Respiration

Novel Insights from Clinical Practice

Transoesophageal Fine Needle Aspiration of Pleural Metastasis Using EBUS Scope

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Established Facts

- Endobronchial ultrasound probe (EUS-B) is an evolving diagnostic technique.
- The safety and feasibility of EUS-B in extra-pulmonary sites are uncertain.

Novel Insights

- We describe successful pleural biopsy via endobronchial ultrasound-guided transoesophageal fine-needle aspiration
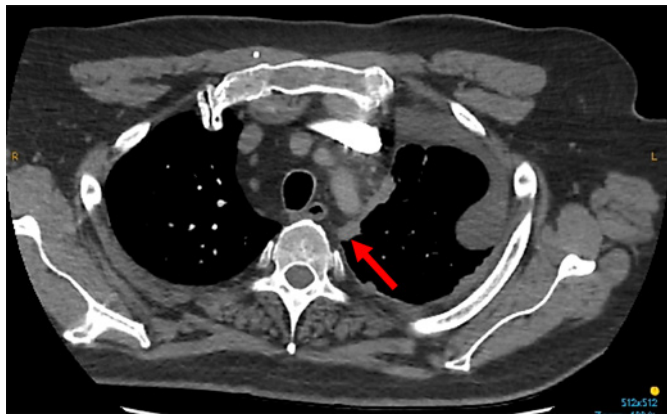

Keywords

Biopsy · Bronchoscopy · Endobronchial ultrasound · Endobronchial ultrasound probe · Lung cancer · Pleura

Abstract

Endoscopic ultrasound using convex endobronchial ultrasound probe (EUS-B) is an evolving diagnostic technique. We present a case of successful EUS-B biopsy of pleural metastasis in a patient with lung adenocarcinoma. This was an accurate, uncomplicated procedure and demonstrates the feasibility of EUS-B for pleural lesions.

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Introduction

Optimal treatment of lung cancer requires tissue diagnosis for staging [1]. Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is the preferred biopsy modality for non-small cell lung cancer. Increasingly, however, endoscopic transoesphageal fine-needle aspiration with convex probe bronchoscope (EUS-B-FNA) is being used as a complementary technique to sample lesions either inaccessible by bronchoscopy or associated with low diagnostic yield [2]. In this case report, we describe a successful case of pleural biopsy via EUS-B-FNA.

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Fig. 1. CT scan of the chest demonstrating pleural thickening sampled via the oesophagus (red arrow). The peripheral lesion was non-diagnostic on CT-guided biopsy. CT, computed tomography.
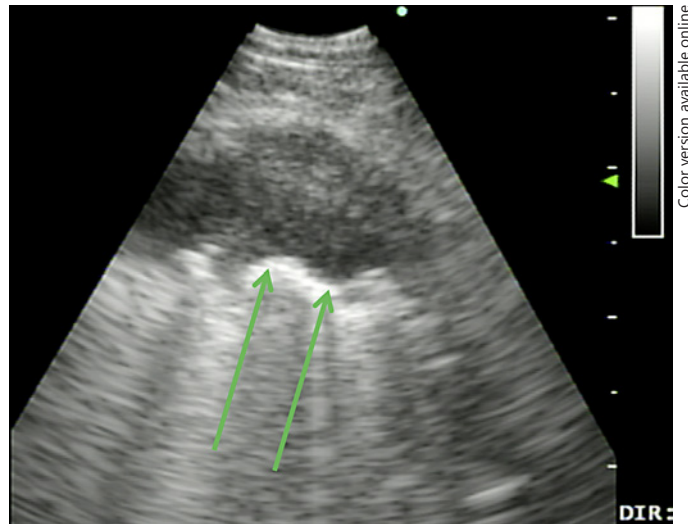
Fig. 2. Transesophageal ultrasound with ultrasound bronchoscope image of FNA of pleural deposit (margin of pleural lesion marked with green arrows). FNA, fine needle aspiration.

Case Report

A 62-year-old man with epidermal growth factor receptor (EGFR)-mutated lung adenocarcinoma developed radiologic progression while being treated with erlotinib (Fig. 1). Following non-diagnostic percutaneous biopsy of the left upper lobe peripheral lesion, the patient was referred for bronchoscopic biopsy. Airway and mediastinal examination was performed using a dedicated linear array bronchoscope (BF-UC180F-OL8, Olympus, Tokyo, Japan). No abnormalities were noted on examination via the trachea. The linear probe bronchoscope was then introduced via the oesophagus. Imaging within the superior mediastinum, posterior to the left subclavian artery, demonstrated a pleural mass lesion, approximately 4 cm superior to the aortic arch (Fig. 2). Sampling was performed via EUS-B-FNA using a 22 G needle (NA-201SX-4022; Olympus), with no complications. Specimens were processed as a cell block, as previously described [3]. Biopsy confirmed adenocarcinoma harbouring a T790M epidermal growth factor receptor mutation, and the patient was commenced on osimertinib.

Discussion

Increased sensitivity of combined EBUS and EUS sampling of mediastinal LN for detection of mediastinal metastases is well established [4]. EUS-B-FNA has demonstrated utility in sampling beyond the mediastinum, including pulmonary parenchymal lesions [5], and extra-thoracic sites, including adrenal metastases [6] as well as liver and coeliac metastases [7] and even ascitic tap [8]. This case represents another potential role for EUS-B-FNA in achieving minimally invasive diagnosis of metastatic disease.

Current European Respiratory Society guidelines classify sampling of distant metastases, such as left adrenal gland, by transgastric EUS-B as "experimental" and do not address pleural biopsy [9]. Experienced pulmonologists can safely and accurately perform EUS-B-FNA [10], with a high diagnostic sensitivity for both lymph node and non-nodal lesions, though uptake is limited [4, 11, 12].

Our case illustrates a further potential use of EUS-B-FNA contributing to diagnostic assessment of patients with suspected NSCLC. The safety and accuracy of this technique require further assessment.

Statement of Ethics

Written informed consent was obtained from the patient to publish the case.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

Author Contributions

D.P.S. performed the procedure. M.J. and D.P.S. wrote the manuscript. L.B.I. reviewed the manuscript. All authors approved the submitted version.

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