Tanaffos (2005) 4(15), 57-59

A Case of Solitary Fibrous Tumor of the Pleura with Reference to its Treatment and So-Called Ambiguous Characteristics

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ABSTRACT

We experienced a case of 58-year-old female with solitary fibrous tumor of the pleura, which had been resected by the video-assisted thoracoscopic surgery for definitive diagnosis.

Solitary fibrous tumors of the pleura are rare and have confusing pathological characteristics, which have been elucidated by the advancement of the immuno-histochemical analyses.

We report the case of this ailment with reference to other relevant literature. ***(Tanaffos 2005; 4(15): 57-59)***

Key words*: Solitary fibrous tumors of the pleura (SFTPs), CD34, Malignant mesothelioma*

INTRODUCTION

Solitary fibrous tumors of the pleura are rare with confusing characteristics. Recent advancements of the immuno-histochemical staining have made their diagnosis easy. We present our experience of this rare tumor to summarize its characteristics in accordance with other relevant literature.

CASE REPORT

A 58-year-old female was referred to our department for the abnormal shadow of the right upper pulmonary field. She complained of generalized fatigue, otherwise, was in good general condition. She had smoked 3 packages per day for these 3 latter decades with no exposure to asbestos.

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Her blood chemistry showed nothing abnormal with normal range of tumor markers (CEA:1.8ng/ml, CYFRA:1.1ng/ml, ProGRP: 27.2pg/ml). The well-defined pulmonary abnormal shadow on chest X-ray was also shown to be well delineated mass on the major fissure of about 30 mm in diameter without spiculation and pleural indentation on CT scan. On F-18-fluorodeoxyglucose positron emission tomography (FDG-PET) scan, any significant uptake could not be found on the suspicious area. To diagnose definitely and, if malignancy was found, to carry on the radical operation, video-assisted thoracoscopic surgery (VATS) had been done (Figure-1). The tumor was pedunculated, located at the visceral interlobar pleura of the right upper lobe, which was successfully resected with the endoscopic

stapler. On frozen section diagnosis, benign spindle cell tumors such as schwannoma were suspected. Permanent section showed interlacing fascicles of spindle cells, revealing positivity for CD34 and negativity for cytoplasmic keratins, S-100, and desmin on immunostaining. The patient was diagnosed as a case of solitary fibrous tumor of the pleura, and has been followed-up at the outpatient section of our department without recurrence.

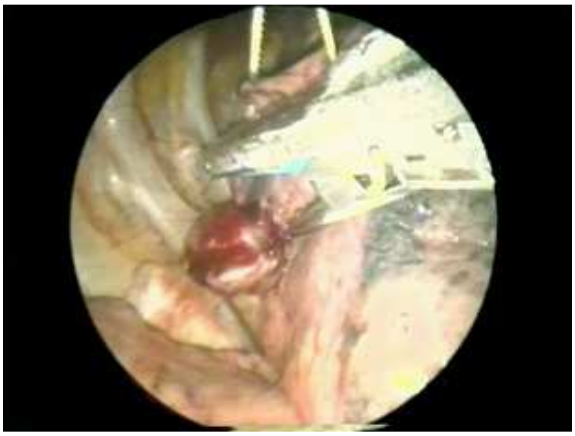

Figure 1. The tumor was resected with endoscopic stapler under VATS, of which specimen was confirmed not to be malignant by the frozen section analysis.

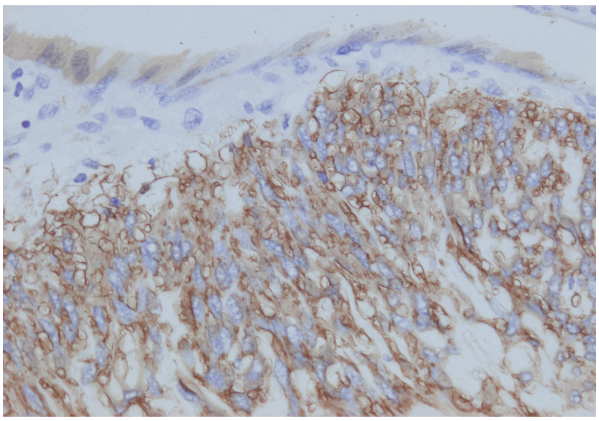

Figure 2. Immunostaining (×20) for CD34 showing the brownish-stained areas, which are consistent with the expression of CD34.

DISCUSSION

Solitary fibrous tumor of the pleura is a rare neoplasm that represents less than 5% of the tumors of the pleura, accounting for 8% of benign tumors of the chest (1, 2). In a clinical setting, the term "localized mesothelioma" had been used for this tumor due to the ambiguous characteristics about the cellular origin of this tumor (mesothelial vs. submesothelial) (2). Due to the recent advancement of immunologic markers for pathologic diagnosis, it has been made evident that the tumor originates from the submesothelial, noncommitted mesenchymal layer, which has the potential of diverse differentiation to bone, cartilage, or blood vessels, in accordance of which this tumor has been termed "solitary fibrous tumor of the pleura" (SFTP) (1, 2, 3).

Compared to the malignant mesothelioma, SFTPs usually show a good prognosis and no history of asbestos exposure is common (1, 2, 3). The incidence of SFTPs is 2.8 per 100,000 registered hospital patients with almost even sex distribution and greatest occurrence in the 4^{th} to 6^{th} decades (4). However, according to the report by Sung et al., 30.2% (19/63) of SFTPs were malignant and among these 19, 3 patients took surgical re-resection and 8 patients died due to distant metastases (1).

On CT scan, SFTPs often present as a well demarcated, lobulated mass with soft tissue attenuation, however, these findings are not enough to differentiate a benign SFTP from a malignant one (4). In our case, the tumor revealed no uptake on FDG-PET and no published reports are available concerning the typical findings of SFTPs for FDG-PET.

Sung et al reported the 80% accuracy rate of fine needle aspiration (FNA) for suspicious lesions, which led to the diagnosis as SFTPs (1). On the contrary, Scarsbrook et al. reported the case of recurrent SFTP due to the tumor seeding following

FNA, and mentioned that, if without contraindication for surgery, FNA should be avoided (5).

Differential diagnoses of SFTPs include synovial sarcoma, neurogenic sarcoma, fibrosarcoma, and malignant fibrous histiocytoma, and some of them may be diagnosed incorrectly as SFTPs (6). In our case, those differential diagnoses were successfully excluded by the immuno-histochemical findings of positivity for CD34 which is a transmembrane cell surface glycoprotein, and negativity for S-100, cytoplasmic keratins, and desmin. (Figure-2) (6).

The treatment of choice for SFTPs is complete surgical resection via thoracotomy or VATS (1, 7). Preoperative definitive diagnosis is usually difficult. To diagnose pathologically and, if the tumor had malignant components, to resect the lesion radically, the operation would be recommended either via thoracotomy or VATS. In this case, VATS was done successfully, however, according to other reports, thoracotomy approach is often employed (1, 4, 7).

CONCLUSION

We have experienced a rare case of solitary fibrous tumor of the pleura. SFTPs do not necessarily mean that they are benign neoplasm, with some malignant cases encountered in other reports. The mainstay of treatment is complete resection and a long term follow-up is necessary.

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