

Successful Conservative Management of COVID-19-Induced Fulminant Myocarditis

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ABSTRACT

Fulminant myocarditis (FM) is a severe clinical condition mainly characterized by rapidly progressive heart failure, arrhythmia, and hemodynamic instability. We describe the case of a young patient admitted for COVID-19-associated fulminant myocarditis. Optimal pharmacologic management with inotropic support had a successful outcome.

An 18-year-old female presented to the emergency department with febrile temperature, progressive exertional dyspnea, and low oxygen saturation in room A. Chest X-Ray showed multiple bilateral consolidations. A SARS-CoV-2 PCR was positive for SARS-CoV-2 RNA. The patient was admitted to the COVID ward and started Oxygen therapy with standard COVID-19 treatment. The next morning, she presented with recent onset of palpitations, low blood pressure, and symptoms of pulmonary edema. ECG demonstrated new-onset atrial fibrillation. Transthoracic echocardiogram showed global impairment in left ventricular systolic function with a left ventricular ejection fraction of 32%. Cardiac MRI (CMRI) demonstrated generalized severe myocarditis. The cardiac magnetic resonance image showed Lake Louise's criteria for myocarditis. As such, we diagnosed our patient with COVID-19-associated myocarditis based on CMRI appearances and positive SARS-CoV-2 swab. Admission in ICU, inotropic support, anti-failure medication, and amiodarone were added to her treatment with a favorable clinical response.

This case highlights that COVID-19-associated myocarditis can present as a new atrial fibrillation and heart failure with classic COVID-19-associated symptoms. The importance of this case in the demonstration of the severe cardiac involvement in a young patient without previous risk factors, positive for COVID-19, and the favorable response to the medical treatment given.

Keywords: COVID-19 fulminant myocarditis, Heart failure, Paroxysmal atrial fibrillation, Intensive care, Inotropic support

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