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ASSESSMENT OF ISOLATED LEFT VENTRICULAR NON-COMPACTION WITH CONTRAST ECHOCARDIOGRAPHY

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Objectives Isolated ventricular non-compaction (IVNC) is a rare form of primary cardiomyopathy, and is a cardiomyopathy considered to be caused by arrest of normal embryogenesis of the endocardium and myocardium. Echocardiography has been the preferred diagnostic procedure; however, the correct diagnosis is often missed or delayed, because this uncommon disease and its similarities to other disease of the myocardium and endocardium are not widely known. Intravenous ultrasound contrast agents are indicated for left ventricular (LV) opacification and improvement of LV endocardial border delineation in patients with suboptimal acoustic windows

Methods We presented a series of adult patients with suspected IVNC on conventional 2D echocardiography and evaluate the incremental diagnostic value of contrast echocardiography. To calculate the non-compacted segments and the non-compacted/compacted thickness ratio (N/C), the thickness of the layers was measured at the site of maximal thickness in the apical 3 or 4 chamber view at end diastole on the conventional 2D and on the contrast echocardiography, respectively.

Results

1. Some of the small trabeculations and intertrabecular recesses, which were difficult to visible on standard echocardiography, could be more clearly showed on contrast echocardiography;
2. The non-compacted segments of the left ventricle were more with contrast than with standard echocardiography;
3. The N/C was hard to assess echocardiographically, but better with contrast enhancement;
4. The contrast echocardiography could be very helpful to confirm the connectional blood flow between the intertrabecular spaces and the LV cavity, which was low and missed using conventional color Doppler.

Conclusions The use of contrast can be helpful to improve visualisation of trabeculations in patients with poor baseline echo images. Contrast echocardiography can show a clearer the delineation of the ventricular trabeculations and intertrabecular recesses, and the blood flow between lv cavity and recesses. Together with greater understanding and awareness, it is likely that an increased number of patients will be diagnosed with IVNC in an earlier disease stage.