The International Journal of Cardiovascular Imaging (2021) 37:2025–2026
https://doi.org/10.1007/s10554-021-02161-y

IMAGES IN CV APPLICATIONS

CMR unveiling the cause of post CoVid-19 infection chest pain

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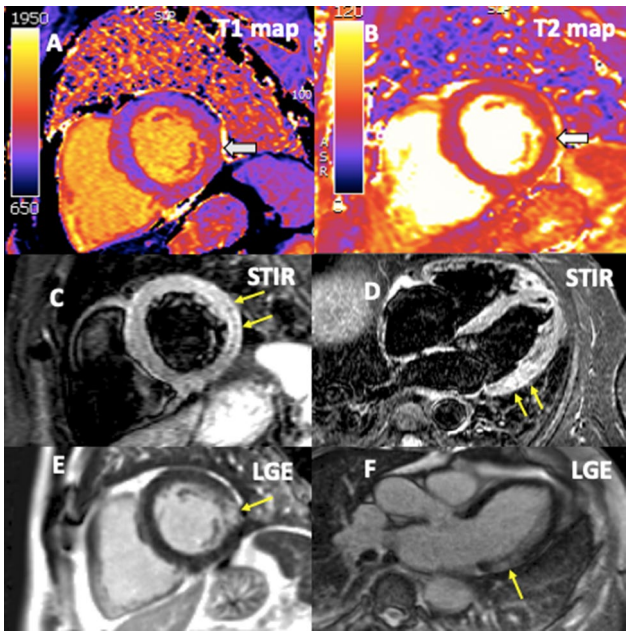
Received: 28 December 2020 / Accepted: 6 January 2021 / Published online: 28 January 2021

A 63 year old male presented with exercise induced chest pain 50 days after diagnosis of CoVid-19 infection (PCR positive) and was referred for cardiovascular magnetic resonance (CMR). Volumetric analysis showed high-normal indexed left ventricular volumes with low-normal ejection fraction of 60% (Supplementary Videos 1–4, *3 long axis views and short axis cine stack*) and mild hypokinesia in the basal lateral wall. Native T1 values in the lateral wall were raised (1076 ms at 1.5 T, normal range 950–1050 ms, Panel A) and T2 values were borderline high (56 ms Panel B). Signal intensity was increased with a T2-short-tau-inversion-recovery sequence in the basal to mid lateral wall (Panels C and D, yellow arrows) with corresponding late gadolinium enhancement (Panels E and F, yellow arrow). Pericardial signal and thickness were normal with a small global pericardial effusion, but no CMR evidence of ventricular interdependence. There was no inducible myocardial ischaemia on perfusion imaging, with a normal global myocardial perfusion reserve of 2.8. Computed tomography (CT) pulmonary angiography was normal and there was non-obstructive atheroma on CT coronary angiography. Troponin and NT-pro BNP were normal, and d-dimer was elevated (930 ng/mL normal < 240).



Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s10554-021-02161-y.

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The CMR findings were diagnostic for myocardial oedema and acute/subacute myocarditis without ischaemia infarction. The myocarditis was presumed to be immune-mediated given the presentation after recovery from CoVid-19 and patient was empirically treated with oral steroids [1]. In repeat CMR after 2 weeks of treatment, tissue characterisation appearances were similar but wall motion abnormality in the basal lateral wall was no longer present and ejection fraction improved to 68%. This report highlights the clinical value of CMR to differentiate between possible causes of chest pain in CoVid-19 cases and demonstrates state-of-art symptom guided use in line with Society of Cardiovascular Magnetic Resonance recommendations [2].

Compliance with ethical standards

Conflict of interest The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. All authors meet the authorship criteria, work is not considered for publication or presentation elsewhere. All authors have read and agreed the final form of the manuscript.

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