Clinical vignette

MRI findings of small isolated congenital left ventricular diverticulum

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A 37-year-old man was studied for chest pain. No abnormal findings were noted in clinical examination and chest X-rays. The electrocardiogram showed sinus rhythm of 64 bpm and ST-abnormalities (ST-T elevation) in the inferior and precordial leads. Coronary angiography was normal and left ventricular angiography revealed normal ejection fraction and a small finger-like shaped image at the inferior wall. There was not a good echocardiographic acoustic window. The patient was submitted to MRI exam in order to better define the unusual aspect. The study clearly defined a small isolated diverticulum located at mid-inferior segment of left ventricular wall [short (Panel A) and long-axis (Panel B) spin-echo image]. On dynamic images, it appeared as muscular type because of changing during cardiac contraction, with maximum diameter in diastolic phase and complete emptying during systole [dynamic cardiac images in diastole (Panels C–E); movies 1–3]. No abnormality was noted both in perfusion phase post-gadolinium and in delayed images at 5–10–15–20 min. Medical therapy including cardioaspirin and beta-blocker was given and a close follow-up (3–6 months) with MRI was planned.

In conclusion, MRI allows a complete assessment of congenital left ventricular diverticulum (LVD) identifying fibrous or muscular type and relationship with other cardiac structures. Because of its non-invasive nature and parameter reproducibility, MRI alone can provide excellent monitoring of LVD follow-up in patient treated with conservative approach.

Panel A. Short-axis spin-echo image.
Panel B. Long-axis spin-echo image.
Panels C–E. Dynamic cardiac images in diastole.
Panels C–E. Dynamic cardiac images in systole.

Supplementary movie is available at European Heart Journal online.