Received: 11 March 2021 | Accepted: 2 April 2021

DOI: 10.1111/1759-7714.13970

CASE REPORT

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Large pulmonary sclerosing pneumocytoma in a young female: A rare lung tumor

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Abstract

We report a case of a 28-year-old female who presented with a solid mass lesion in the right middle lobe (RML). A chest computed tomography (CT) scan showed a 3.5 cm sized round and solid mass between the medial and lateral segment of the RML. The patient underwent a percutaneous lung biopsy with CT scan guidance and pathological examination showed pulmonary sclerosing pneumocytoma. RML lobectomy was performed for definitive treatment. Here, we describe this rare lung disease which presented as a large homogeneous lesion. Pulmonary sclerosing pneumocytoma should be considered in the differential diagnosis of solitary lung tumor, even if the patient is young.

KEYWORDS

lung tumor, pulmonary sclerosing hemangioma, sclerosing pulmonary pneumocytoma

INTRODUCTION

Pulmonary sclerosing hemangioma, first described in 1956, is a rare benign lung neoplasm predominant in middle aged females. Pulmonary sclerosing hemangioma may be confused with malignant lung tumor because there are difficulties in the differential diagnosis. This report describes a case of pulmonary sclerosing hemangioma in a young female, which was treated by surgical resection.

CASE REPORT

A 28-year-old female with an unremarkable past medical history presented to our clinic with a pulmonary mass which had been found on routine chest computed tomography (CT). A chest CT demonstrated a well-marginated, round, solid mass lesion about 3.5 cm in size in the right middle lobe (RML) between the medial and lateral segmental bronchi (Figure 1). A preliminary diagnosis of a benign lung tumor was made, which was established on the basis of the distinctive features on the CT scan. However, a malignant lung tumor could not be completely excluded. The patient underwent a percutaneous lung biopsy using chest CT scan guidance. On histopathological examination, the tumor was confirmed to be a pulmonary sclerosing pneumocytoma. Given the location of the nodule and her normal PFTs, RML lobectomy was planned. She underwent single port video-assisted thoracoscopic surgery (VATS) for RML

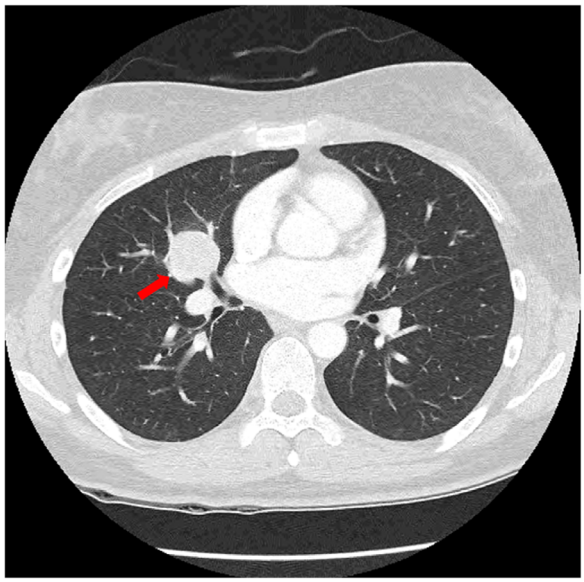

FIGURE 1 Chest computed tomography scan shows a well marginated, round, solid mass lesion about 3.5 cm in the right middle lobe between the medial and lateral segmental bronchi (arrow)

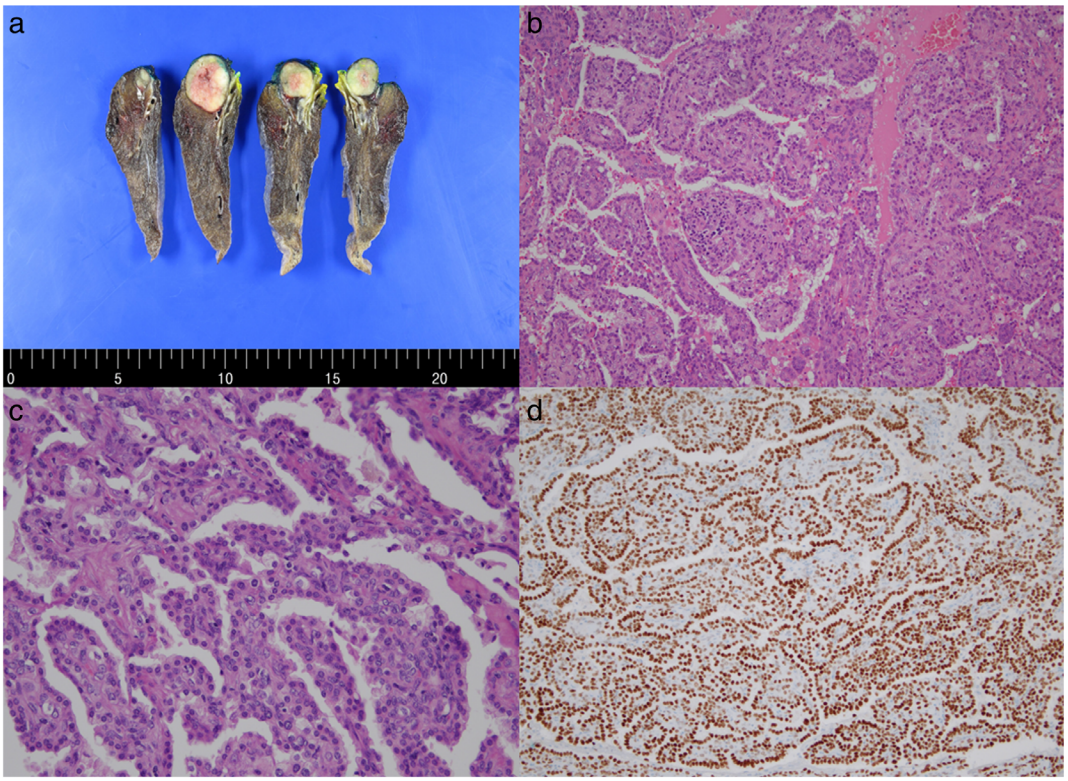

FIGURE 2 (a) Gross photograph of a sclerosing pneumocytoma shows a tan-yellow to gray solid cut surface with foci of hemorrhage. (b) Microscopically, the tumor exhibits a predominantly papillary pattern with blood-filled interpapillary spaces. (c) On high magnification view, the papillae are lined by bland cuboidal cells resembling type II pneumocytes (surface cells) and papillary cores are comprised of polygonal cells with abundant cytoplasm (round cells) and sclerotic stroma. (d) Immunohistochemistry for TTF-1 is positive in both surface and round cell components

lobectomy and mediastinal lymph node dissection. There were no pleural adhesions, and the lung movements were not limited. The mass was located close to the middle lobe pulmonary artery, but could be cut and a clear margin achieved. Dissection of lymph node stations 2R, 4R, 7, and 10R was performed. There were no other special events during surgery. The lesion showed a well-demarcated mass, measuring 2.5 × 2.5 × 2.2 cm. The gross and microscopic features and results of immunohistochemistry analysis of the resected lesion are shown in Figure 2. The findings were consistent with the characteristics of pulmonary sclerosing pneumocytoma. There was no lymph node metastasis. The patient had an uneventful postoperative course and was discharged on postoperative day. The patient provided their written informed consent for publication of clinical details and images.

DISCUSSION

Since the first report in 1956 by Liebow and Hubbell, pulmonary sclerosing pneumocytoma has been considered to be a relatively rare, benign pulmonary lesion consisting of two cell types; cuboidal surface cells and stromal round cells, which consist of four major histological patterns; hemangiomatous, papillary, sclerotic, and solid.[1,2] The immunohistochemical staining pattern is positive for TTF1 and EMA.[3] It was reclassified from the previous category of miscellaneous tumors in the 2015 World Health Organization classification, and its name was changed from sclerosing hemangioma to sclerosing pneumocytoma. Patients are usually asymptomatic and it is detected incidentally. There is a female preponderance and peak incidence in the 50s.[2,4] Our patient was in the third decade. Although there is no definitive diagnostic radiographic findings, an imaging study such as chest CT scan usually reveals a round, solitary, well-circumscribed, homogeneous nodule.[5] A few studies have investigated the use of 18F-fluorodeoxyglucose positron emission tomography for the diagnosis of pulmonary sclerosing pneumocytoma.[6,7] Almost all tumors are benign and malignant findings such as lymph node metastasis are reported to occur in approximately 1% of patients. Surgical resection is the treatment of choice for a sclerosing pneumocytoma because there have been no reports of recurrence in the literature. Lymph node dissection should be considered for huge tumors because lymph node metastases correlate with a larger tumor size.[3,8] Radiotherapy has also been suggested as an alternative treatment for inoperable patients.[9] Although it is a rare disease, our report serves as reminder that pulmonary sclerosing pneumocytoma should be considered in the differential diagnosis of a solitary lung tumor, even in a young female patient.

CONFLICT OF INTEREST

The authors report no conflicts of interest.

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How to cite this article: Kang DK, Kang MK, Heo W, Hwang Y-H, Kim JY. Large pulmonary sclerosing pneumocytoma in a young female: A rare lung tumor. *Thorac Cancer*. 2021;12:1909–1911. https://doi.org/10.1111/1759-7714.13970