High-risk Proximal LAD Coronary Plaque in a Patient With Optimal Medical Therapy - 5-year Follow-up

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Abstract:

An asymptomatic 61-year-old man, with medical history of high blood pressure, hypercholesterolemia, diabetes mellitus and a prior SPECT exam negative for myocardial ischemia. He underwent a routine coronary computed tomography angiography (Coronary CTA) study for risk stratification. Results revealed calcified lesions and an atherosclerotic plaque at proximal left anterior descending artery (LAD) presenting intense positive and negative remodeling, low attenuation core, signs of ulceration and spots of calcification. Those characteristics were shown to be high-risk for acute myocardial infarction (vulnerability plaque characteristics).

In a joint decision (patient and referring physician), patient remained under optimal medical therapy. During five years of follow-up, the patient presented no cardiovascular symptoms and no acute coronary events. He was then referred to another coronary CTA for proximal LAD atherosclerotic plaque progression assessment. A 5-year follow-up coronary CTA revealed reduction of both total plaque volume and low attenuation core. Additionally, a decrease in the grade of luminal stenosis was also noted. Current SPECT remained negative for myocardial ischemia.

High-risk coronary lesions are thought to be correlated with the occurrence of acute coronary syndrome. However, the ideal therapeutic approach between conservative or invasive treatment, mostly in asymptomatic patients, remains under discussion. In this pictorial case, medical treatment was effective in preventing the progression of atherosclerotic plaque and reducing some high-risk characteristics, which was associated to excellent 5-year clinical outcome.

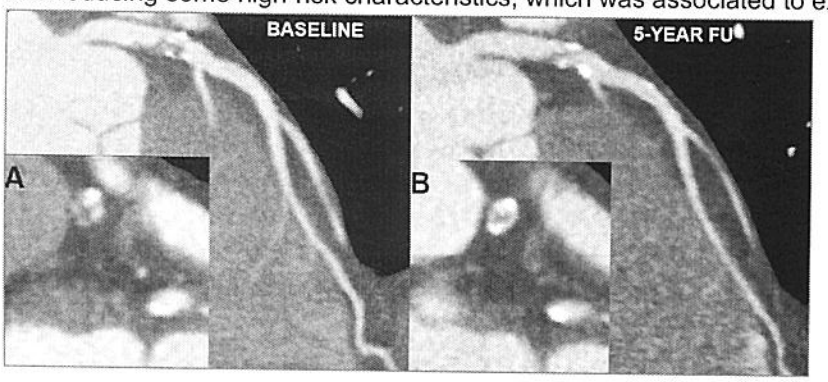

Fig. 1. Coronary computed tomography angiography of left anterior descending artery with curved multi-planar reconstruction and cross sectional image (detail). (A) Baseline images (left) revealing high-risk atherosclerotic plaque with positive remodeling, low attenuation core, signs of ulceration, spots of calcification and severe stenosis; (B) 5-year follow-up images (right) revealing reduction of total plaque volume, low attenuation core and the grade of luminal stenosis.