Endobronchial lipoma, a rare cause of endobronchial lesion

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Section: Chest imaging
Area of Interest: Thorax
Procedure: Diagnostic procedure
Imaging Technique: CT
Special Focus: Tissue characterisation

Case Type: Clinical Cases

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Patient: 63 years, male

Clinical History:

63-year-old male patient on the lung transplant list due to interstitial disease. A programmed CT was performed before the surgery.

Imaging Findings:

The thoracic CT showed a low-density lesion (-72HU) of 8 mm within the lingual lobe bronchus. The expiratory sections showed selective air trapping in the lingual lobe.

A bronchoscopy was performed confirming the obstruction of the lingual lobe bronchus which was caused by a round yellow lesion. The suspected diagnosis was endobronchial lipoma.

Discussion:

A - BACKGROUND [1, 2, 3]
Endothoracic lipoma is a rare benign tumour. According to the localisation, five classifications are made: Cardiac, parenchymal, pleural, mediastinal and endobronchial. Endobronchial lipomas are very rare, the incidence is 0.1-0.5% of the total lung tumours. A man with 50 to 60 years of age is the prototype patient. Obesity, heavy smoking and male sex are related factors, but no clear risk factors exist.

B - CLINICAL PERSPECTIVE [4]
The clinical presentation will be different based on the localisation of the lipoma, the level of obstruction and the size. If symptoms are presented, cough is the most common. Recurrent pneumonias, wheeze and dyspnoea are also common. Those symptoms can lead to a misdiagnosis of asthma/COPD or malignancy.

C - IMAGING PERSPECTIVE [1, 2, 3, 4, 5]
- X-ray: Unspecific, non-diagnostic
- Chest CT: Fat tissue density without contrast enhancement
- Chest MRI: Normal fat density tissue
- Bronchoscopy: Soft, round, yellow lesion with few or no vessels on surface and smooth borders.

Although chest CT is diagnostic, bronchoscopy remains indispensable for the diagnosis and treatment of
endobronchial lipoma.
A sequence of chest CT and bronchoscopy should be performed as soon as possible due to the complications of long-term obstruction.

D - OUTCOME
Once the diagnosis is made with CT, two treatments are possible: Endoscopic resection (bronchoscopy) and thoracotomy.
Endoscopic treatment is preferred as the lung parenchyma is preserved. However, if extraluminal extension, uncertain tumour aetiology or parenchymal destruction is detected, thoracotomy should be performed.
In this case, after the CT, a bronchoscopy was performed. After the pathological analysis the suspected diagnosis of endobronchial lipoma was confirmed.

E - TAKE HOME MESSAGE
- Endobronchial lipomas are rare, benign tumours of the lung.
- The symptomatology can lead to a misdiagnosis of asthma / COPD or malignancy tumours.
- Early diagnosis and bronchoscopy are indispensable to prevent the destruction of the parenchyma due to the long-term obstruction.

Differential Diagnosis List: Endobronchial lipoma, Endobronchial hamartoma, Bronchogenic adenocarcinoma, Small cell carcinoma, Pulmonary pleomorphic adenoma, Endobronchial metastases

Final Diagnosis: Endobronchial lipoma

References:
Description: An endobronchial lesion is seen within the lingula lobe bronchus. An area of different attenuation ratio is seen peripherally of the endobronchial lesion. Origin: Daniel Moreno, Radiology Department; Vall Hebron Hospital
**Description:** An endobronchial lesion is seen within the lingula lobe bronchus (yellow arrow). An area of different attenuation ratio is seen peripherally of the endobronchial lesion (blue area). **Origin:**
Daniel Moreno, Radiology Department; Vall Hebron Hospital
Figure 2

Description: Abdominal window showing a -72HU endobronchial lesion. Origin: © cDaniel Moreno, Radiology Department; Vall Hebron Hospital
Description: Expiratory study shows a circumscribed area of air trapping on lingula lobe due to the bronchial obstruction (blue area). Origin: © Daniel Moreno, Radiology Department; Vall Hebron Hospital
Figure 3

Description: Bronchoscopy image showing a round, yellow lesion with few small vessels on surface obstructing the lingula lobe. Origin: M culebras, Pneumology Department; Vall Hebron Hospital
**Description:** Pathological image showing mature fat cells and bronchial epithelium. **Origin:** Sansa Valero, Pathological Department; Vall Hebron Hospital