Localized Fibrous Mesothelioma with Bronchogenic Carcinoma

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We report a case of localized fibrous mesothelioma (LFM) of the pleura with bronchogenic carcinoma. LFM arose in the visceral pleura of the upper lobe in the left lung, and lung adenocarcinoma was located in the ipsilateral lower lobe. LFM is a rare mesenchymal tumor of the pleura. Concomitant occurrence with bronchogenic carcinoma has not been previously reported in the English literature.

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Introduction

Localized fibrous mesothelioma (LFM) is a well-described unusual pleural tumor. Though this lesion may recur, its behavior is biologically benign and clearly different from malignant mesothelioma. The tumors are usually discovered as asymptomatic lesions on routine chest radiographs. LFM continues to be a diagnostic problem for physicians, because the final diagnosis must be based on the findings of a pathologic examination. We describe a patient with LFM, which arose in the visceral pleura of the left upper lobe with lung adenocarcinoma of the ipsilateral lower lobe.

Case Report

A 59-year-old man was admitted to our hospital on July 2, 1992, with abnormal shadows on a chest radiograph. He had no history of asbestos exposure. The chest radiograph showed two abnormal shadows: one located in the left upper lung field, and another in the left lower lung field (Fig. 1). Chest CT revealed that the upper shadow was a pleural-based, sharply-defined mass in the left upper lobe, and that the lower shadow was an ill-defined nodule with pleural indentation in the lower lobe (Fig. 2).

On transbronchial biopsy, the lower shadow was confirmed to be a well-differentiated adenocarcinoma. However, we were not able to approach the upper shadow. Transthoracic aspiration cytology of the upper lesion was negative. On July 23, 1992, an operation was performed. A white pediculated tumor 4 x 3 x 1 cm arose in the anterior visceral pleura of the upper lobe. The tumor was resected, and left lower lobectomy was performed. Pathological analysis revealed that the pleural tumor contained strands of spindled cells in a collagenous background with little anaplasia and mitosis. Tumor cells were immunohistochemically positive for vimentin. These findings are compat-

Figure 1. Chest radiograph showing two abnormal shadows on the left lung field.
Fibrous Mesothelioma with Lung Cancer

Subsequently, bronchogenic carcinoma recurred, and on October 8, 1995 the patient died of respiratory failure. At autopsy, multiple metastases of the lung cancer were found, but recurrence of LFM was not recognized.

Discussion

Localized fibrous mesothelioma most frequently arises in the pleura, but has also been observed in the pericardium and peritoneum. In contrast to diffuse malignant mesotheliomas, there is no association of LFM with asbestos exposure.

Early investigators considered that LFM originated from mesothelial cells (1). However, recent immunohistochemical and ultrastructural studies have shown that the tumor might be derived from submesothelial mesenchymal cells (2, 3). Therefore, some pathologists favor the term “localized fibrous tumor of the pleura” rather than localized mesothelioma. Bilbey et al reported a case of localized fibrous mesothelioma of the pleura following external ionizing radiation therapy (4). Their case demonstrated an association between external ionization radiation and the subsequent development of both LFM and breast carcinoma. However, the causes of LFM were not clear in most cases.

Large series reports have shown that about half of the patients with LFM have been asymptomatic and only had abnormal shadows on chest radiographs (2, 5). Although some investigators have reported the usefulness of enhanced CT, it has been difficult to obtain a pre-operative diagnosis (6, 7). In this way, recent advances in thoracoscopy are proving to be useful for both diagnosis and treatment (8, 9). Nakamura et al reported a case of thoracoscopic resection for benign localized mesothelioma (10).

In this patient, we were not able to make a precise pre-operative diagnosis. However, the CT findings showed that the upper shadow was a sharply circumscribed mass, which was suspected of being a benign tumor. On the presumption of a benign tumor with bronchogenic carcinoma, we performed an operation. Since he had no previous exposure to radiation and dust, we considered that this complication was coincidental. A

Figure 2. Top: CT of upper lungs showing a pleural-based, sharply-defined mass. Bottom: CT of lower lungs showing an ill-defined nodule with pleural indentation.

Figure 3. Left: The pleural tumor consists of spindled cells in a collagenous background (HE stain, ×200). Right: In the bronchogenic carcinoma, tumor cells produce an acinar structure (HE stain, ×200).
benign lung tumor occurring simultaneously with bronchogenic carcinoma, may be difficult to differentiate from metastasis.

To our knowledge, this is the first report of a localized fibrous mesothelioma arising with bronchogenic carcinoma.

References


