Pulmonary Large Cell Carcinoma Mimicking an Infected Thoracoabdominal Aortic Aneurysm

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A 68-year-old woman experienced frequent episodes of intermittent abdominal pain 6 months before admission. Because of increasing abdominal pain, she was admitted to our hospital. A computed tomography (CT) scan of the chest and abdomen revealed an enlarged and saccular-shaped thoracoabdominal aorta of 5.3 cm in diameter. No abnormality was seen in the lung aside from the periaortic mass. Laboratory studies revealed a white blood cell count of 7000/μl and a C-reactive protein level of 5.36 mg/dl (normal laboratory range $<$0.1). The suspected diagnosis was an infected thoracoabdominal aortic aneurysm. All blood bacteriological cultures were negative. The patient was treated conservatively by administration of analgesics, antihypertensive drugs, antibiotics, and heparin. Nevertheless, 3 months after admission, the diameter of the thoracoabdominal aorta reached 6.3 cm (Figure 1). As the patient experienced three attacks of thromboembolism of the legs, an emergency thrombectomy was performed. A pathological examination revealed no malignant cells in the removed thrombus. Subsequently, the patient was transferred to another hospital and underwent a surgical resection with an allograft replacement of the thoracoabdominal aorta, the celiac artery, the superior mesenterial artery, and the bilateral renal artery. A partial resection of the lower lobe of the left lung was also performed because a

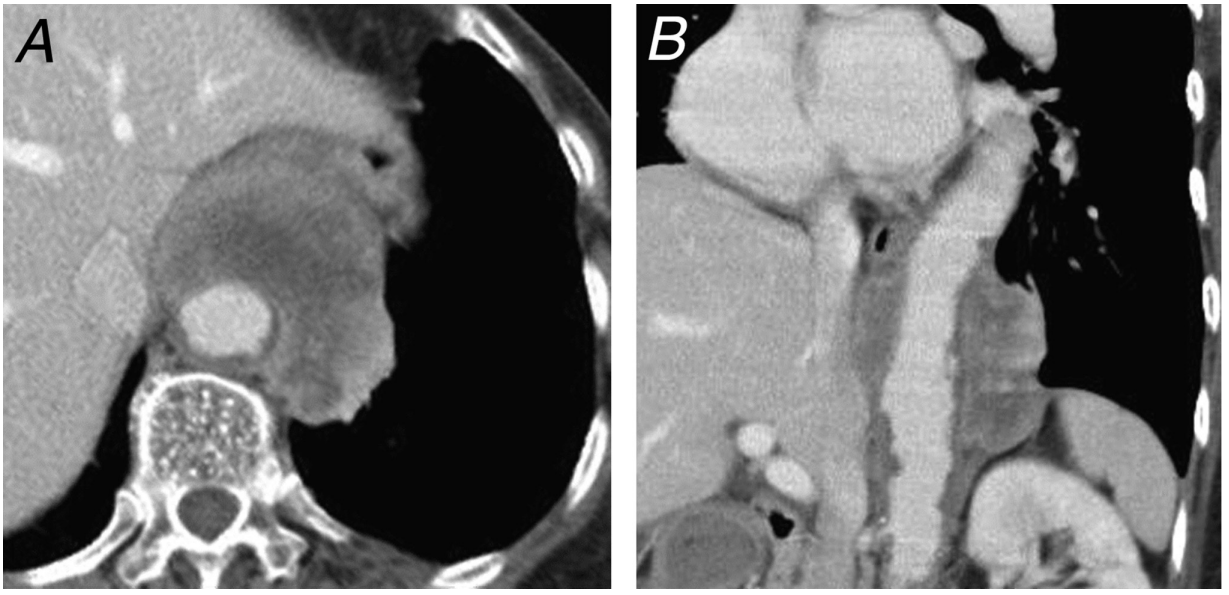

FIGURE 1. *A,* The axial postcontrast chest computed tomography image immediately before surgery shows a markedly enlarged, heterogeneously enhanced, saccular-shaped mass surrounding the aorta, corresponding to the infected thoracoabdominal aortic aneurysm. The aortic wall lacked calcification and was irregularly in contact with the mass surrounding the aorta. *B,* Coronal reconstructions show the saccular-shaped mass extending vertically across the thoracoabdominal aorta.

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portion of the tumor was localized in the left lung. Macroscopically, the mass surrounding the resected aorta was solid, and there was no bleeding into the mass. Histopathology finally revealed a mass surrounding the aorta and that the intrapulmonary tumor was a pulmonary large cell carcinoma. The tumor had invaded the wall of the aorta, and tumor cells were found in the mural thrombus of the resected aorta. The tumor had also caused intravascular obstruction and stenosis of branches of the resected abdominal aorta. It was also revealed that the resected margin of the aorta was positive for tumor cells.

The chest CT findings of pulmonary large cell carcinomas are frequently a single, peripheral mass or nodule with an irregular shape and margins with signs of lobulation.[1] In our case, the tumor existed in an atypical location and extended into the mediastinum and surrounded the aorta mimicking an infected thoracoabdominal aortic aneurysm. The tumor possessed some CT features specific to an infected aortic aneurysm, such as an atypically located saccular-shaped mass, rapid progression, and lack of athelosclerotic signs.[2] Furthermore, the patient had repeated attacks of thromboembolism, probably because tumor cells were migrating into the mural thrombus in the aorta. This pattern of the tumor presentation is extremely rare,[3] and symptoms and images obtained before surgery led to the diagnosis of an infected aortic aneurysm. An infected aortic aneurysm is an uncommon disease[2]; however, the imaging characteristics overlap with those of tumors, such as a rapidly expanding mass with heterogeneous enhancement. Thus, if a thoracoabdominal aortic mass is encountered that mimics an infected thoracoabdominal aortic aneurysm, cancers originating from organs surrounding the aorta, particularly lung cancer, should be included in the differential diagnosis. The pathological evaluation revealed a residual tumor in the patient, but no obvious distant metastasis was found immediately after the surgery. The patient was treated with best supportive care because of the existence of the allograft beside the residual tumor and her poor performance status.

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