Intrapulmonary Solitary Fibrous Tumor Masquerade Sigmoid Adenocarcinoma Metastasis

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Solitary fibrous tumor is a rare spindle cell mesenchymal tumor entity, with either benign or malignant behavior that cannot be accurately predicted by histological findings. An intrapulmonary site of origin is even rarer. We report a case of a 51-year-old woman in whom an abnormal nodule in the lower right lung was detected during staging for sigmoid adenocarcinoma. The nodule was excised and pathological examination revealed an intrapulmonary solitary fibrous tumor.

Key words: 1. Solitary fibrous tumors 2. Lung neoplasms 3. Video-assisted thoracic surgery

CASE REPORT

A 51-year-old Caucasian female was referred to our institution because of an abnormal nodule detected in her right lung. This had at first been detected four months earlier when she underwent an urgent Hartmann procedure due to refractory adenocarcinoma of the sigmoid colon (pT4N1 stage). Due to the urgency of the surgery, the patient was not staged prior to the surgery but was initially staged after the operation. The only pathologic finding in the computed tomography (CT) of the lung was a nodule in the lower right lobe of 2.5 cm at its longest dimension (Fig. 1), and the patient was staged as cT4N1M1. She received 4 cycles of chemotherapy for the sigmoid adenocarcinoma before she was referred to us for excision of what was believed to be a single metastatic nodule. Although the radiologic findings supported a benign tumor, neither positron emission tomography-CT nor any other procedure to attempt to diagnose the nodule was performed due to the patient’s willingness to undergo complete removal of the mass even if it were benign. The patient underwent video-assisted thoracoscopic (VATS) wedge excision of the tumor. She had an uneventful postoperative course and was discharged on the 4th postoperative day.

The specimen of the resected lung contained a firm intrapulmonary white-colored well-defined mass with dimensions of 2.5×2.3×2.2 cm. Microscopically, the tumor had a “patternless pattern,” with proliferation of bland spindle cells in alternating hypocellular and hypercellular areas, accompanied by a collagenous stroma (Fig. 2A) with branching hemangiopericytoma-like vessels (Fig. 2B). The tumor had no evidence of increased mitotic activity (0 to 1 mitoses per 10 high power fields using an Olympus BH-2 microscope, with a 40× field, 0.5 mm diameter, and area of 0.196 mm²), any...
significant atypia, or necrosis. Immunohistocemically, the tumor cells were positive for vimentin, CD34 (Fig. 2C), and Bcl-2. A few cells were also focally and weakly positive for estrogen and progesterone receptors. The index of cellular proliferation with the antibody Ki-67 is low and estimated at <1% of the cellular population. Immunohistochemistry staining of the tumor cells was negative for alfa-smooth muscle actin (SMA), muscle specific actin (HHF-35), h-caldesmon, CD117 (c-kit), S-100 protein, epithelial antigens (wide spectrum cytokeratins [AE1/AE3] and epithelial membrane antigen), and thyroid transcription factor-1. The resection margins were free of disease. One year after the operation, the patient is well, with no evidence of recurrent disease.

**DISCUSSION**

Solitary fibrous tumors (SFTs) were first pathologically described by Klemperer and Rabin in 1931. To the present, about 800 cases have been reported in the English medical literature [1].

SFT is the preferred term for an uncommon, but histomorphologically distinctive spindle cell neoplasm, that was identified in the past as fibrous mesothelioma, localized fibrous mesothelioma, localized fibrous tumor, localized mesothelioma, pleural fibroma, solitary fibrous mesothelioma, or submesothelial fibroma [1]. There are reports of SFTs arising either from mediastinal, diaphragmatic, or parietal pleura, or from within a lung fissure and in various extrapleural locations, such as the retroperitoneum, mediastinum, thyroid gland, nasal cavities, meninges, or parietal surfaces of the intra-abdominal viscera. The intraparenchymal or endobronchial location is a rare occurrence [1]. Less than 20 cases of intraparenchymal SFTs have been reported in the English literature [1-5]. To prove and establish the fact that these lesions are indeed of pulmonary origin, it is important to consider the clinical, radiologic, and pathologic findings to demonstrate the lack of continuity with the visceral pleura and to exclude an endophytic growth in a pleural-based lesion [1,2,4].

SFTs of the pleura and lung occur predominantly in adults. Nevertheless, there are rare cases of intrapulmonary SFTs reported in childhood [6]. They are usually found incidentally. Possible symptoms include cough, pain and dyspnea, and dig-
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Table 1. Staging system for the management and follow-up of SFT

| Stage | Description and % recurrence |
|-------|-----------------------------|
| 0     | Pedunculated tumor without signs of malignancy (<2% recurrence) |
| I     | Sessile or “inverted” tumors without signs of malignancy (<8% recurrence) |
| II    | Pedunculated tumor with histological signs of malignancy (14% recurrence) |
| III   | Sessile or “inverted” tumor with histological signs of malignancy (63% recurrence) |
| IV    | Multiple synchronous metastatic tumors |

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In conclusion, SFTs are neoplasms that usually arise from...
the pleura. An intraparenchymal or endobronchial location is a rare occurrence. Resection with clear margins is curative and final diagnosis and prognosis can be defined only after surgical resection. The prognosis of patients with rare SFTs of the lung depends on the completeness of the tumor resection. Variants of SFTs of the lung that are malignant or suspected to be malignant should be managed as lung cancer with regard to the surgical resection of the tumor and follow-up strategy.

**CONFLICT OF INTEREST**

No potential conflict of interest relevant to this article was reported.

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