


Coronary embolization detected by delayed enhancement MRI

Edouard Gerbaud*, Mathieu Lederlin, and François Laurent

Department of Cardiology Pr P. Coste, Cardiovascular Imaging Unit, Hôpital Cardiologique du Haut Levêque, Avenue Magellan, Pessac 33604, France

* Corresponding author. Tel: + 33 5 57 67 55 36; Fax: + 33 5 57 65 60 38. Email: edouard.gerbaud@chu-bordeaux.fr

A 34-year-old man was referred to our department with acute onset of atypical chest pain associated with vagal symptoms. There was no history of any coronary risk factor and his 12-lead electrocardiogram revealed a normal sinus rhythm at 70 bpm without any sign of myocardial ischaemia. He described a past-history of asthma that started when he was 10 years old and has been treated with short and long-acting beta (2)-mimetic. Transthoracic echocardiography showed a moderately hypertrophied left ventricle without wall segmental abnormality, a calculated left ventricular ejection fraction of 70%. Troponin T raised to 0.6 ng/mL.

Delayed gadolinium-enhanced cardiac magnetic resonance imaging (Panel A) demonstrated multiple hyper-enhanced small areas located either sub-endocardial or sub-epicardial. These areas were not transmural and encompassed 50–75% of the ventricular wall thickness. Delayed enhancement areas were located in the anteroseptal wall at mid-ventricular and apical levels and in the anterolateral and inferior walls at apical level. The enhancement pattern was characteristic of a coronary artery distribution in the left descending coronary artery territory.

On a subsequent coronary angiography (Panel B), the angiogram showed a large and mobile thrombus at the middle portion of the left descending coronary artery. Intravascular ultrasound confirmed the diagnosis of thrombus (Panel C) over a ruptured eccentric plaque (Panel D). The patient underwent angioplasty and stenting with a final good result. Cardiac MRI was also performed in this patient 3 months later. This examination showed persistent areas of delayed enhancement in the same localizations, especially a similar subepicardial enhancement in the anterolateral wall at the apical level.

Of particular interest, this case highlights the possibility to detect multiple coronary embolizations using cardiac MRI. In addition, subepicardial delayed enhancement being an uncommon pattern of acute coronary syndrome, we hypothesized that emboli which involved the left descending coronary artery were lodged very distally, causing infarcts that appeared subepicardial on cardiac MRI.