper lung field in anterior and posterior aspect. This type ofwheeze is usually caused by high-velocity airflow through narrow airways. Common causes are intraluminal obstruction by a tumour, secretions, foreign bodies, and external compression to the airway [4–6].In this case, the wheeze was heard only on inspiration. Such wheezing is caused by dilatation of the obstructed airway and a partial increase of the air flow velocity on inspiration.

The radiological findings of EL are non-specific. However, patients may have chest X-ray abnormalities that are related to complications such as pneumonia, atelectasis, and bronchiectasis [3,6]. In this case, the chest X-ray was normal. Some research has suggested that the presence of an homogenous fat density without contrast enhancement on the CT scan is diagnostic for EL [3,6]. However, our patient's CT did not reveal any fat density, possibly due to the movement of the lesion on inspiration and small lesions not showing up on the CT. To the best of our knowledge, no other EL cases with such radiological findings and presenting with localised wheezes upon physical examination have been reported.

EL is usually localised in large diameter bronchi, such as in the lobar and segmental regions, mostly located on the right side. Bronchoscopy and bronchoscopic biopsies are the most reliable methods for diagnosing EL. EL can be visualised by bronchoscopy as pedunculated, smooth surface endobronchial lesions of 1–3 cm in size with colour ranging from pale yellow to grey [1–3,6]. We detected a smooth, pale yellow mass with a stalk attached to the bronchial wall of the lingula bronchus.

Histological features of EL include mature adipose tissue in lamina propria completely covered by respiratory epithelium [7]. Ourhistopathological examination revealed similar findings.

The treatment of EL includes bronchoscopic removal, bronchotomy, lobectomy, or pneumonectomy. If the lesion is small without significant lung damage, conservative treatments such as bronchoscopic excision, laser, cryotherapy, or electrosurgery may be considered. Resection surgery should be considered for cases with large lesions and/or distal lung injury. To avoid distal lung damage and resection of large lung areas, many authors recommend removing the lesion at an early stage of EL [3, 8, 6]. In our case, the EL was completely removed with its stalk by cutting with forceps during FOB. Our patient was symptom-free throughout the 2 years of follow up, and there was no recurrence of EL detected on the chest CT.

We recommend bronchoscopy for patients with localised wheezes, even if they have a normal chest radiogram and CT scan, to avoid misdiagnoses of endobronchial tumour lesions.

References

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