INTRODUCTION

Solitary fibrous tumor (SFT) of the pleura is rare, slow growing neoplasms thought to originate from submesothelial connective tissue and it is also known as benign localized mesothelioma or subserosal fibroma. SFTs are usually first discovered as asymptomatic lesions on routine chest radiographs. It is also impossible to differentiate them preoperatively from bronchial carcinoma or malignant mesothelioma. SFTs have a good prognosis although a minority may occasionally recur locally and behave in a malignant manner (1-3). We are presenting this case because it is a rare entity.

CASE

Asymptomatic 65 years old woman was admitted to our clinic with the chest mass being discovered on routine chest radiograph. The thorax computerized tomography (CT) showed a large, sharply delineated mass adjacent to the pleura at the site of the right lung. Thoracic fine needle aspiration biopsy revealed a benign histopathologic appearance. Right thoracotomy with mass resection was performed and the final diagnosis was solitary fibrous tumor of the pleura without signs of malignancy. We are presenting this case because it is a rare entity.

SUMMARY

Solitary fibrous tumor of the pleura is rare, slow growing neoplasms thought to originate from submesothelial connective tissue. It is also known as benign localized mesothelioma or subserosal fibroma. A sixty-five year old woman was admitted to our clinic with the chest mass being discovered on a routine chest radiograph. The thorax computerized tomography (CT) showed a large, sharply delineated mass adjacent to the pleura at the site of the right lung. Thoracic fine needle aspiration biopsy with the guidance of thorax CT revealed a benign histopathologic appearance. Right thoracotomy with mass resection was performed and the final diagnosis was solitary fibrous tumor of the pleura without signs of malignancy. We are presenting this case because it is a rare entity.

KEY WORDS:
Solitary fibrous tumor, pleura

Received: February 28, 2006
Accepted after revision: July 18, 2006
on a chest radiograph during a routine physical examination. Her medical history was unremarkable. She never smoked and was not on medication but she was exposed to environmental asbestos for approximately 25 years. Vital signs were normal. Lung examination showed scattered crackles at right lung bases on auscultation. The results of routine laboratory studies were normal and tumor markers (Ca19-9, CEA, AF) were found negative. A chest radiograph revealed an ill-defined opacification of the right hemithorax which obscured the two thirds of the right lung (Figure 1). A computerized tomography (CT) of the thorax showed a peripheral, 7 x 6 x 5 cm, sharply delineated soft tissue mass with a broad pleural base at the site of the right lung (Figure 2). There was no displacement of the mediastinal structures to the left and there was no sign of infiltration. Abdominal ultrasonography was found normal. Bronchoscopy findings were normal and the results of cytologic examination of the bronchoalveolar lavage fluid were negative. Transthoracic puncture and fine needle aspiration biopsy with the guidance of thorax CT revealed fibrocollagen fibers, mononuclear cells, red blood cells and benign histopathologic appearances. Despite the performance of many tests, a conclusive diagnosis was not obtained and the patient was referred for surgery. Right thoracotomy, using a standard posterolateral incision, was performed. A large capsulated, smooth tumor with a few adhesions at the anterior site of upper lobe, measuring 12 x 9 x 8 cm was removed. Macroscopically, the resected specimen was yellow colored and surrounded by a thin capsule. There was hemorrhage and cystic areas on cut surface. On the microscopic examination, the tumor was consisted of spindle shape cells. Some areas contained wire like bands of collagen. The tumor showed hemangio-péricitoma-like pattern in focal areas (Figure 3). The final diagnosis was solitary fibrous tumor without signs of malignancy. Five month clinical follow up was negative for recurrence or metastasis.

**DISCUSSION**

Solitary fibrous tumors are rare with an incidence of 2.8 cases for 100,000 registered hospital patients (4). SFTs represent < 5% of all neoplasms involving the pleura (5). They appear to arise from the multipotential subserosal cells and they are also known

---

Figure 1. Posteroanterior chest radiograph, demonstrating an opacification which obscured lower two thirds of right lung.

Figure 2. A CT scan of the thorax showing a peripheral, 7 x 6 x 5 cm, well defined soft tissue mass with a broad pleural base at the site of right lung.

Figure 3. Solitary fibrous tumor, composed of spindle shape cells (HE, x 10).
as benign localized mesothelioma, submesothelioma or subserosal fibroma (3). This tumor arises from the visceral pleura in about 70% of patients and from the parietal pleura in the remaining 30%. It can also derive from other sites with mesenchymal tissue such as the pulmonary parenchyma, pericardium, mediastinum, upper respiratory tract, peritoneum, liver, thyroid and orbit (6).

SFT can occur at any age and shows no gender predilection (7,8). Their occurrence does not appear to be related to previous asbestos exposure and smoking habits (1,9). Our patient was a 65 years old woman and she denied smoking but she was exposed to environmental asbestosis for nearly 25 years.

Over 50% of the patients with SFT are asymptomatic. The usual presentation, as described in our case, is an asymptomatic mass discovered incidentally on a chest radiograph (1,9,10). About 40% of the patients are symptomatic and the most frequent symptoms are cough, dyspnea and chest pain. Two paraneoplastic syndromes occur frequently in patients with SFT, namely hypertrophic pulmonary osteoarthropathy (HPOA) and hypoglycemia (2,11,12). HPOA is related to the abnormal production of hyaluronic acid by tumor cells and occurs in up to 20% of the patients (8,9). Two to four percentage of patients present with symptomatic hypoglycemia thought to be secondary to increased production of insulin like growth factor II (IGF-II) (8). Surgical removal of the tumor cures the HPOA and hypoglycemia (9).

SFT typically present radiographically as solitary, large, sharply delineated, round or lobulated mass located at the periphery of the lung as seen in our case. In reported cases the average diameter is 5 to 10 cm but occasionally some of these masses may be so large that they occupy the entire hemithorax and can cause clinically significant compression of the lung. In 8 to 17% of the patients, pleural effusion can be seen. A few cases with calcification have been reported (1,9,11,13).

CT scanning and magnetic resonance imaging (MRI) are important to evaluate the relationship of the tumor to neighboring structures and to evaluate the resectability of the tumor (14).

SFT of the pleura is rarely diagnosed before surgical resection as cytology obtained by transthoracic fine needle aspiration biopsy is mostly inconclusive. Because, the tumor is composed of acellular and hypercellular portions. Moreover, aspiration material mostly consists of fibroblasts, which provide no specific diagnosis. Therefore, definitive diagnosis is obtained by histology usually after thoracotomy. The microscopic picture is dominated by a “patternless pattern” with fibroblasts, collagen, and reticulum fibers haphazardly arranged or in a heman-gio-pericytoma-like pattern. Immunohistochemical analysis shows these tumors to be negative for keratin, S-100, carcinoembryonic antigen, and factor VIII, and positive for vimentin, CD34 (5,15). In our case, aspiration and tru-cut needle biopsy findings were found nonspecific. SFT was diagnosed after thoracotomy and mass resection.

About 90% of the SFTs have a benign clinical outcome but they may be malignant depending firstly on the resectability of the tumor, secondly, on its size, and then, on the mitotic count, polymorphism, and necrosis within the tumor (11).

In the series of 223 cases reported by England and associates, 82 (37%) were considered to be malignant (16). Briselli et al. reviewed 378 cases and noted that only 12% behaved in a malignant fashion (7).

Since SFTs of the pleura may rapidly enlarge and are potentially malignant, the treatment of choice should be surgical with removal of all tumoral mass. Because of possible recurrences, long term follow up is mandatory even in benign lesions (17-19). Our patient is still doing well and under follow up.

REFERENCES


Yazıma Adresi
Dilek ERNAM
Atatürk Göğüs Hastalıkları ve Göğüs Cerrahisi
Eğitim ve Araştırma Hastanesi
Keçiören-ANKARA
e-mail: dilekdr@hotmail.com

140 Solunum Hastalıkları 2006; 17: 137-140