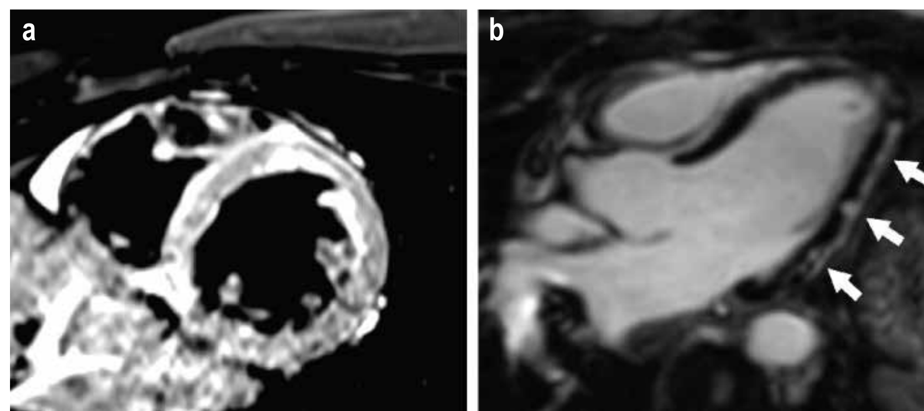
CLINICAL SNAPSHOT

Acute Perimyocarditis Following First Dose of mRNA Vaccine Against COVID-19



Cardiac magnetic resonance imaging: (a) myocardial edema (short axis, T2-weighted image); (b) subepicardial late gadolinium enhancement (three-chamber view)

A 28-year-old man was admitted to hospital with left-sided chest pain 9 days after BioNTech/Pfizer vaccination. Fatigue and fever had occurred 5 days before admission. ST-segment elevations on ECG and blood test results (troponin T 1.30 ng/ml, reference ≤ 0.03; CRP 10.2 mg/dL, ≤ 0.5) pointed to acute perimyocarditis. This was confirmed by cardiac magnetic resonance imaging, which showed slightly reduced left ventricular pump function, myocardial edema *(Figure a)*, and subepicardial late gadolinium enhancement *(Figure b)*. Comprehensive diagnostic workup found no evidence of infectious or rheumatological causation. SARS-CoV-2 infection was ruled out by PCR testing and the absence of antibodies to the nucleocapsid protein. However, the presence of antibodies to the spike protein (6.62 U/mL, <0.80) indicated an early immune response caused by the vaccine. After 4 days and ibuprofen treatment, the patient was discharged from the hospital free of symptoms. This and other case reports do not prove a causal relationship between mRNA vaccination and (peri)myocarditis. In the USA, however, the Advisory Committee on Immunization Practices now assumes that (peri)myocarditis is a complication of vaccination with an incidence of around 1 : 20 000 in 18– to 24-year-old men that usually heals without long-term consequences.

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