HISTORY

The patient was a 42-year-old Hispanic woman who immigrated from Mexico 10 years before presentation. She still visited Mexico every 1–2 years. Four years earlier, she presented to an outside hospital with shortness of breath and was diagnosed with a left-sided pleural effusion (the original chest radiograph was not available for review). A sputum culture grew an atypical mycobacterium, but the species was never identified. The patient was treated for 6 months with a four-antibiotic regimen. She was a Jehovah’s Witness who had never smoked cigarettes, and she denied exposure to asbestos or other inhaled substances. She had never lived in agricultural areas.

The pleural process never resolved and in fact increased, accompanied by increased dyspnea on exertion. She was otherwise healthy, with a sole complaint of bilateral mild arthritis of the hands. Physical examination revealed decreased breath sounds throughout the left chest and mild clubbing of the
Figure 1. Contrast medium–enhanced CT of the chest was performed before the second resection attempt. (a) Scout view showed a large scalloped mass involving the periphery of the left chest. (b–e) Axial images showed near-replacement of the left chest with a heterogeneously enhancing mass involving the pleura and chest wall and displacing the lung. (f) Reconstruction of the remaining airspace confirmed severe restriction of the left lung, most prominently in the posterior and lateral aspects.

Figure 2. Preoperative angiography and embolization were performed to reduce blood loss during surgical resection. (a) Descending thoracic aortogram revealed multiple hypertrophied vessels throughout the thorax. (b) Parenchymal phase of aortogram demonstrated dense but inhomogeneous tumor blush throughout the left chest. Individual vessels were selected and embolized to stasis with gelatin sponge slurry and platinum microcoils, including intercostal arteries 2–12 (c), left inferior phrenic artery (d), lateral thoracic artery (e), and thoracodorsal branch of the subscapular artery (f). All vessels fed abnormal tumor blush. (g) Completion aortogram showed angiographic skeletonization. The patient underwent successful resection with autotransfusion from a cell saver.
fingertips. Laboratory values were completely normal, including blood cell counts, electrolytes, renal and hepatic functions, coagulation parameters, and glucose. A krypton Kr 81m ventilation study showed only 15% of the total lung function in the left lung. A positron emission tomography scan did not reveal hypermetabolic activity.

Several percutaneous biopsies were performed at an outside hospital, revealing no evidence of neoplasm or infection, only “bland connective tissue not typical of mesothelial cells.” Surgical resection was attempted but aborted as a result of massive hemorrhage. After transfer of care to another hospital, the patient underwent computed tomographic (CT) imaging before a second attempt at resection (Fig 1). No lymphadenopathy or additional masses were identified. Because of the previous hemorrhagic complications and the patient being a Jehovah’s Witness, preoperative angiography and embolization were performed (Fig 2). Fourteen arteries were embolized with gelatin sponge and coils, including intercostal arteries 2–12 and the left inferior phrenic, lateral thoracic, and thoracodorsal arteries, resulting in angiographic skeletonization of the thoracic aortogram (Fig 2g).

At surgical resection, two-level thoracotomy was necessary to resect the entire mass. A small pleural effusion and regions of cystic consistency were noted in the mass. The mass was densely adherent to the chest wall, pericardium, and diaphragm, but minimally to the actual lung.

**DIAGNOSIS**

At surgical pathologic examination, a diagnosis was made of solitary fibrous tumor of the pleura.

**DISCUSSION**

Solitary fibrous tumor of the pleura (SFTP) is a neoplasm arising from mesenchymal cells in the subserosal areolar tissue subjacent to the mesothelial-lined pleura (1–5). Tumors arise from the visceral surface in 80% of patients and the parietal surface in 20%. Tumors arising from the parietal surface, as in this case, tend to be very vascular. Incidence of SFTP peaks in the fifth through eighth decades of life, with no predilection for either sex. Approximately 90% of these tumors are benign and are discovered late, with mean diameters in the 6–12 cm range. Most patients remain asymptomatic, but larger tumors tend to cause dyspnea, cough, or chest pain. Tumors of identical histology, also called solitary fibrous tumors, can also be found in the mediastinum, pericardium, peritoneum, genitourinary tract, and head and neck.

For unknown reasons, SFTP is complicated by hypertrophic pulmonary osteoarthropathy in an unexpectedly high proportion of patients, approximately 20% of cases. In addition, 4% of cases are accompanied by hypoglycemia, postulated to be from secreted insulin-like factors. Treatment of SFTP usually consists of surgical excision, and there is no consensus about adjuvant therapy, even for the malignant variety. Malignancy is diagnosed histologically or by the appearance of distant metastases. The malignant form is usually hypermetabolic on positron emission tomography. Successful excision also typically resolves the complications of hypertrophic pulmonary osteoarthropathy and hypoglycemia. A majority of malignant SFTPs (63%) recur locally, and only 8% of benign lesions recur.

**References**