Three-Dimensional Imaging of Aortic Aneurysm After Balloon Angioplasty for Coarctation of the Aorta

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A 15-year-old girl was referred to our hospital for reevaluation and balloon angioplasty of a previously documented coarctation of the aorta. She had undergone coarctectomy at age 1 week and patch closure of a ventricular septal defect at age 1 year. Three years before referral, she had received balloon angioplasty to relieve postoperative restenosis of the descending aorta; this improved the pressure gradient from 36 to 18 mm Hg. A 2-dimensional echocardiogram showed stenosis of the descending aorta with a pressure gradient of 40 mm Hg. Helical CT clearly demonstrated not only a stenotic lesion of the descending aorta but also an aneurysm 8 mm in length and 5 mm in diameter, with a thin inner area and a thicker outer area just distal to the stenotic lesion (Figure 1). Conventional aortography and cine-mode MRI also revealed a mushrooming aneurysm without pulsation on the lateral view (Figure 2), but not as clearly as with helical CT. The patient underwent resection of the aortic aneurysm and grafting with a Hemashield graft. The postoperative course was uneventful.

Aortic aneurysm after balloon angioplasty for coarctation of the aorta is a rare but serious complication. Because helical CT could construct images from the optional angle, it was a useful, noninvasive alternative for early evaluation of the 3-dimensional structure and its relationship to the neighboring tissues.
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_Circulation_. 1999;100:1673-1674
doi: 10.1161/01.CIR.100.15.1673

_Circulation_ is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
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