Aortic aneurysm formation following coarctation repair by Dacron patch aortoplasty

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We describe the finding of an aortic aneurysm in an asymptomatic 43-year-old male, who was managed by Dacron patch aortoplasty for native coarctation of the aorta 25 years before. The role of magnetic resonance angiography as standard imaging technique in lifelong postoperative surveillance is discussed subsequently. (Neth Heart J 2010;18:376-7.)

Keywords: Aortic Aneurysm; Aortic Coarctation; Blood Vessel Prosthesis Implantation; Magnetic Resonance Angiography; Case Reports

The following case demonstrates a well-known complication late after surgical repair of aortic coarctation. A 43-year-old male patient was invited to our outpatient clinic for routine follow-up investigation in the setting of a postcoarctectomy surveillance programme. Previous surgical repair consisted of Dacron patch aortoplasty, performed at the age of 18. Since then, no complications had occurred. He was asymptomatic and no routine cardiologist's follow-up controls had taken place during the past five years. Clinical investigation was

normal. By means of contrast magnetic resonance imaging a true aneurysm was found at the distal aortic arch with a cross-sectional diameter of 7 cm (figure 1).

Aneurysmectomy was performed subsequently. Interposition polyester grafts were used to reconstruct the aortic arch and proximal descending aorta and to connect this aortic segment to the subclavian artery via lateral thoracotomy. Rethoracotomy had to be performed within one week in order to evacuate significant pleural effusion. Bleeding was excluded. The postoperative course thereafter was uneventful. Contrast CT imaging after three months showed a satisfactory postoperative aortic anatomy.

Aneurysms are found following all types of surgical repair of aortic coarctation, but especially after Dacron patch aortoplasty, with reported incidences up to 90% during a follow-up period of more than 20 years.^{1,2} The combination of clinical visit and magnetic resonance imaging in every patient has been shown the most cost-effective approach to diagnose both recoarctation and aortic aneurysms.³ Magnetic resonance imaging has been advocated especially in adults, for it adequately provides detailed composite views of the aortic arch and coarctation, including patients in whom echocardiography fails to detect recoarctation, tubular hypoplasia and aortic kinking.⁴⁻⁷ More important than the specific imaging technique applied is life-long postoperative surveillance after surgical repair of coarctation with regular imaging of ascending and descending aorta and aortic arch. This holds true for the asymptomatic patient also, because aneurysm formation and recoarctation, along with persistent hypertension, aortic valvular disease and left ventricular dysfunction as other late complications and associated cardiac malformations, may not present symptoms.⁸ Early detection may drive subsequent interventions, with lower risks than the hazards of the natural course of these conditions. ■

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Figure 1. Sagittal oblique contrast-enhanced 3D-surface rendered magnetic resonance angiogram of a 43-year-old patient, in whom coarctation repair was performed by Dacron patch aortoplasty at the age of 18. An aneurysm of approximately 7 cm was detected at the site of coarctation repair.

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