

### COVID-19 vaccine Gamaleya National Research Center of Epidemiology and Microbiology

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#### Myocarditis: case report

A 29-year-old man developed myocarditis following COVID-19 vaccination with COVID-19 vaccine Gamaleya National Research Center of Epidemiology and Microbiology [route and dosage not stated].

The man presented with generalised malaise and chest pain. Two days prior, he received the second dose of COVID-19 vaccine Gamaleya National Research Center of Epidemiology and Microbiology [Sputnik V COVID-19 vaccine]. His medical history was unremarkable. During the examination, he was afebrile and had sinus tachycardia with S3 noted on auscultation. The jugular venous pressure was 5cm of water. Vesicular breath sounds were heard. No swelling in the legs and all other examination was unremarkable. An electrocardiogram revealed ST-segment elevation in precordial leads. He was admitted in a stable condition with no vasopressors, circulatory support or mechanical ventilators. The peak troponin-I level was 3.04 ng/mL and white blood cell count of 13500 per mm<sup>3</sup>. Echocardiography revealed normal left ventricular (LV) size with increased LV wall thickness and global hypokinesia LV ejection fraction (LVEF) of 30–35%. The right ventricular systolic function was found to be mildly impaired. Coronary angiography was performed due to ST-segment elevation in the ECG, high troponin-I, suspected thrombotic acute coronary syndrome and showed patent epicardial coronary arteries with a slow flow of his left anterior descending artery. Histopathological examination of endomyocardial biopsy specimens revealed lymphocytic infiltration consistent with lymphocytic myocarditis.

The man with the diagnosis of the lymphocytic myocarditis, immunosuppression with prednisolone, methylprednisolone and mycophenolate mofetil was initiated. He received combination therapy with carvedilol, enalapril and spironolactone for heart failure. After two days of immunosuppressive therapy, the LVEF improved with resolution of chest pain and decreased levels of troponins at the time of discharge. He was discharged seven days after the admission. Post discharge during follow-up after four months, he showed no illnesses. Echocardiography and follow-up MRI revealed normal cardiac function.

Naghashzadeh F, et al. Myocarditis following rAd26 and rAd5 vector-based COVID-19 vaccine: case report. ESC heart failure 9: 1483-1486, No. 2, Apr 2022. Available from: URL: <http://doi.org/10.1002/ehf2.13821>

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