Sequential Cardiac Magnetic Resonance Imaging of Acute Eosinophilic Myocarditis

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A 56-year-old woman taking an herbal medicine presented with worsening dyspnea, an ejection fraction (EF) of 49% with concentric hypertrophy on echocardiography and elevated levels of brain natriuretic peptide (BNP) (1,031 pg/mL), troponin I (2.99 ng/mL) and blood eosinophils (13,800/μL). Cardiac magnetic resonance (CMR) imaging revealed high T2 signal intensity through all layers of the myocardium (Picture A) and modest diffuse late gadolinium enhancement (LGE; Picture B). The relative myocardial T2 signal intensity (SI) ratio, calculated as $S_{\text{myocardium}}/S_{\text{skeletal muscle}}$, was 2.30 (cutoff <1.90, as previously reported (1)), suggesting the presence of acute inflammation and edema. An endomyocardial biopsy confirmed a diagnosis of acute eosinophilic myocarditis (Picture C). Oral prednisolone therapy decreased the SI ratio, to 1.76 on the 14th day (Picture D) and 1.56 on the 42nd day (Picture E, F; LGE), along with an improvement in the BNP level (34 pg/mL), EF (63%) and biopsy findings on the 40th day (Picture G). Due to its non-invasiveness, sequential CMR (2) allows clinicians to reliably assess the activity of inflammation.

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