CASE REPORT

Post-tuberculosis Pneumocytoma

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ABSTRACT

Pneumocytoma is a rare benign tumor of the lung that usually manifests as a solitary pulmonary nodule. A 69-year lady, who had history of tuberculosis treatment 20 years ago, admitted to the hospital. A round mass was seen on chest radiography. Thorax computed tomography was reported as a round lesion in the left lung. Fiberoptic broncoscopy, computed tomography-guided fine-needle aspiration cytology and intraoperative frozen section analyses were undiagnostic. We performed wedge resection with minithoracotomy. Pathologic examination was reported as pneumocytoma. The patient did not receive any chemotherapy or radiotherapy after the operation. After 41 months' follow-up, no recurrent lesion was seen.

Key Words: *Pulmonary sclerosing hemangioma, Lung neoplasm, Thoracotomy, Positron emission tomography, Computed tomography.*

INTRODUCTION

Pulmonary Sclerosing Hemangioma (PSH) is a rare benign tumor of the lung with low prevalence.[1,2] The etiology and pathogenesis of PSH are still unclear. Although the name suggests a vascular tumor, most authorities thought that PSH is related to type II pneumocytes in pulmonary epithelium, so it is named as pneumocytoma, sclerosing pneumocytoma or papillary pneumocytoma have been suggested alternatively.

Most of the patients are asymptomatic. The most common presenting form is solitary pulmonary mass on chest radiograms. We reported a case with this rare benign lung tumor.

CASE REPORT

A 69-year lady, who presented with one-month history of cough, sputum and upper left back pain, admitted to hospital. The patient had the history of tuberculosis treatment 20 years ago. The chest X-ray showed a round mass lesion localised suprahilar and upper paracardiac area in the left lung. Thorax computed tomography (CT) was reported as a well circumscribed round lesion located in the apicoposterior segment of the left lung and distal to the arcus aorta (Figure 1-A). The tumor was 35x29 mm in diameter. No endobronchial lesion was seen in fiberoptic bronchoscopic (FOB) examination. FOB biopsy material was reported as normal with no malignant or tuberculosis cell histology. Maximum standardised uptake value (SUVmax) of the lesion was reported as 2.9 on Positron Emission Tomography Computed Tomography (PET/CT). She underwent computed tomography-guided fine-needle aspiration biopsy (CT-FNAB) for the lung lesion. The pathology of FNAB was reported as chronic inflammation. The patient was referred for open lung biopsy.

Physical examination, and laboratory and biochemical analysis were normal. During the operation, the lesion was not seen with VATS, since it was an intraparenchymal lesion. Left lateral minithoracotomy was performed and tissue was submitted for frozen section (FS). Since FS was non-diagnostic, the mass lesion, 3x3x2 cm in diameter, was resected with wedge resection and was submitted for pathologic examination. She was discharged without any complications on the seventh postoperative day.

The pathological examination of the specimen was reported as the tumor was composed of a large number of cystic cavities filled with erythrocytes and papillary structures (Figure 1-B). In the immunohistochemical examination, positive staining with TTF-1 and EMA was observed in cells in solid areas besides cystic cavities and cells lining papillary structures. Tumor cells in solid areas were stained with Vimentin. Focal staining with Progesterone Receptor (PR) was observed in tumor cells and no staining was observed with other antibodies (Figure 2A). Based on the histomorphological and immunohistochemical examinations, the tumor was diagnosed as pneumocytoma.

The patient did not receive any chemotherapy or radiotherapy after the operation, and no recurrence had been detected on control chest X-ray of the patient at 41st month after the operation (Figure 2B).

DISCUSSION

Pneumocytoma is first described by Liebow and Hubell and named sclerosing hemangioma. Recent studies implicate that the tumor is of epithelial origin, specifically type II alveolar pneumocytes since it was thought to be of vascular origin due to prominent angiomatoid features.[1]

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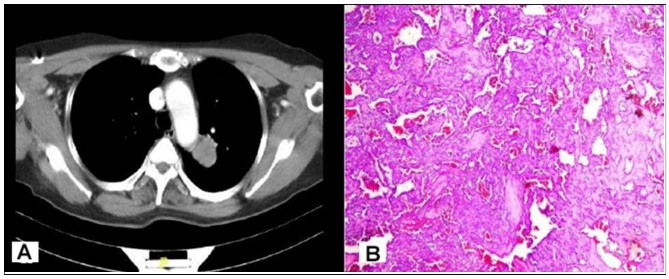

Figure 1: (A) Thorax CT of patient. **(B)** Histopathologic view of tumor consisting of cystic cavities filled with erythrocytes, papillary structures, and solid areas. (Hematoxylin and eosin staining, HE x 40).

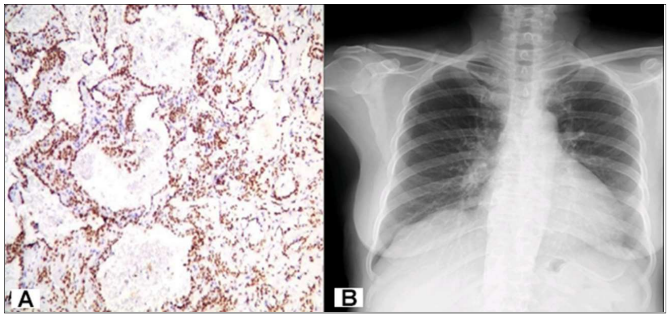

Figure 2: (A) Staining with TTF-1 positively in tumor cells. (Thyroid transcription factor staining, TTF-1x100). **(B)** Control chest X-ray of patient after 41 months.

Pneumocytoma is composed of papillary, hemangiomatous, solid and sclerotic components. One of these components predominates in tumor. This case was predominantly the papillary type. Immunohistochemical studies, such as staining with TTF-1 and EMA in both the surface cells and round cells in the majority of the cases, support the tumor is of epithelial origin.

Pneumocytoma is usually seen in elder people, especially in the fifth decade. It occurs usually in women. The male-to female ratio is 1:5.[2] This patient was positive for PR. Lots of studies have shown that both estrogen and progesterone receptors were positive. It can be thought that there can be a relationship between tumor and gender. Most patients are asymptomatic. Although a small number of patients have respiratory symptoms such as cough, sputum chest or back pain, this patient had those symptoms.

Pneumocytoma usually manifests as an isolated round, well-defined homogenous pulmonary nodule on routine chest X-ray. It can be confused with other benign or part of malignant nodules.[3] Thorax CT evaluation of lesions can be described as varying density areas; therefore, CT findings cannot be diagnostic preoperatively. Calcification has been reported in a few cases.[4] FOB is undiagnostic. Although lymph node involvement is rare, a few cases have been reported.[5] Histopathologic examination is needed for diagnosis. Surgical resection with VATS or thoracotomy is the treatment of choice. During operation, FS examination can be helpful to prevent unnecessary resection of lung; but in our case, FS was undiagnostic, therefore we performed wedge resection to protect the lung parenchyma from unnecessary resection.[6] In literature, there are segment or lobe resection cases. If it is suspected as malignant tumor, lung lobe resection can be performed. After surgery, the prognosis is very favorable.

Histopathologic examinations should be performed since thorax CT, FOB even PET/CT, can be undiagnostic. Wedge resection, and segmentectomy can be performed and after resection prognosis is excellent.

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