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This publication URL: https://archive-ouverte.unige.ch/unige:163121
Publication DOI: 10.1093/eurheartj/ehaa306

CARDIOVASCULAR FLASHLIGHT

Typical takotsubo syndrome triggered by SARS-CoV-2 infection

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Takotsubo syndrome (TTS) is an important differential diagnosis of myocardial injury, which may play a significant role in the COVID-19 pandemic. This report describes a typical case of TTS triggered by SARS-CoV-2 infection.

An 83-year-old lady treated for chronic hypertension was hospitalized for acute chest pain on 18 March 2020, 21 days after the COVID-19 outbreak started in Geneva, Switzerland. She described a 5/10 oppressive mediosternal non-radiating chest discomfort associated with mild breathlessness and dry cough since 15 March. Physical examination was unremarkable. ECG (Panel A) showed <1 mm ST-segment elevation in all precordial leads with deep T-wave inversions. High-sensitive cardiac troponin T was elevated at 1142 ng/L (<14 ng/L). Chest X-ray did not detect any pulmonary opacity. Echocardiography revealed typical left ventricular apical ballooning with hyperkinetic basal segments. Coronary angiography showed non-significant lesions (Panel B) with a typical takotsubo syndrome (TTS) image on ventriculography (Panel C). At day 3, the patient started developing fever, showing increasing biological signs of inflammation, and clear bilateral lung X-ray opacities (Panel D). Nasopharyngeal swab was negative for SARS-CoV-2, but the initial positive immunoglobin A and negative immunoglobulin G serology pattern proved acute infection. The patient recovered progressively on conventional heart failure medication without the need for oxygen/ventilation, and echocardiography showed only mild residual apical hypokinesis on the day of discharge (day 10).

This is to our knowledge the first case of TTS described in the COVID-19 pandemic. The huge emotional stress at the population level and respiratory infections caused by COVID-19 may represent potential triggers in this context. Myocardial injury, frequently reported in patients with COVID-19, is usually attributed to sepsis and/or hypoxaemia and/or underlying coronary artery disease, as well as myocarditis. We believe that TTS may also play a significant role in the COVID-19 pandemic.

We would like to thank Nicolas Johner, MD who helped in designing the figure.