CLINICAL CASE

LUNG CANCER DIAGNOSED BY TRANSESOPHAGEAL ENDOSCOPIC ULTRASOUND

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Abstract

Lung cancer remains one of the leading causes of morbidity and mortality worldwide. Although bronchoscopy and percutaneous approaches are commonly used for diagnosis, certain pulmonary lesions with challenging locations may limit their accessibility. We present the case of a 56-year-old male, an active smoker with moderate chronic obstructive pulmonary disease, in whom follow-up computed tomography revealed significant growth of a paramediastinal pulmonary nodule in the right lower lobe. Positron emission tomography showed marked hypermetabolic activity consistent with primary lung malignancy. Due to the lesion's location and the difficulty of conventional access, transesophageal endoscopic ultrasound was performed, identifying a solid pulmonary mass with pleural and vascular involvement. Fine-needle aspiration confirmed the diagnosis of non–small cell lung carcinoma, adenocarcinoma subtype, with negative PD-L1 and ALK status. This case highlights the value of transesophageal endoscopic ultrasound as a safe and effective diagnostic tool for pulmonary lesions in anatomically challenging locations, enabling histological confirmation and supporting optimal therapeutic planning.

Keywords: lung cancer, endoscopic ultrasound.

Introduction

Lung cancer is one of the most common cancers worldwide and leads to high mortality rates. Several diagnostic techniques are available, such as bronchoscopy and percutaneous procedures. However, there are lesions that are difficult to access using these techniques (mediastinal lesions, those adjacent to major vessels, or those located anterior to the spine), where endoscopic ultrasound plays a significant role.

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Peña Tomey L, Bernad Cabredo B, Martínez Alcalá García S, Gascón Meléndez NJ, Cortés González A. Lung cancer diagnosed by transesophageal endoscopic ultrasound. RAPD 2026;49(2):62-64. DOI: 10.37352/2026492.4

Clinical case

A 56-year-old male smoker of 38 packs/years, with moderate emphysematous chronic obstructive pulmonary disease (COPD GOLD 2A) undergoing biannual follow-up by pulmonology.

A follow-up CT scan revealed one 18-mm paramediastinal pulmonary nodule in the right lower lobe (RLL) (previously 3 mm) and two others, one 7 mm in the right upper lobe and one 5 mm in the left lower lobe, with no changes.

The workup was completed with a positron emission tomography (PET) scan, which revealed a hypermetabolic RLL paramediastinal nodule with a maximum standard uptake value (SUV) of 11.9, consistent with a primary pulmonary neoplastic process; the other two nodules showed no significant metabolism.

Given the location of the lesion and the difficulty of conventional access, endoscopic ultrasound was performed, identifying a solid, hypoechoic, spiculated, non-vascularized pulmonary lesion measuring 36 × 34 mm, located 37 cm from the upper dental arch, which bulges into and infiltrates the pleura and the right pulmonary vein. No esophageal infiltration was observed. Fine-needle aspiration using a 22G needle was consistent with non-small cell lung carcinoma, specifically adenocarcinoma. PD-L1 and ALK negative.

Discussion

Endoscopic ultrasound allows for the examination of mediastinal structures where conventional techniques may be limited and enables the collection of tissue samples to confirm the histopathological diagnosis.

Transesophageal endoscopic ultrasound is a crucial technique in the diagnostic arsenal for lung cancer, as it allows safe and effective access to hard-to-reach areas. This not only improves diagnostic accuracy but also optimizes treatment planning and prognosis assessment in patients with this condition.

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Figure 1. ***Chest CT scan: 18-mm paramediastinal pulmonary nodule in the right lower lobe (RLL).***

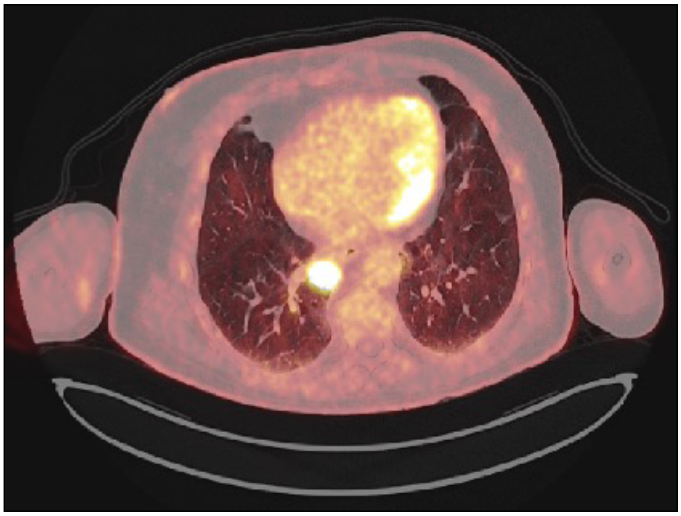

Figure 2. ***Positron emission tomography: hypermetabolic RLL paramediastinal nodule with a maximum standard uptake value (SUV) of 11.9, consistent with a primary pulmonary neoplastic process.***

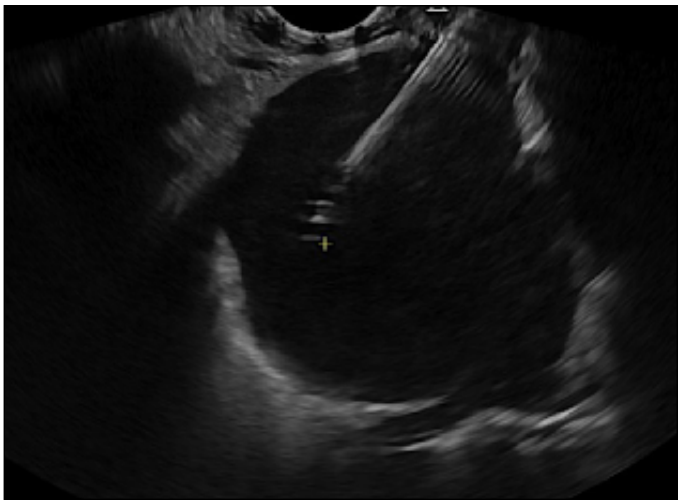

Figura 3. ***Transesophageal endoscopy ultrasound-guided fine-needle aspiration/biopsy.***

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