A 66-year-old man presented with anorexia, unexplained weight loss, worsening shortness of breath, and atrial fibrillation. Ten years before this presentation, he had undergone urgent aortic root replacement to treat an acute type A aortic dissection at a different center.

Clinical examination revealed a systolic murmur (grade 3/6) and an early diastolic murmur. An initial chest radiograph did not show evidence of cardiac failure. With continued deterioration of his clinical state, a subsequent chest radiograph performed 7 months later showed cardiomegaly, pulmonary congestion, and a left pleural effusion. A diagnosis of congestive heart failure was made. Figures 1 and 2 show his chest radiographs first at initial presentation (Figure 1) and then 7 months later (Figure 2). The atrial fibrillation progressed from paroxysmal to persistent, with attempted cardioversions failing to restore sinus rhythm.

During this time, he experienced weight loss of 19 kg over a period of 8 weeks. A computed tomographic scan of his abdomen was performed to investigate a possible intra-abdominal tumor. It showed no evidence of intra-abdominal neoplasia. However, it revealed a nodule in the lower lobe of his left lung. A computed tomographic scan of his chest showed the left lung nodule to be a 3-cm rounded, soft lesion of soft tissue density (Figure 3) with no lymphadenopathy. It also revealed a very large collection around the aortic root and ascending aorta. An additional contrast-enhanced computed tomographic scan of the chest revealed this collection to be a large false aneurysm measuring 9.5 by 14 cm around the aortic root, with a large communication between the aortic root and the aneurysm and also a communication between the pseudoaneurysm and the pulmonary artery (Figures 4 and 5).

A 3-dimensional reconstruction of the computed tomographic images shows the relationship of the pseudoaneurysm to surrounding structures (Movie I in the online-only Data Supplement). Transesophageal echocardiography and left heart catheterization showed an abnormal connection with continuous flow from the left main coronary artery into the chamber of the aneurysm (Movie II in the online-only Data Supplement).

Percutaneous closure of the ostium of the pseudoaneurysm was considered, but not attempted, because it was doubtful...
that there was sufficient separation between the left main coronary artery ostium and the false lumen of the aneurysm to allow safe deployment of the closure device.

At surgery, femorofemoral bypass was instituted via the left groin. Systemic cooling was commenced to allow circulatory arrest before sternotomy. A left anterior fourth intercostal space thoracotomy was used to place an apical left ventricular vent to prevent ventricular distension once the heart fibrillated. Once a core temperature of 18°C was reached, the sternum was opened without incident. The pseudoaneurysm (Figure 6) was delineated, the aortic cross-clamp was applied, cardiopulmonary bypass was reinstituted, and the patient was rewarmed to 28°C. On opening of the pseudoaneurysm, a 1-cm defect was discovered in the apical aspect of the left main coronary artery anastomosis to the aortic root graft. Also discovered were two 1-cm defects in the apical aspect of the right pulmonary artery, communicating with the pseudoaneurysm, just distal to its bifurcation, of which 1 is shown in Figure 7. The pseudoaneurysm was dissected out, and the pulmonary artery and left main coronary artery button defects were repaired with bovine pericardium patches with the use of 5-0 polypropylene sutures.

Postoperatively, the atrial fibrillation was treated with amiodarone and atenolol, and the patient was discharged home 5 days after the operation. Outpatient follow-up at 6 weeks and 1 year after the operation showed the patient to be well and in sinus rhythm.

This is a case of a pseudoaneurysm of the left main coronary ostial button with aortopulmonary fistula after repair of acute aortic dissection. It is potentially fatal, and there are only a few reported cases.1,2

Pseudoaneurysms of the ascending aorta are well reported after trauma or surgery.3,4 However, there are only a few

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**Figure 3.** Axial computed tomographic image, before contrast, showing the nodule in the lower lobe of the left lung. The solid arrow points to the nodule.

**Figure 4.** Axial computed tomographic view of pseudoaneurysm (PsA) with connection to pulmonary artery (PA). The solid arrow points to the connection and depicts the flow from the pseudoaneurysm to the pulmonary artery.

**Figure 5.** Coronal computed tomographic view of pseudoaneurysm (PsA) with connection to pulmonary artery (PA). The solid arrow points to the connection and depicts the flow from the pseudoaneurysm to the pulmonary artery. A indicates aorta.

**Figure 6.** The large pseudoaneurysm at surgery, shown by blue arrowheads.
reported cases of the pseudoaneurysm arising from the left main coronary ostial button and leading to a fistula into the pulmonary artery. They often present with congestive cardiac failure, as in this case. In this case, the patient presented with worsening atrial fibrillation with subsequent congestive cardiac failure 10 years after the initial surgery for acute dissection of the aorta.

Diagnosis can prove challenging. Some previous reports advocate that computed tomography, as a diagnostic tool, is superior. In addition to computed tomography, we advocate use of a combination of echocardiography, aortography, and catheterization to diagnose and plan management and surgery. The echocardiogram allowed identification and assessment of the fistulous connection and continuous turbulent flow around the aortic valve into the pseudoaneurysm. The computed tomographic scan allowed assessment of size and delineation of relationship of the pseudoaneurysm to its surrounding structures. Aortography and cardiac catheterization were used to aid precise location of the connection between the left main coronary ostial button and the pseudoaneurysm, aiding the decision not to proceed with placement of a closure device.

**Disclosures**

None.

**References**

Large Aortic Pseudoaneurysm, From Left Coronary Ostium, With Aortopulmonary Fistula 10 Years After Aortic Root Replacement for Type A Aortic Dissection
Robert Ibe, Nabi Bahktiari, Chris Davidson, David Hildick-Smith and Michael Lewis

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