

## COVID-19 Induced Stress-Induced Cardiomyopathy Mimicking STEMI without Coronary Artery Disease

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**Introduction:** COVID-19 has spread, causing one of the worst pandemics in history. This virus is primarily associated with respiratory complications such as pneumonia, but it can also induce various cardiovascular disease. Cases of SCMP (Stress-Induced Cardiomyopathy) occurring in COVID-19 patients are reported infrequently. In this case, a patient developed SCMP during a COVID-19 infection. Diagnostic challenges arose as it mimicked STEMI with ST elevation. However, despite being in isolation, a coronary angiography(CAG) ruled out STEMI and confirmed SCMP, making it an unusual case.

**Case Report:** An 84-year-old female with a history of diabetes mellitus presented to the ER with dyspnea. She tested positive for COVID-19 on the same day and subsequently sought emergency care due to worsening dyspnea by calling 119. During her ER visit, a chest CT revealed diffuse ground glass opacities in both lower lung lobes, (figure C) indicating viral pneumonia. The patient presented with severe dyspnea and tachycardia. The EKG showed ST elevation and T-wave inversion in leads V2-6.(figure A) Cardiac markers, CK-MB at 18.1 ng/mL and Troponin T at 0.308 ng/mL, were elevated. Based on diagnosis of STEMI, an emergency CAG was performed, but no occlusion was found.(figure E) The echocardiography revealed akinesia of the apical and mid-ventricular segments with hypercontractile basal segments and a reduced ejection fraction (EF) of 30%. (figure D). Remdesivir given for 5 days. On the 5th day, ST elevation resolved on EKG.(figure B) On the 10th day, echocardiography showed improved apical regional wall motion and EF.(Figure F) Subsequently, she improved and was discharged.

**Conclusion:** This case highlights SCMP in a COVID-19 patient, presenting diagnostic challenges due to its resemblance to STEMI with ST elevation. However, a CAG ruled out STEMI and confirmed SCMP despite the patient being in isolation, making it a unique case. Prompt management with remdesivir led to resolution of ST elevation and improvement in cardiac function. Further studies are needed to better understand the relationship between COVID-19 and SCMP, and to optimize the diagnosis and management of such cases.

