

Myopericarditis After COVID-19 mRNA Vaccination

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A previously healthy 49-year-old man presented to hospital 11 days after a 2nd dose of the BNT162b2-mRNA (Pfizer-BioNTech) vaccine for essential workers. He began to notice fever, appetite loss, cough, and orthopnea 4 days after vaccination. Oral nonsteroidal anti-inflammatory drug and antibiotics for several days failed to relieve his symptoms. On admission, physical examination revealed fever of 37.3°C, blood pressure of 95/67 mmHg, pulse of 93 beats/min and pericardial friction rub on auscultation. ECG demonstrated low voltage in the limb leads and poor R waves in V1–2. Chest X-ray showed mild congestion (**Figure A**). Laboratory evaluation showed elevated B-type natriuretic peptide of 1,113.0 pg/mL, troponin I of 4,364.5 pg/mL, and C-reactive protein of 19.78 mg/mL. Blood cell count was normal with no peripheral eosinophilia. Nasopharyngeal SARS CoV-2 antigen and other viral studies were negative. Cardiac magnetic resonance imaging (CMR) showed diffuse myocardial edema on T2-weighted imaging (**Figure B**), reduced left ventricular ejection fraction of 33%, diffuse late gadolinium enhancement (LGE), and increased global native T1 value of 1,301 ms (**Figure C**). Endomyocardial biopsy revealed diffuse lymphocytic infiltrates and some eosinophils (**Figure D**), confirming the diagnosis of myocar-

ditis. Oral diuretics and aspirin relieved his symptoms. CMR on day12 showed resolution of the myocardial edema (**Figure E**), decrease in the native T1 value to 1,176 ms (**Figure F**), and partial LGE. He was discharged home on day 15.

To our knowledge, this is the first case of presumed COVID-19 vaccine-related myocarditis diagnosed by myocardial biopsy and CMR in a middle-aged man. Although myocarditis following COVID-19 vaccine can be mild and occur in the young,¹ more intense myocarditis might occur in individuals of any age. Thus, careful attention to myocarditis is necessary.

Disclosure

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Reference

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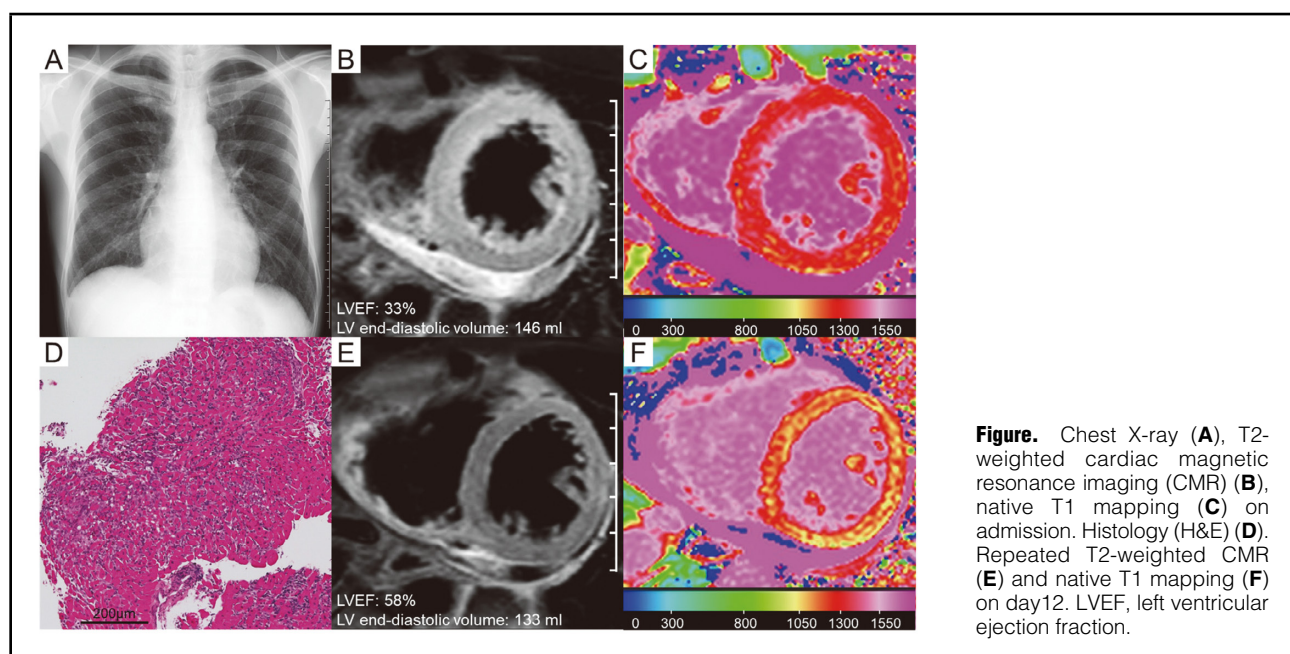


Figure. Chest X-ray (**A**), T2-weighted cardiac magnetic resonance imaging (CMR) (**B**), native T1 mapping (**C**) on admission. Histology (H&E) (**D**). Repeated T2-weighted CMR (**E**) and native T1 mapping (**F**) on day12. LVEF, left ventricular ejection fraction.