

## SARS-CoV-2, a novel virus with an unusual cardiac feature: inverted takotsubo syndrome

Jorge Solano-López , Angel Sánchez-Recalde\*, and José Luis Zamorano

Department of Cardiology, Hospital Universitario Ramon y Cajal, Madrid, Spain

\* Corresponding author. Department of Cardiology, Hospital Universitario Ramon y Cajal, Madrid, Spain. E-mail: recalde@secardiologia.es

Standfirst. Takotsubo cardiomyopathy constitutes a differential diagnosis of acute coronary syndrome, being particularly challenging to identify in its atypical presentations. We present an unusual case of inverted Takotsubo associated with SARS-CoV-2 infection.

A 50-year-old man with no medical history other than an asymptomatic benign mediastinal tumour since childhood arrived at the emergency department because of 8 days of cough, dyspnoea, and fever. Chest X-ray presented bilateral infiltrates, and CT scan showed perihilar ground-glass opacities (Panels A and B). The PCR

detection assay for SARS-CoV-2 was positive and lab tests showed moderate elevation of BNP (790 pg/mL) and troponin I (64 ng/mL).

The patient started complaining of mid-sternal chest pain, and physical examination revealed signs of peripheral hypoperfusion and systolic blood pressure <90 mmHg. The electrocardiogram revealed a 2 mm ST-segment elevation in the inferior and lateral leads (Panel E). Transthoracic echocardiogram (TTE) showed akinesia of all basal segments. An emergent coronary angiography showed normal coronary arteries (Panels C and D). Left ventricular angiography presented basal segment akinesia and hypercontractility of the mid-apical segments with elevated diastolic pressure (Panels F–H; [Supplementary material online, Video S1](#)). Based on this finding, the diagnosis of inverted (basal) Takotsubo cardiomyopathy (TC) was made.

Subsequently, after 10 days of medical support and dedicated treatment for SARS-CoV-2, the patient progressed adequately. Before discharge, a new TTE demonstrated a significant improvement of left ventricular contractility ([Supplementary material online, Video S2](#)).

TC constitutes a differential diagnosis of acute coronary syndrome, being particularly challenging to identify in its atypical presentations. To the best of our knowledge, this is the first reported case of inverted TC associated with SARS-CoV-2 infection.

[Supplementary material](#) is available at *European Heart Journal* online

