



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

☆ **Complex Clinical Cases**

**FULMINANT MYOCARDITIS, A RARE CASE ASSOCIATED WITH SARS-COV-2 INFECTION**

Moderated Poster Contributions  
Monday, May 17, 2021, 1:30 p.m.-1:40 p.m.

Session Title: Inflammation and Thrombosis in COVID-19  
Abstract Category: FIT: Coronavirus Disease (COVID-19)  
Presentation Number: 1087-11

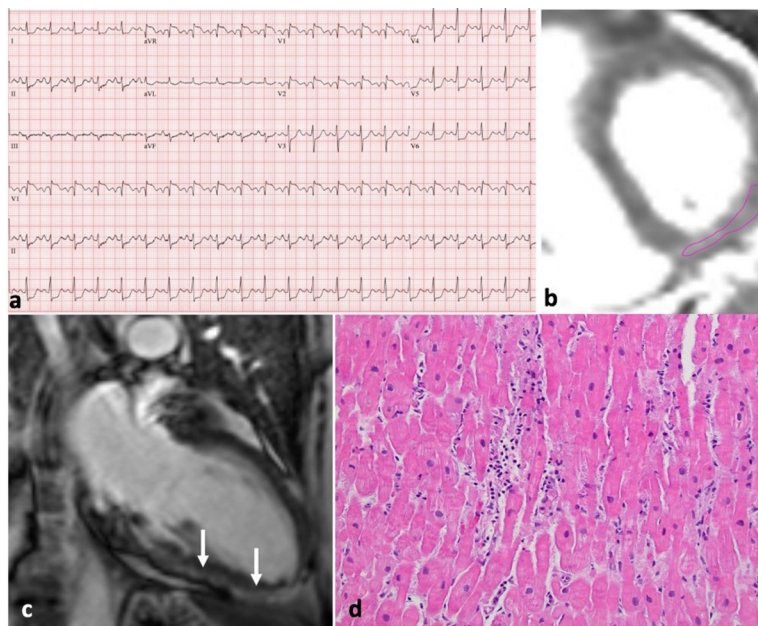
Authors: *Anish Nadkarni, Kelly Paschke, Beth Foreman, Anjali Satoskar, Rami Kahwash, The Ohio State University Wexner Medical Center, Columbus, OH, USA*

**Background:** Fulminant myocarditis (FM) is a rare, life-threatening sequela of viral infection. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an emerging cause of myocarditis but its association with FM is not well defined.

**Case:** 60 year old female presented nine days after testing positive for SARS-CoV-2 with tachycardia, diffuse ST depression on ECG (Figure 1a), and severe troponin elevation. Viral symptoms resolved at presentation. She developed rapid hemodynamic compromise and cardiogenic shock consistent with FM.

**Decision-making:** TTE revealed severe LV systolic dysfunction. Coronary angiography negative for CAD. Inotropic support was initiated, however, due to persistent shock and life-threatening ventricular arrhythmias, VA-ECMO was implemented for mechanical circulatory support. Cardiac MRI (CMR) showed diffuse T2 signal hyperintensity, elevated ECV, and LGE consistent with myocarditis based on Lake Louise Criteria (Figure 1b-c). Endomyocardial biopsy (EMB) showed lymphocytic infiltrate consistent with viral myocarditis (Figure 1d). The patient recovered, however, LV function remained mildly reduced at discharge.

**Conclusion:** This unique case demonstrates a severe fulminant myocarditis in the setting of SARS-CoV-2 infection. CMR and EMB aided in diagnosis of FM. The pathophysiology of direct cardiac myocyte injury and inflammatory cascade leading to FM in SARS-CoV-2 remains to be elucidated.



**Figure 1** (a) Tachycardia and diffuse ST segment depressions on ECG. (b) Cardiac MRI showing T2 signal hyperintensity at 66 (normal <53) and (c) late gadolinium enhancement. (d) Endomyocardial biopsy showing viral myocarditis with a lymphocyte predominant infiltrate and evidence of myocyte necrosis.