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Images in Congenital Heart Disease

Detection of a pseudoaneurysm using contrast-enhanced computed tomography with multiplasma and 3-dimensional reconstructions

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A 14-YEAR-OLD GIRL WAS ADMITTED WITH A 3-day history of persistent pain in the head and neck and a history of fever and sternal chest pain over one day. The pain was located over a surgical scar, where she had undergone aortic valvotomy and resection of subaortic stenosis 5 months previously. Two weeks after the initial surgery, she developed mediastinitis due to an infection with *Staphylococcus aureus*, and underwent a radical debridement of the sternal incision. Her recent onset of pain and fever was suggestive of another mediastinal infection, so contrast-enhanced computed tomography was performed with multiplasma and 3-dimensional reconstructions. The scan, when viewed

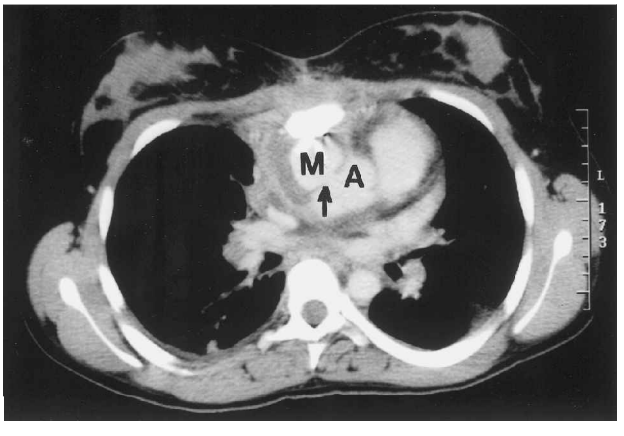


Figure 1.

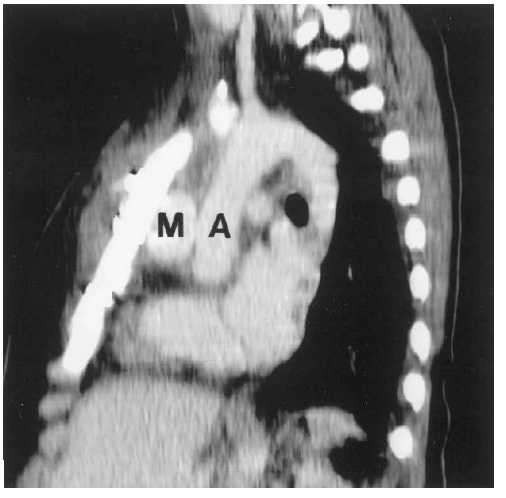


Figure 2.

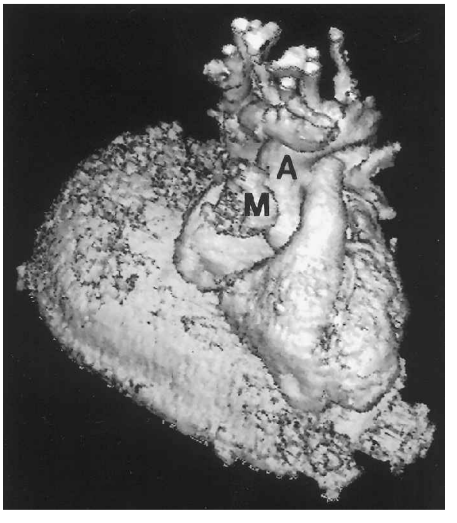


Figure 3.

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on the transverse plane, showed a large contrast-opacified collection (M) just deep to the sternum (Fig. 1). The mass measured 4 cm cephalocaudad and 2.5 cm × 3.2 cm transversely. The left anterior oblique projection (Fig. 2) confirmed the findings. A neck, one centimetre in diameter, (arrow) was seen between the mass and aorta (A) and made likely the diagnosis of a pseudoaneurysm. Three-dimensional reconstruction (Fig. 3) confirmed the findings. Surrounding the mass was a moderate amount of low-attenuation fluid, suggestive of adjacent infection. The girl underwent urgent surgery, femoral bypass being initiated prior to the start of the procedure. Upon opening the sternum, the aneurysm ruptured. The final diagnosis was a mycotic aneurysm of the ascending aorta caused by *Staphylococcus aureus*. The patient survived surgery, without complications. She required treatment with intravenous cloxacillin for 6 weeks, and Rifampin for 5 weeks. The key in making the initial diagnosis was the computed tomography scan. Angiography, another technique that might have provided the same information, could have produced spontaneous rupture of the aneurysm.

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