Our male patient had a hypoplastic isthmus and a preductal coarctation of the aorta. The coarctation was corrected by resection and end-to-end anastomosis at the age of 3 months. The left subclavian artery was sacrificed in this procedure. Thirteen years later, a recoarctation involving the left carotid artery was diagnosed. Surgical correction was achieved with a preclotted Dacron knitted graft, with a diameter of 2 cm, from the ascending aorta to the abdominal aorta. This bypass was connected with the ascending aorta 5 cm above the aortic valve and continued anterior to the heart over the right ventricle, passing the diaphragm posterior to the left lobe of the liver, and was connected end-to-side to the abdominal aorta just above the origin of the truncus coeliacus. The native aortic arch and descending aorta were still patent, but the descending aorta was hypoplastic.

A MRI scan was performed in 1986 when the patient was 18 years of age (Figure 1). In 1998, at the age of 30 years and 17 years after placement of the Dacron bypass graft, the patient noticed leg fatigue at exercise. Although normal pulsations were found in the femoral arteries, a difference in blood pressure of 30 mm Hg between the right arm and left leg was detected. Therefore, a MRI examination was performed. The spin-echo image (Figure 2) shows a dilatation in the abdominal part of the bypass, with a maximal diameter of 8 cm. The maximum intensity projection of a 3D, gadolinium-enhanced MR angiogram (Figure 3) shows the site of the coarctation, the hypoplastic descending aorta, and the Dacron bypass with its dilatation.

At operation, the knitted graft was not dilated but completely degenerated in its abdominal part, with several false aneurysms surrounding it. The bypass was totally resected and replaced.

Reference
Figure 1. Sagittal spin-echo MRI image, obtained in 1986, of ascending-aorta-to-abdominal-aorta bypass 5 years after construction. No dilatation in any part of bypass was observed.

Figure 2. Angulated sagittal spin-echo MRI image, obtained in 1998, of ascending-aorta-to-abdominal-aorta bypass 17 years after construction. In abdominal part of bypass, dilatation is observed (arrow). LV indicates left ventricle.

Figure 3. Maximum intensity projection of a 3D, gadolinium-enhanced MR angiogram depicting site of coarctation, hypoplastic descending aorta, and Dacron bypass with its dilatation (*).
False Aneurysms of an Ascending-Aorta-to-Abdominal-Aorta Bypass for Coarctation of the Aorta

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