Potential value of myocardial contrast echocardiography for the detection of myocardial fibrosis in hypertrophic cardiomyopathy

Intérêt de l’échocardiographie de contraste pour le diagnostic de fibrose myocardique dans la cardiomyopathie hypertrophique

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Received 12 August 2010; received in revised form 23 March 2011; accepted 31 March 2011
Available online 18 November 2011

We report the case of a 37-year-old man with hypertrophic cardiomyopathy. Echocardiography showed a left ventricular hypertrophy (LVH) on the septal area (25 mm), without intraventricular obstruction or systolic anterior motion of the mitral valve. Myocardial contrast echocardiography showed an unusual capture of the contrast in the anteroseptal wall of the left ventricle, 5 minutes after injection of Sonovue® (Bracco Diagnostics, Inc., Princeton, NJ, USA; Fig. 1).

Two weeks later, magnetic resonance imaging (MRI) was performed to confirm the LVH predominantly on the septal area (25 mm). Myocardial mass was 335 g. Delayed enhancement MRI studies (10 minutes after gadolinium injection) showed a delay-enhancement on the septal wall of the left ventricle, with an excellent topographic match with the abnormal contrast retention seen on echocardiography. The late enhancement was patchy and located predominantly in the subendocardium and not in the intramyocardium, which is more usual in LVH (Fig. 2). To rule out ischaemic cardiopathy, cardiac computed tomography was performed, which was normal.

Delayed enhancement MRI studies can show late myocardial enhancement in hypertrophic cardiomyopathy, especially on the septal wall, corresponding to fibrosis. Although the use of delayed enhancement MRI in the diagnosis of myocardial fibrosis has been well documented in the literature, similar contrast enhancement areas seen on a contrast echocardiography and compared with MRI have not been reported. Late

Abbreviations: LVH, left ventricular hypertrophy; MRI, magnetic resonance imaging.
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Detection of myocardial fibrosis

Enhancement of microbubbles with myocardial echocardiography has already been used in the detection and quantification of myocardial infarct scars.

We believe that contrast echocardiography may have potential value for the detection of myocardial fibrosis in LVH.

Figure 1. Myocardial contrast echocardiography showing (arrows) unusual capture of contrast in the anteroseptal wall of the left ventricle, 5 minutes after injection.

Figure 2. MRI showing delay-enhancement (arrows) on the septal wall of the left ventricle, with an excellent topographic match with the abnormal contrast retention seen on echocardiography. The late enhancement was patchy and located predominantly in the subendocardium.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.