A 43-year-old hypertensive woman was referred for control of her blood pressure became increasingly difficult, requiring multiple agents. Physical examination showed a difference in blood pressure between both arms, systolic murmur, and low volume femoral pulses. Doppler interrogation of the descending aorta showed a systo-diastolic gradient maximum of 70 mmHg.

A cardiovascular magnetic resonance with 3D volume reconstruction confirmed the severe aortic coarctation (CoA) located distally to the origin of left subclavian artery with a maximum transverse diameter of 2 mm and discrete dilatation of the ascending aorta (Panel A). Cardiac catheterization and stent implantation was performed and excellent initial results were obtained. Six months later, a multidetector computed cardiac tomography (MDCT) was performed, which showed a small aneurysm (Panels B and C) that remained stable for two years upon follow-up with serial computed tomograms. Although the exact mechanism for the aneurysms development remains uncertain, it has been proposed that minor wall irregularities beyond the limits of the stent or an invagination of the wall of the vessel could be responsible for this complication. In this case, however, echocardiography may be less sensitive than angiography, spiral computed tomography, or MRI in detecting aneurysms after stent placement. Magnetic resonance imaging has a limited role in CoA after stent placement as the metallic artefact (or noise) prevents the detailed evaluation of the aortic segment within the stent, despite adequate visualization of the aorta proximal and distal to the stent. The MDCT is the method of choice in the non-invasive follow-up after stent implantation.

Panel A. Cardiovascular magnetic resonance with volume rendering reconstruction showed severe CoA.

Panel B. MDCT anterior view with volume rendering reconstruction and reformatted images of aorta in the follow-up showed a small aneurysm (arrow).

Panel C. MDCT posterior view with volume rendering reconstruction and reformatted images of aorta in the follow-up showed a small aneurysm (arrow).