

Case Report

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Diagnosis and treatment of coincident Hodgkin's lymphoma and hamartoma by endobronchial methods: A Case report

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Abstract:

Endobronchial ultrasound-transbronchial needle aspiration (EBUS-TBNA) is recommended for the diagnosis of malign and benign mediastinal lymphadenopathies and lesions adjacent to the central airways. However the diagnostic yield of EBUS-TBNA in diagnosis of lymphoma is weak. Additionally, the challenge of catching Reed-Sternberg cells in such a small sample size lowers the sensitivity of EBUS-TBNA for diagnosis of Hodgkin lymphoma. EBUS-TBNA can be performed with rigid bronchoscopy. A 64 years old male patient with multiple abdominal and mediastinal lymphadenopathies with coinciding hamartoma and Hodgkin lymphoma is reported for presenting diagnostic and therapeutic interventional methods performed for this unique coincidence.

Keywords:

Endobronchial ultrasound-guided transbronchial needle aspirate, hamartoma, Hodgkin's lymphoma

Introduction

Interventional bronchoscopy has rapidly gained a wide area in diagnostic and therapeutic approaches in both malignant and nonmalignant lesions during the last decades. Flexible bronchoscopy which is widely available can access distal airways without general anesthesia, but rigid bronchoscopy can be superior in situations when more secured airway is needed. Endobronchial ultrasound-guided transbronchial needle aspirate (EBUS-TBNA) can be used for diagnosis of malignant hilar and mediastinal lymph nodes with a sensitivity of 85%–100%.^[1] However, its role in the diagnosis of suspected lymphoma is still being debated over.

Case Report

A 64-year-old male patient admitted to our clinic with complaints of dyspnea and

fatigue for 6 months. His medical history was irrelevant except that he was an ex-smoker with a 50 packs/year smoking history. His physical examination was normal and oxygen saturation in room air was measured as 94% via a pulse oximeter.

Routine biochemistry was totally normal. Complete blood count was as follows: white blood cells: 5900/mm³, hemoglobin: 7.1 g/dl, and platelet: 404,000/mm³. Sedimentation was 40 mm/h; C-reactive protein was 5.5 mg/dl. After these routine tests, the medical investigation was focused on the cause of anemia. Hematological parameters including levels of serum iron, iron-binding capacity, ferritin, Vitamin B12, and folate were normal. Hepatosplenomegaly was not evident on abdominal ultrasonography, but abdominal tomography revealed multiple lymphadenopathy, which of the biggest is 2 cm in diameter. Upper gastrointestinal endoscopy and colonoscopy

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were performed, and neither sign of cancer nor hemorrhage was observed.

The patient underwent pulmonary function test (PFT) and computed tomography (CT) of the thorax for differential diagnosis of chronic dyspnea. PFT resulted in restrictive dysfunction. The CT of the thorax demonstrated multiple conglomerate mediastinal lymphadenopathies in paratracheal, aortopulmonary, subcarinal, and right paraesophageal regions [Figure 1].

Initially, fiber-optic bronchoscopy (FOB) under topical airway anesthesia was planned. However, the patient could not tolerate the procedure, so it was switched to FOB under deep sedation. A polypoid lesion was visualized during FOB under deep sedation, and the patient underwent rigid bronchoscopy. A polypoid lesion in the apical segment of the left lower lobe was totally extracted by cryoprobe [Figure 2]. EBUS was performed for differential diagnosis of the mediastinal lymph nodes through the rigid bronchoscope, and subcarinal hypoechoic lymph node with unruffled borders was sampled [Figure 3]. Informed consent was taken before the interventions and for disclosing the patient's records for scientific purposes.

Pathologic evaluation of cryobiopsy pointed out the diagnosis of lipomatous hamartoma, whereas EBUS-TBNA of the lymph node was coherent with Hodgkin's lymphoma (HL). The patient was referred to the oncology center for treatment and follow-up of HL.

Discussion

The diagnostic procedure of this patient is special in many aspects. The pathological diagnosis and subtyping of lymphoma by EBUS-TBNA are very difficult because of small sample size, leading to discordance between cytological and histological samples. In spite of these difficulties, Kennedy *et al.* presented a retrospective study of 25 patients with suspected lymphoma who were diagnosed by EBUS-TBNA with a sensitivity of 90.9% and a specificity of 100%.^[2] However, The British Thoracic Society Interventional Bronchoscopy Guideline Group indicated that there was not sufficient evidence to recommend EBUS-TBNA for routine use in the diagnosis of lymphoma in 2011.^[1] Since the publication of this guideline, ongoing researches have tried to shine a light on this topic; however, because of wide range of sensitivity, this issue remains a controversy.^[3,4] However, in the study of Moonim *et al.*, high diagnostic yield of EBUS-TBNA for HL was observed with a sensitivity of 79%.^[4]

As it was stated in the CHEST guideline of EBUS-TBNA published in 2016, EBUS-TBNA which

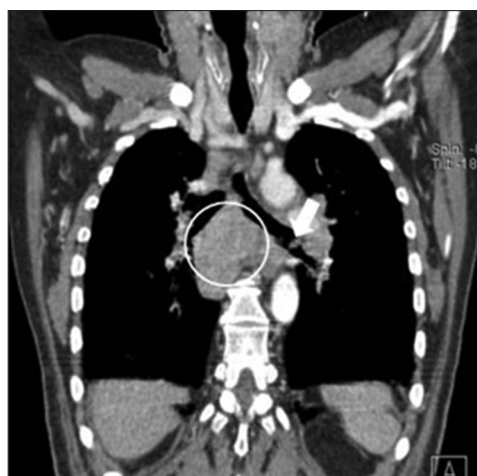


Figure 1: Coronal section of thorax computed tomography: mediastinal lymphadenopathies (the circle) and the endobronchial hamartoma in the apical segment of left lower lobe (the arrow)

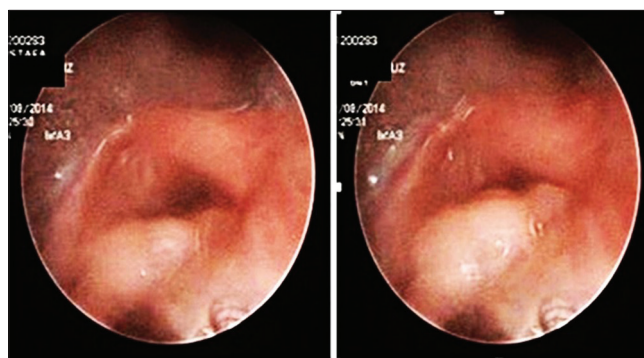


Figure 2: Bronchoscopic images of polypoid lesion projecting from the orifice of the apical segment of left lower lobe

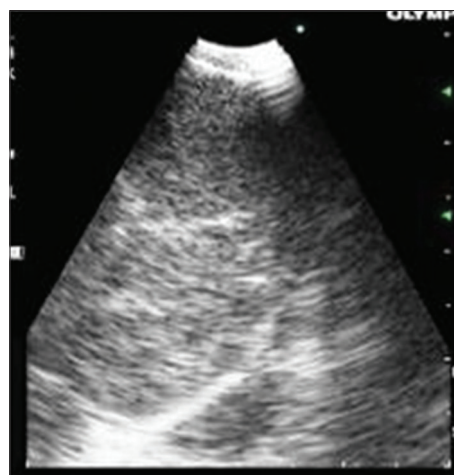


Figure 3: The images from endobronchial ultrasound: subcarinal hypoechoic lymph node with unruffled borders

is a minimally invasive procedure can be the first step for patients with suspected lymphoma but negative results, especially for HL, must be reevaluated by mediastinoscopy because it is difficult to detect Reed-Sternberg cells in fine-needle aspiration biopsies and

also larger sample size can be beneficial for flow cytometry and immunohistochemical staining.^[5] We also managed to reach the diagnosis of HL by EBUS-TBNA.

EBUS-TBNA can be performed with rigid bronchoscopy in some special cases requiring a secured airway for performing additional therapeutic procedures. Ozkan *et al.* reported that EBUS-TBNA with rigid bronchoscopy, jet ventilation, and general anesthesia was performed efficiently and safely in 105 cases.^[6] We performed EBUS-TBNA with the same technique because of the accompanying hamartoma which was extracted by cryobiopsy in the first place. The patient was recovered from hamartoma and was diagnosed as HL in the same session.

To our knowledge, the coincidence of endobronchial hamartoma (EH) and HL has not been reported before. A few cases of lung cancer concomitant with EH were reported to raise awareness for excluding a metastatic lesion to conduct correct treatment.^[7,8]

Despite high recurrence rates, bronchoscopic methods including mechanical resection, laser, cryotherapy, and argon plasma coagulation are considered as the first choice for the treatment of EH. As repeated bronchoscopic management is effective with less morbidity, surgical resection must be an alternative for the patients with end-stage lung damage.^[9,10]

Conclusion

The usage of different bronchoscopic techniques in this unique coincidence of EH and HL resulted in treatment and diagnosis of these diseases, respectively. This case report represents the importance of patient-tailored approach in interventional pulmonology.

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Conflicts of interest

There are no conflicts of interest.

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