An Unusual Tumour of the Lung: Lymphoepithelioma-Like Carcinoma

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Abstract

A 22-year-old male patient admitted to the hospital with a left hilar mass and pleural effusion was diagnosed as lymphoepithelioma-like carcinoma (LELC) of the lung, which is an unusual tumour most commonly seen in Asians. The patient had stage IIIB disease with metastatic paraaortic lymph node and pulmonary vein involvement. He received chemo-radiotherapy. Sequential radiotherapy in combination with three cycles of cisplatin and 5-fluorouracil was given. The patient was alive and active four years after the diagnosis.

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Introduction

Lymphoepithelioma is an undifferentiated carcinoma which occurs mainly in the nasopharynx. Carcinoma showing identical morphologic features with nasopharyngeal lymphoepithelioma are also encountered in multiple organs including thymus, skin, salivary glands, stomach and lung and these tumours are labelled as "lymphoepithelioma-like carcinoma" (LELC) (1-5). In the histologic classification of lung tumours of the World Health Organization, primary LELC of the lung is included as a separate subtype under variants of large cell carcinoma (6). These are extremely rare tumours mostly seen in Asian patients (7). Surgery is the treatment of choice in local disease, but there is no standard treatment modality in locally advanced and metastatic LELC of the lung. The information is limited and these tumours are thought to be both radio and chemosensitive (8).

We report a patient with stage IIIB LELC of the lung who was treated with combined chemotherapy and radiotherapy.

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Case Report

A 22-year-old male patient was admitted to our hospital with pleuritic chest pain on the left side which had started five days ago. He was hospitalized because of a history of pneumonia a year before. The patient was a light smoker (1.5 pack years).

Physical examination revealed diminished breath sounds in the left lung. Inspiratory crackles were heard on the left on auscultation.

Laboratory findings were: Hb: 13.2 g/dl, Htc: 40.8%, WBC: 14 200/mm^3, platelets: 529 000/mm^3, sedimentation rate: 65 mm/hr.

Chest radiography and computed tomography revealed a left hilar solid mass, obliterating the left lower superior and lingular bronchi, invading the costal pleura and causing pleural effusion (Figure 1).

The pleural effusion was an exudate. Biochemical analysis results were: LDH: 223 IU/dl, glucose: 96 mg/dl, total protein 4.7 g/dl, albumin 2.7 g/dl. Cytology of the pleural fluid revealed mixed inflammatory cells and proliferating mesothelial cells.

An endobronchial lesion with a vascularized smooth surface located in the lower bronchus was seen by flexible bronchoscopy. Forceps biopsy of the lesion was performed but was not helpful for a diagnosis. The procedure was performed again by rigid bronchoscopy.

Histopathology of the biopsy specimen revealed that the bronchial mucosa was infiltrated by lymphoid cells. Among these inflammatory cells, the tumour grew in the form of syncytial islands. These tumour cells had ovaloid nuclei and prominent nucleoli. The tumour cells showed positive staining with pancitokeratin, negative with thyroid transcription factor and CD 45 (Figure 2A-B). The diagnosis was LELC of the lung. The specimens were reevaluated by pathologists at two different centres and they confirmed the diagnosis.

Nasopharyngeal examination including punch biopsies and computed tomography was carried out. Nasopharyngeal LEC was excluded. Whole body bone scan was normal.

Thoracotomy was performed, but the tumour could not be resected because of pulmonary vein invasion. Biopsies taken during thoracotomy showed metastatic lesions in paraaortic lymph nodes. The patient was evaluated as T4N2M0 stage IIIB disease. Combined chemoradiotherapy to include sequential radiotherapy in combination with three cycles of cisplatin 100 mg/m^2 on days 5 was planned (Figure 3). Fluorouracil 1 g/m^2 on day 1 to 5 was given.

Partial response was achieved. Pleural effusion disappeared. The patient was still alive and active four years after the diagnosis.

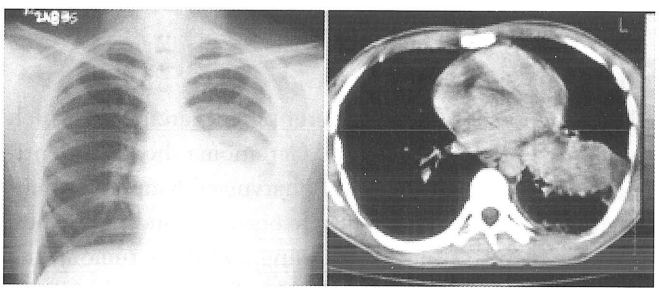

Figure 1. Chest radiography and computed tomography at the edmisson.

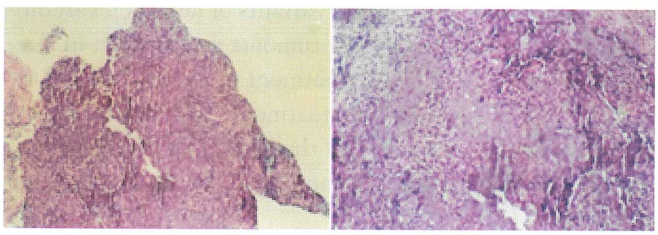

Figure 2 A. Intense lymphoid infiltration and tumor cells forming synsitial islands. B. Pancytokeratin positivity of tumor cells.

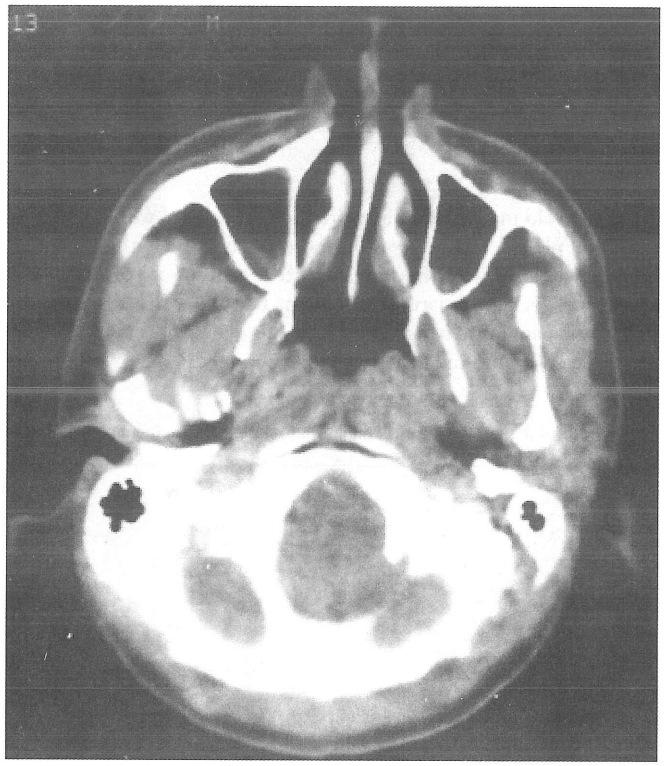

Figure 3. Normal nasopharyngeal computed tomography.

Discussion

LELC of the lung is an uncommon epithelial tumour. Limited information is available in the literature. The tumour occurs in higher freguency in Asians compared with Western patients. The patients are usually young nonsmokers (9).

Chan et al presented the clinicopathologic features of LELC in 11 patients. Most of these patients had discrete tumour lesions, four had coin lesions. Major bronchus involvement and pleural effusion were uncommon in this report (10).

Histologic pattern is typical in LELC. The tumour is composed of undifferentiated epithelial cells showing a typically

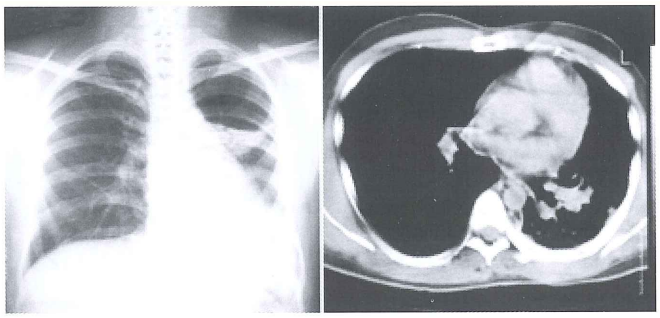

Figure 4. Chest radiography and computed tomography after four years.

syncytial growth pattern with intense lymphoid infiltration. It is closely related with Ebstein Barr virus (EBV) infection, especially in Asian patients. EBV encoded small RNA (EBER), latent membrane protein and viral capsid antigens can be detected by *in situ* hybridization and immune histochemistry techniques (9,11). Han et al found EBER positivity in 94% of cases with LELC of the lung. Also they reported correlation of serum EBER levels and clinical course (12). There are controversies among findings on LELC of the lung in western countries. Castro et al stated that there was no association between EBV and LELC of the lung in western populations. In their study all patients were negative for EBV.

Pulmonary LELC has better prognosis than non LELC in all stages, as shown in a study comparing 2 and 5 years overall survival rates in pulmonary LELC and non LELC patients (12). LELC in the nasopharynx is a highly radiosensitive disease that is also increasingly being recognized as chemosensitive (14-15). Since LELC of the lung shares similar pathological features with nasopharyngeal LELC, these tumours may also be chemosensitive and/ or radiosensitive. Regimens including 5-Fluorouracil and cisplatin or carboplatin are being used (8-12).

Chan et al evaluated 7 patients with LELC of the lung with advanced disease for response to chemotherapy with 5-FU 1 g/m^2 on days 2 to 4 and cisplatin 100 mg/m^2 and found a partial response in 71.6% of the patients (10).

Ho et al reported 3 Chinese patients with focally advanced and metastatic disease who were treated with combined chemo and radiotherapy including 5-FU and found this treatment modality effective (8).

We report this case because he was one of the few cases of this rare condition. He had stage IIIB disease with mediastinal lymph node pulmonary vein involvement and a suspicious pleural exudative effusion. He responded well to combined chemotherapy and radiotherapy and he was still alive and active four years after the diagnosis.

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