

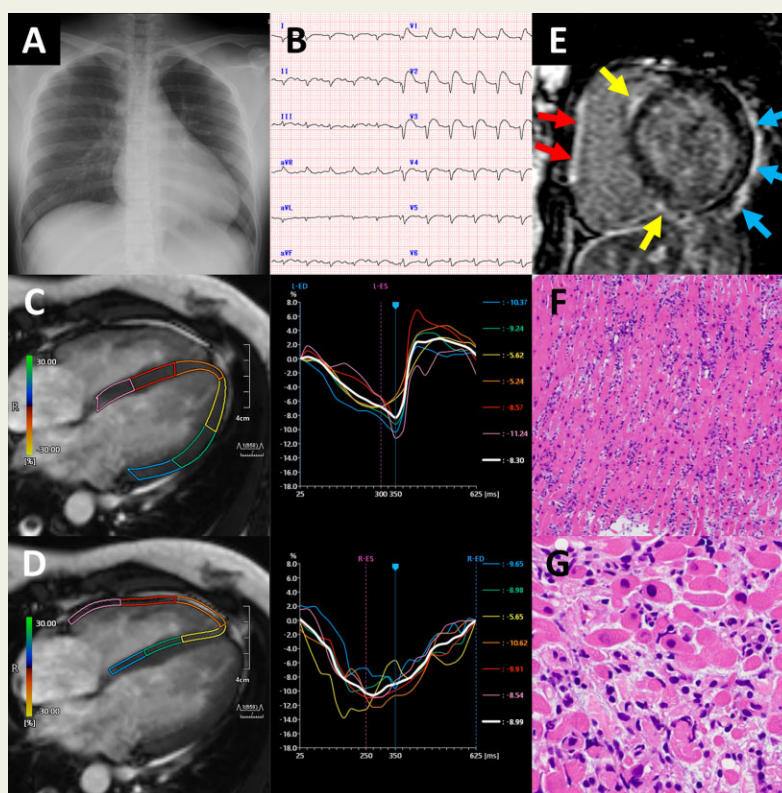
IMAGE FOCUS

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Online publish-ahead-of-print 3 October 2021**Biventricular systolic dysfunction in acute myocarditis after SARS-CoV-2 mRNA-1273 vaccination**Hisataka Maki^{1,†}, Tadao Aikawa^{2,3,†}, Tatsuro Ibe¹, Noriko Oyama-Manabe^{2,*}, and Hideo Fujita¹¹Department of Cardiovascular Medicine, Jichi Medical University Saitama Medical Center, 1-847 Amanuma-cho, Omiya-ku, Saitama 330-8503, Japan; ²Department of Radiology, Jichi Medical University Saitama Medical Center, 1-847 Amanuma-cho, Omiya-ku, Saitama 330-8503, Japan; and ³Department of Cardiology, Hokkaido Cardiovascular Hospital, 1-30, Minami-27, Nishi-13, Chuo-ku, Sapporo 064-8622, Japan

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A 20-year-old woman with a history of Kawasaki disease developed fever (up to 37.5°C) 14 days after her second dose of mRNA-1273 SARS-CoV-2 vaccination (Moderna). Another 2 days later, she presented to the hospital with chest pain and dyspnoea. Chest X-ray showed significant enlargement of the heart (Panel A); electrocardiography showed sinus tachycardia with ST-segment elevation in leads II and V1–4 (Panel B); echocardiography demonstrated global hypokinesis with a very small pericardial effusion; and her cardiac troponin I, creatine kinase, and C-reactive protein levels were elevated at 8801.8 ng/L, 576 U/L, and 1.07 mg/dL, respectively. Her Abbott ID NOW COVID-19 test returned negative. Urgent coronary angiography revealed no coronary abnormalities. Cardiovascular magnetic resonance feature tracking demonstrated biventricular systolic dysfunction with reduced longitudinal strain (Panels C and D and Supplementary data online, Videos S1 and S2; segments and regional strain are presented with the same colour): left ventricular (LV) and right ventricular (RV) ejection fractions were 30.4% and 23.9%, respectively. Late gadolinium-enhanced imaging (Panel E) showed patchy hyperenhancement of the RV side of the interventricular septum (yellow arrows), RV free wall (red arrows), and pericardium (blue arrows), indicating diffuse myocardial injury with pericarditis. Acute myocarditis was confirmed by endomyocardial biopsy demonstrating lymphocytic infiltration in the myocardium (Panels F and G). She received diuretics, dobutamine (started at 3 µg/kg/min and gradually discontinued), enalapril, and bisoprolol, resulting in significant improvement of her LV ejection fraction to 59.0% two weeks after treatment. Although it is difficult to prove a causal link between myocarditis and SARS-CoV-2 vaccination, our case highlights that careful evaluation of biventricular function should be exercised in individuals presenting with chest pain or dyspnoea after SARS-CoV-2 vaccination.

**Supplementary data**Supplementary data are available at *European Heart Journal - Cardiovascular Imaging* online.**Funding**

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