Hypertrophic cardiomyopathy associated with left ventricular apical aneurysm

Cardiomyopathie hypertrophique associée à un anévrisme de l’apex du ventricule gauche

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A 38-year-old man was admitted to the cardiology emergency department for palpitations. He had been diagnosed 3 years earlier with hypertrophic cardiomyopathy and was receiving chronic treatment with beta-blockers and low-dose aspirin. Physical examination was unremarkable. Electrocardiogram showed right bundle branch block associated with diffuse abnormal ST-segment changes (Fig. 1). Troponin I was increased slightly, at 0.11 ng/mL (normal < 0.05). Transthoracic echocardiographic examination revealed concentric left ventricular hypertrophy with maximal midventricular thickening without significant left ventricular obstruction and a large apical aneurysm (Video 1). Coronary angiography was normal. The left ventricular cine-angiogram showed midcavitary obliteration at end-systole and a large aneurysm (Video 2). Late gadolinium enhancement cardiac magnetic resonance imaging found transmural fibrosis of the apex and confirmed maximal left ventricular wall thickening at the midventricular level (Video 3, Fig. 2). Exercise testing did not produce arrhythmias. Treatment with a vitamin K antagonist was initiated.

Hypertrophic cardiomyopathy patients with apical aneurysm represent an underrecognized subset of hypertrophic cardiomyopathy patients. This hypertrophic cardiomyopathy pattern portends a poor outcome, including sudden death, embolic stroke and progressive heart failure. The chronic intraventricular pressure gradient due to

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Figure 1.  Late gadolinium enhancement cardiac magnetic resonance imaging showing transmural fibrosis of the apex and confirmed maximal left ventricular wall thickening at midventricular level.

Figure 2.  Electrocardiogram showing right bundle branch block associated with diffuse abnormal ST-segment changes.

midventricular obstruction might trigger myocardial infarction, which in turn results in apical aneurysm formation. Of note, foreshortened apical views that were obtained at admission by junior staff excluded the apical aneurysm from the image (Video 4).

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.acvd.2009.08.015.