



## IMAGE IN CARDIOLOGY

# Complete recovery of myocardial inflammation imaged by T2 mapping



## Recuperação completa de miocardite avaliada por T2-mapping

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We present the cardiovascular magnetic resonance (CMR) images of a 31-year-old woman with flu-like symptoms, admitted for chest pain and elevated troponin I. Cine imaging showed pericardial effusion and a non-dilated left ventricle with mildly increased wall thickness, preserved systolic function, and no wall motion abnormalities (Figure 1 and Video 1). T2-weighted short-tau inversion recovery (STIR) sequences showed diffuse myocardial hyperintensity, while delayed enhancement imaging revealed extensive left ventricular subepicardial and midwall hyperenhancement. In order to quantify and more clearly depict the myocardial edema, a new CMR technique (T2 mapping) was also used. Our patient's T2 maps showed diffusely increased myocardial T2 times (74 ms in the interventricular septum; reference  $\leq 46$  ms).

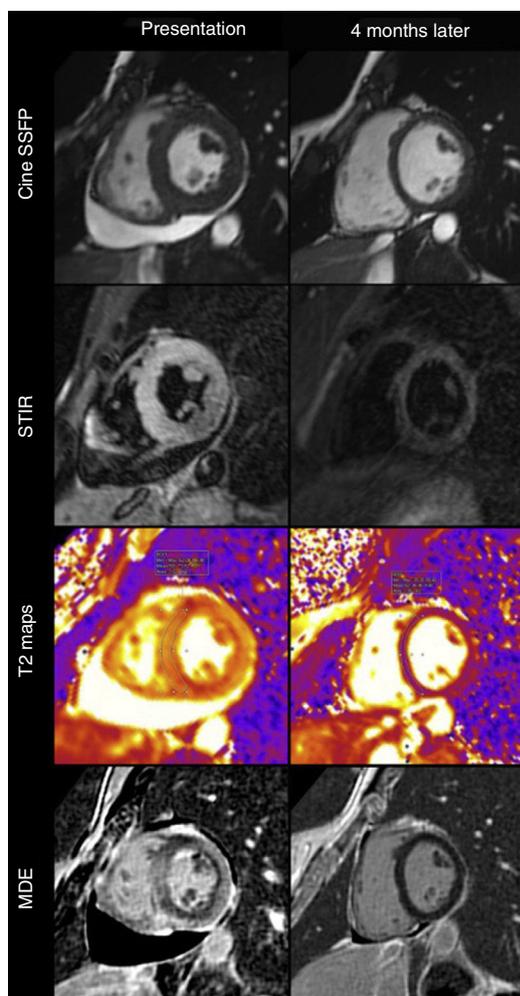
A follow-up CMR performed four months later showed disappearance of the LV "pseudo-hypertrophy" and no

myocardial delayed enhancement (Figure 1 and Video 2). There was also no myocardial hyperintensity on T2-STIR images. T2 mapping now showed values within normal limits (45 ms).

Until recently, T2-weighted imaging relied essentially on black blood turbo spin echo sequences, which were subject to several drawbacks that limited their usefulness. Recently, new mapping techniques have been introduced to overcome these limitations and to enable quantitative assessment of myocardial edema. Myocardial maps can be acquired in any orientation and are independent of heart rate and coil proximity and less sensitive to arrhythmias or respiratory motion. The quantification of T2 offers a distinct advantage in the detection of global changes, in comparison with classic T2-weighted imaging. This case illustrates the feasibility and potential usefulness of myocardial T2 mapping in the setting of myocarditis.

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**Figure 1** Cardiovascular magnetic resonance images at presentation and four months later. MDE: myocardial delayed enhancement; SSFP: steady-state free precession; STIR: short tau inversion-recovery.

## Ethical disclosures

**Protection of human and animal subjects.** The authors declare that no experiments were performed on humans or animals for this study.

**Confidentiality of data.** The authors declare that they have followed the protocols of their work center on the publication of patient data.

**Right to privacy and informed consent.** The authors declare that no patient data appear in this article.

## Conflicts of interest

The authors have no conflicts of interest to declare.

## Appendix A. Supplementary material

Supplementary material associated with this article can be found in the online version at [doi:10.1016/j.repc.2015.11.030](https://doi.org/10.1016/j.repc.2015.11.030).