A 69-year-old man was admitted to the hospital for chest pain. At the time of admission, a roentgenogram of the chest showed a hilar mass of the right lung. The patient denied fever, chills or hemoptysis. He never smoked cigarettes. He had had three myocardial infarctions. When the patient was 19 years old, a diagnosis of atrial septal defect was made. Then when the patient was 32 years old, a resection of the lower lobe of the right lung was done for bronchiectasis and nonresolving pneumonia. At age 62, he underwent single-vessel coronary artery bypass graft surgery as well as repair of the atrial septal defect with a pericardial patch graft.

A myocardial infarction was ruled out, and the chest pain resolved. Results of cardiac catheterization showed a normal left ventricular ejection fraction, a mean pulmonary artery pressure of 21 mm Hg, and no oxygen saturation step-up. Coronary angiography showed occlusion of the previous graft and atherosclerosis in several vessels. Results of pulmonary function tests disclosed the following values: FEV₁, 1.7 L (51% of predicted); FVC, 2.9 L (69% of predicted); and FEV₁/FVC ratio, 58%. A ventilation-perfusion ratio scan showed a low probability of pulmonary embolism. At the time of admission, the chest roentgenogram (Fig 1) showed a hilar mass of the right lung as well as the previous coronary artery bypass graft surgery, an old fractured rib, and postresectional changes in the seventh rib.
Diagnosis: Proximal Pulmonary Artery Aneurysm

A CT scan of the chest with intravenously administered contrast medium (Fig 2) showed dilation (>4 cm) of the pulmonary trunk and of the right and left pulmonary arteries, calcification within the posterior wall, and a low attenuated area in the right pulmonary artery suggesting thrombus formation.

Clinical manifestations of pulmonary artery aneurysms are nonspecific. However, an aneurysm should be considered when a chest roentgenogram shows a mass lesion suggestive of a vascular cause. The diagnosis of pulmonary vascular lesions has been simplified with imaging methods such as CT and MRI.\(^1\) Pulmonary artery dilation greater than 4 cm is considered to be an aneurysm. Pulmonary artery aneurysms are rare but have been reported with a variety of congenital heart diseases, infections, vasculitides, Marfan's syndrome, trauma, and with arteriovenous communications.\(^2\) In our patient, an atrial septal defect caused a left-to-right shunt and pulmonary hypertension (at the time of surgery, the pulmonary artery systolic pressure was 53 mm Hg) with concomitant dilation of the pulmonary trunk. Even though the pulmonary artery pressure became normal after repair of the septal defect, the pulmonary artery dilation continued, presumably due to weakness of the vascular wall. Two pathologic studies\(^3,4\) of pulmonary artery aneurysms showed cystic medial necrosis, atherosclerotic changes, and loss of elastic fibers. These studies concluded that aneurysm formation was due to weakness of the vascular wall. Several case reports suggest that progressive aneurysmal dilation of the pulmonary arteries can occur over a period of several years.\(^5-7\)

**Figure 2.** CT of the thorax with contrast showing marked dilation of pulmonary artery trunk, proximal right and left pulmonary arteries, and a thrombus in the right pulmonary artery.

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