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CASE REPORT

UNCORRECTED PROOF

Primary Lymphoepithelioma-Like Carcinoma of the Lung

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SUMMARY

Primary lymphoepithelioma-like carcinoma (LELC) is a rare tumor of the lung. LELC may also be seen in the nasopharynx, salivary glands, stomach, or thymus. These tumors are often associated with Epstein-Barr virus infection. Patient presenting with left hilar fullness and peripheral nodule in the left lung was admitted to our clinic for diagnostic examination. Postoperative histopathological results of sample confirmed diagnosis of LELC of the lung. LELC is classified as subtype of non-small cell lung cancer; however, prognosis is better than non-LELC type of non-small cell lung carcinoma. Presently described is a case of this rare disease.

Keywords: Lung cancer; lymphoepithelioma-like carcinoma.

Introduction

Primary lymphoepithelioma-like carcinoma of the lung (LELC) was reported by Begin et al. for the first time in 1987. It is a rare tumor with a prevalance ranging between 0.87% and 3.6% of the other malignancies of the lung and has been classified as a subgroup of large cell carcinoma.[1,2] LELC is usually observed in the nasopharyngeal region. It has also been described in organs originating from the foregut including oral cavity, salivary glands, lungs, stomach and thymus.[3] It has better prognosis compared to other malignant lung tumors.[4] Ebstain-Barr virus infection is thought to have a key role in tumor genesis. EBER (EBV early RNA) directed to Ebstein Barr virus RNA is typical for LELC.[5] Treatment consists of surgical resection. There is no sufficient data supporting the role of adjuvant treatment.

Case Report

A 45-year-old woman presented with left hilar enlargement and nodule in the left lower zone on posteroanterior lung graphy (Figure 1). Her personal and familial history revealed no previous disease. Physical examination and preliminary laboratory findings were normal.

Thorax computarized tomography revealed a left hilar lesion, 30x28 mm in diameter, that could be either a mass lesion or a lymph node, and a nodular lesion with irregular borders with a size of 18x16 mm in the superior segment of the left lower lobe (Figure 2).

PET CT revealed intensively increased FDG uptake in the left hilar mass (SUV MAX 15.3) and FDG uptake in the nodule localized in the left lower lobe (SUV MAX 8.8). Transbronchial needle aspiration biopsy was performed to the hilar lesion under guidance of

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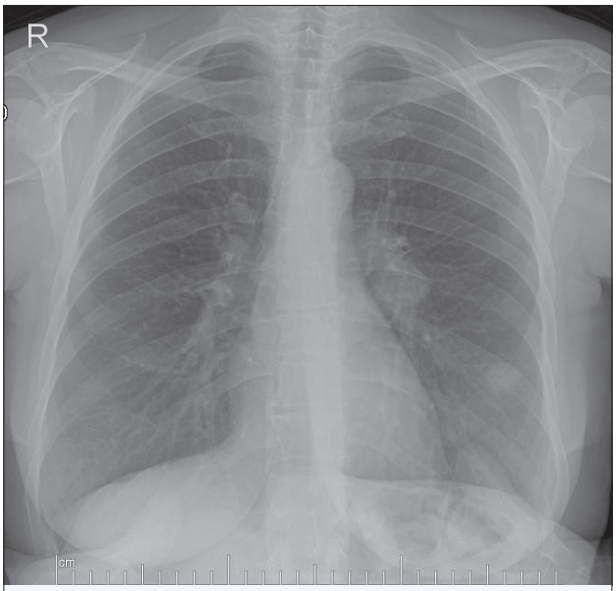

Fig. 1. Left hilar enlargement and nodule in the left lower zone on PA lung graphy.

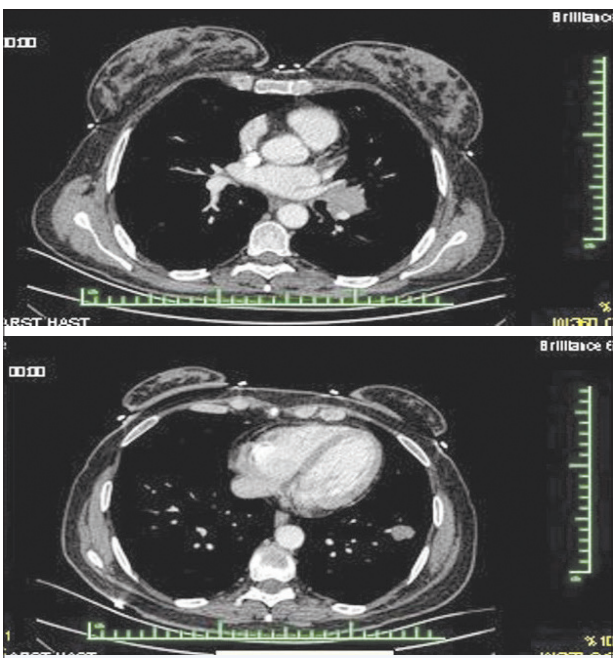

Fig. 2. Appearance of hilar lynmph node and nodule on thoracal CT.

convex probe endobronchial ultrasonography (CP-EBUS) (Figure 3).

Pathological examination of the biopsy material was reported as non-small cell lung carcinoma and considered grade 2A. Since there was no distant metastasis on PET-Ct and Cranial MRI, left-sided pneumonectomy was performed. Polygonal epitheloid tumor cells with large nuclei were observed inside an intense population of lymphoplasmacytic cells on pathological examination (Figure 4) and EBER was found positive (Figure 4). The findings were compatible with LELC.

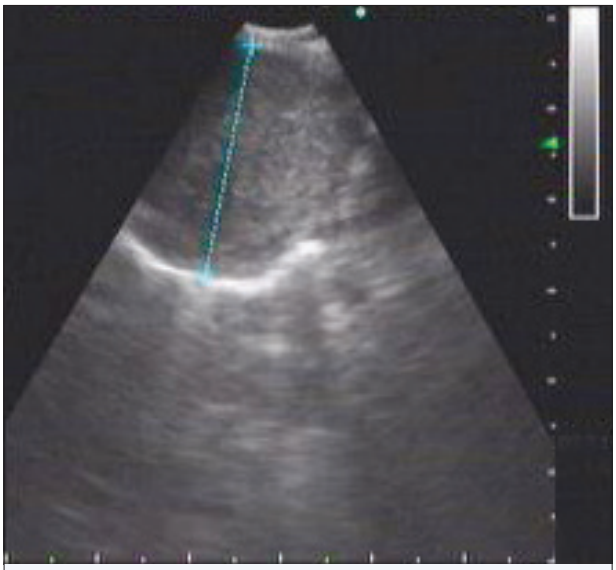

Fig. 3. EBUS-TBIA from the area number 11 on the left side.

Nasopharyngeal examination of our patient was normal. Serologic tests were performed and EBV VCA IgM was negative and EBV VCA IgG and EBNA IgG were positive. Six courses of carboplatin and paclitaxel were administered following surgery. The patient is still in remission.

Discussion

Primary LELC (lymphoepithelioma-like carcinoma of the lung) occurs considerably rare and it is differentiated from large cell indifferentiated carcinoma of the lung as a histological entity.[2] It occurs with an equal frequency in males and females. It affects the young population with no smoking history with a higher rate.[6] The relationship of the tumor with EBV shows a significant geographic and ethnic variability. While its relationship with EBV is substantially strong in Asian people, this relationship has not been observed in Caucasians.[7] Our patient who had no previous history of smoking was serologically evaluated in terms of EBV infection and EBV VCA IgM was negative and EBV VCA IgG and EBNA IgG were positive. It is difficult to differentiate primary LELC and metastasis of nasopharyngeal cancer histologically. Therefore, patients should be clinically examined and investigated further

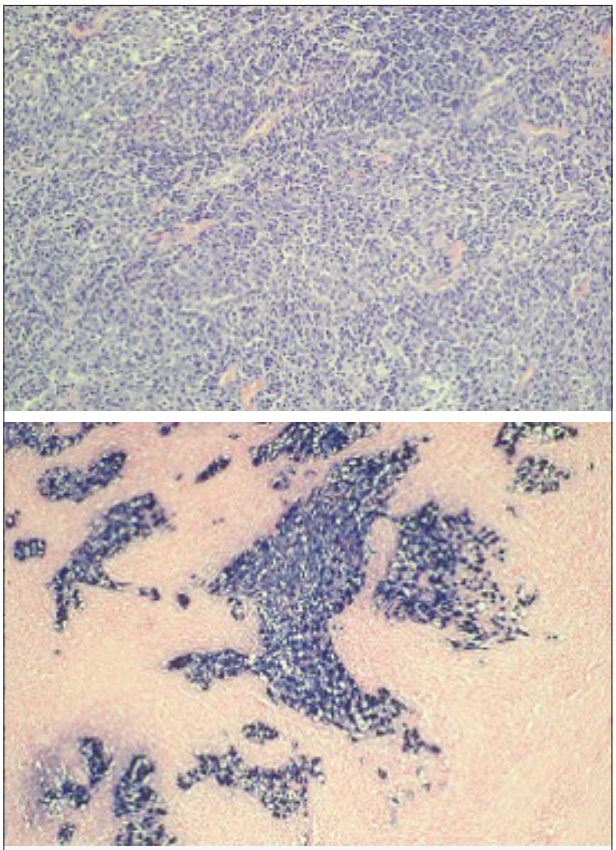

Fig. 4. Polygonal epitheloid tumor cells with large nuclei inside an intense population of lymphoplasmacytic cells H&E x200; EBER positivity.

in terms of nasopharyngeal cancer.[7] Physical examination and PET/CT of the nasopharnyx were normal. It was reported that primary LELC frequently presented as a peripheral nodule with irregular borders with a size of 3.5 cm or smaller and did not lead to lymphadenopathy in the clinicopathological studies of Han et al., Hoxworth et al. and Chan et al.[4,8,9] In the study of Ooi et al., it was observed that it presented as a large thoracic mass with regular borders in the 1/3 central part of the lungs and lymphadenopathy accompanied. [10] Interestingly, the nodular lesion with irregular borders was localized more peripherally in our patient, but lymphadenopathy was also present.

The histopathological differential diagnosis of the tumor includes poorly differentiated carcinoma, malignant melanoma and malignant lymphoma. Presence of mixed type inflammatory cell infiltration associated with absence of monoclonality in the lymphoid cells on histopathological examination is important in differentiating LELC fom other lymphoid malignancies. It is considerably difficult to make a diagnosis of LELC, because it is observed very rarely in small biopsy samples which represent a very small part of the tumor considering lung malignancies which demonstrate a heterogeneous structure.[2] In some case reports, it has been reported that a definite diagnosis of LELC is made by way of large excision or post-operative tissue-based sampling in the presence of a lesion which is interpreted as undifferentiated non-small-cell carcinoma by needle biopsy.[11,12] Among various diagnostic methods, EBER positivity is the most specific and considerably highly sensitive method for differentiation of LELC from other lung malignancies.[11] Our patient was primarily diagnosed with non-small-cell lung carcinoma by EBUS-TBNA, surgery was performed and the histopathological diagnosis was found to be compatible with LELC. The diagnosis was supported with EBER positivity. Treatment strategies are still controversial since it is observed rarely. LELC is sensitive to chemotherapy and radiotherapy. Generally, radical surgical treatment is performed in early stage disease and surgery and chemoradiotherapy combination is performed in local advanced or metastatic disease. Platinum-based chemotherapy regimens may be administered. EGFR and ALK expression in LELC is considerably rare and target-specific threatment regimens are not beneficial. New studies are needed for new treatment modalities.[13–16] Six courses of platinum-based chemotherapy were administered following surgery in our patient. At the present time, she is in remission and being followed up.

In conclusion, LELC is a very rare subtype of non-small-cell lung carcinoma. Histologically, it is difficult to differentiate primary LELC from metastatic nasopharyngeal carcinoma. All patients should be investigated for nasopharyngeal cancer, when LELC is found. Its prognosis is better compared to non-small-cell carcinoma. Surgical resection procedures should be applied, if patients are clinically operable.

Disclosure Statement

The authors declare no conflicts of interest.

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