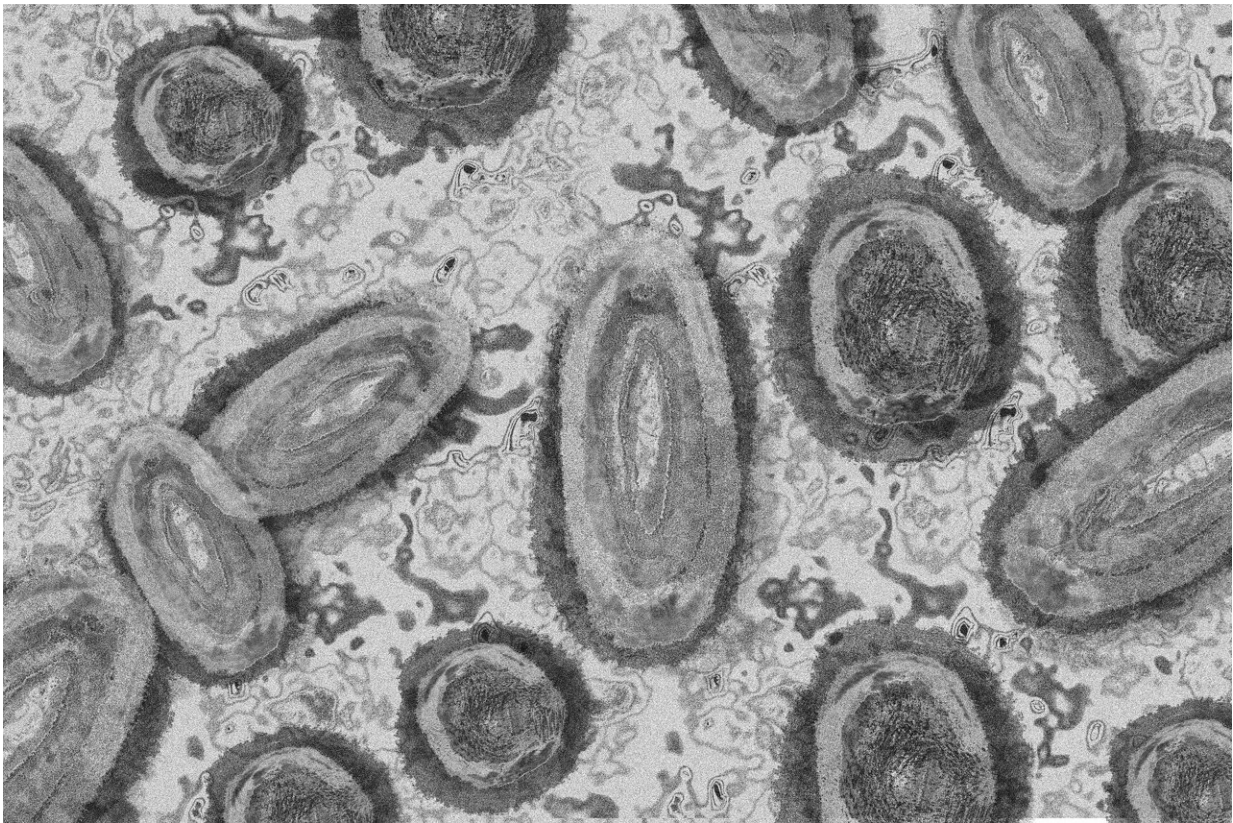


Monkeypox has potential to cause heart problems

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A 31-year-old male with confirmed monkeypox infection developed acute myocarditis approximately one week following the onset of monkeypox symptoms, according to a case study published today in

JACC: Case Reports.

Monkeypox is a disease caused by the [monkeypox virus](#), part of the same family as the virus that causes smallpox, that causes a pimple or blister-like rash on the hands, feet, face, genitals and other parts of the body. Monkeypox was first reported in the EU in May 2022, as well as the United States and other non-endemic countries, and cases are increasing. Myocarditis, an inflammation of the heart muscle, is typically caused by a viral infection. Myocarditis was previously associated with smallpox infection, a more aggressive virus, and the case study authors said that "by extrapolation, the monkeypox virus could have tropism for myocardium tissue or cause immune-mediated injury to the heart."

"Through this important [case study](#), we are developing a deeper understanding of monkeypox, viral myocarditis and how to accurately diagnose and manage this disease," said Julia Grapsa, MD, Ph.D., editor-in-chief of *JACC: Case Reports*. "The authors of this study have used CMR mapping, a comprehensive imaging tool, to help with the diagnosis of myocarditis. I commend the authors on this valuable clinical case during a critical time as monkeypox continues to spread globally."

The patient presented to a health clinic five days following the onset of monkeypox symptoms, including malaise, myalgia, fever and multiple swollen lesions on the face, hands and genitalia. Positive monkeypox infection was confirmed with a PCR swab sample of a skin lesion. The patient returned to the [emergency department](#) three days later reporting chest tightness radiating through the left arm.

The patient was admitted to an [intensive care unit](#) following initial routine examination with the clinical suspicion of acute myocarditis. The initial ECG showed sinus rhythm with nonspecific ventricular repolarization abnormalities and routine laboratory tests revealed elevated levels of C-reactive protein, creatine phosphokinase (CPK),

high-sensitivity troponin I and brain natriuretic peptide (BNP), all of which can indicate stress injury to the heart. The results of the cardiac magnetic resonance (CMR) study performed on the patient were consistent with myocardial inflammation and a diagnosis of acute myocarditis.

"This case highlights cardiac involvement as a potential complication associated with monkeypox infection," said Ana Isabel Pinho, MD, department of cardiology at São João University Hospital Center in Portugal and lead author of the study. "We believe that reporting this potential causal relationship can raise more awareness of the scientific community and [health professionals](#) for acute myocarditis as a possible complication associated with monkeypox; and might be helpful for close monitoring of affected patients for further recognition of other complications in the future."

The patient was discharged after one week with a full recovery. The authors said further research is needed to identify the relationship between monkeypox and heart injury.

Monkeypox is transmitted through close contact with lesions, bodily fluids or respiratory droplets. In addition to rash, symptoms may include fever, chills, swollen lymph nodes, respiratory symptoms and muscle aches. Most infections are mild, and symptoms can last between two to four weeks. Vaccination is recommended for individuals who have a known or presumed exposure to the virus.

More information: Acute Myocarditis—a new manifestation of Monkeypox infection?, *JACC: Case Reports* (2022).

Provided by American College of Cardiology

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