Clinical Implications of Positive Vascular Remodeling of a Coronary Arterial Segment

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In the year 2006, a 74-year-old man with thoracic pain and palpitations consulted the doctor. A multislice computed tomography was performed (Aquilion 64, Toshiba). In it, we observed a significant narrowness (more than 90%) of the lumen of the circumflex artery and signs of positive vascular remodeling in the right coronary artery. This phenomenon did not produce lumen narrowness. The invasive angiography coincided with the findings of the non-invasive study (Figure 1). Immediate hospitalization and percutaneous treatment of the left coronary artery were indicated.

The patient had dyslipidemia and he also suffered from hyperuricemia. From that moment on, he remained asymptomatic and he had to be chronically treated with aspirin, clopidogrel, beta blockers, atorvastatin and allopurinol.

In the year 2009, the patient consulted again due to thoracic pain, carrying out completely the treatment prescribed two years before. He did not present any electrocardiographic or enzymatic changes; his general practitioner asked for a new tomographic study where a permeable stent and a significant lumen reduction (more than 90%) in the segment that had signs of remodeling in the right coronary artery (Figure 2) were observed. With the aim of measuring the magnitude of the ischemia, a fusion study with SPECT, in which the affected segment and the threatened ischemic territory (treated with angioplasty) coincided, was carried out (Figure 3).

The sign of positive remodeling, which is appreciated by this type of non-invasive diagnostic methods, seems to be closely linked with a significant inflammatory load.

A series with patients, whose images had the described characteristics, has been recently published. During monitoring, these patients showed the suffering of a significant number of vascular events. (1) In the present case, images of this type of lesion are appreciated after two years of observation.

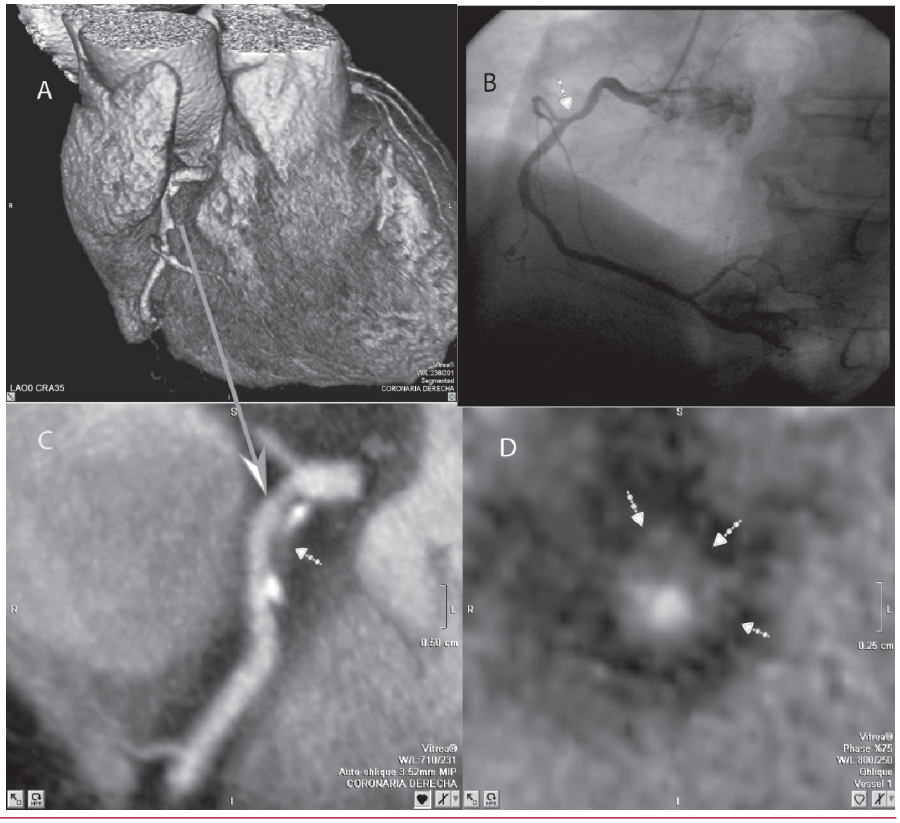

Fig. 1. Multislice coronary tomography (2006). **A.** Three-dimensional reconstruction of the right coronary artery (RCA); **B.** Coronary angiography with mild lesion; **C.** Curved multi-planar reconstruction that shows a non-calcium plaque with positive remodeling of the RCA wall; **D.** Cross section of the lesion.

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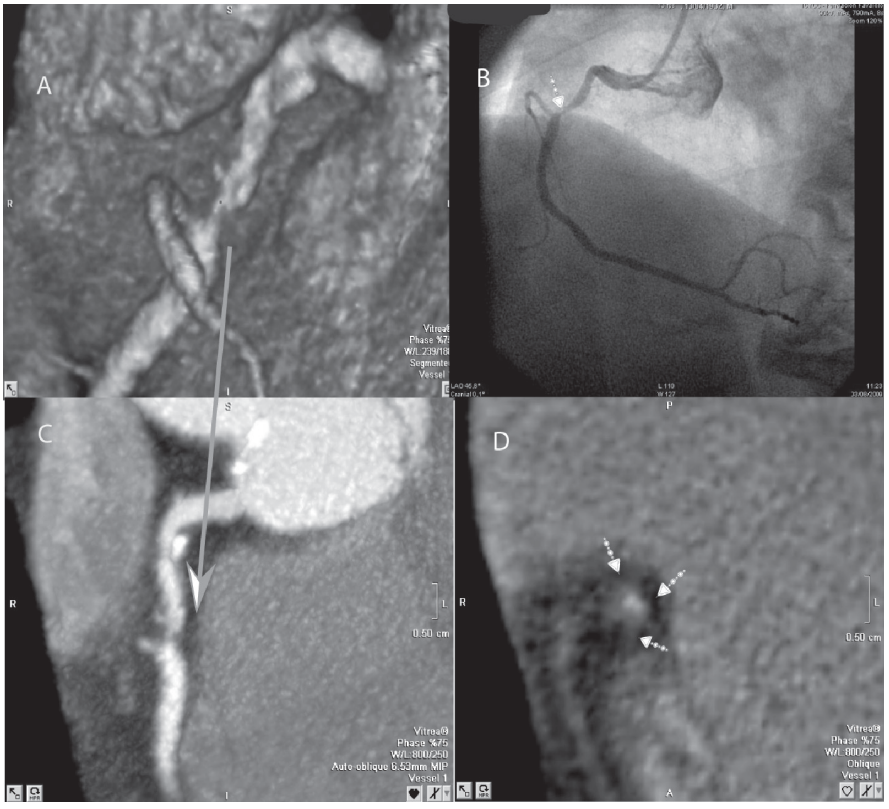

Fig. 2. Multislice coronary tomography (2009). **A.** Three-dimensional reconstruction of the RCA; **B.** Coronary angiography with severe lesion of the RCA; **C.** Curved multiplanar reconstruction that shows severe stenosis of the same vessel in the same segment; **D.** Cross section of the lesion in the RCA.

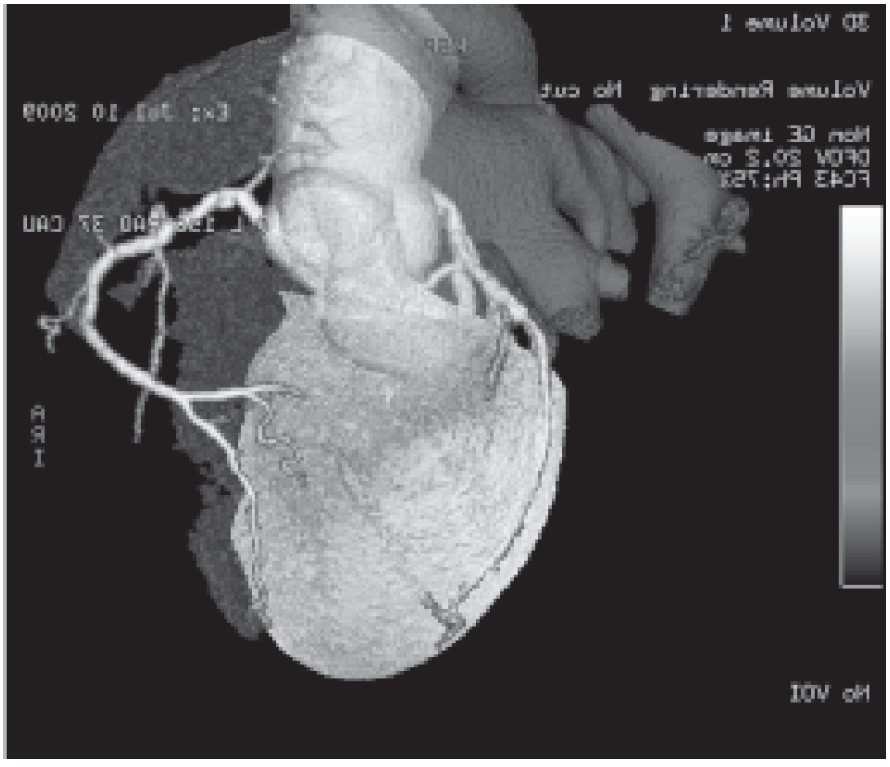

Fig. 3. Fusion of multislice CT and SPECT images that shows ischemia in the territory of the right coronary artery.

BIBLIOGRAPHY

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