Reply to “SARS-CoV-2-associated Takotsubo is not necessarily triggered by the infection”

AUTHOR(S)

Yasar Sattar, Waqas Ullah, Talal Almas, M. Chadi Alraies

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Correspondence

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We hereby take the opportunity to thank Dr. Finsterer for his comments on our manuscript titled, "COVID-19 Presenting as Takotsubo Cardiomyopathy (TTC) Complicated with Atrial Fibrillation" [1,2]. The points raised by Dr. Finsterer are indeed very pertinent and ought to be addressed. In accordance with the question raised by the author, the exclusion of acute coronary syndrome (ACS) prior to the diagnosis of TTC is mandated in order to meet all inclusion criteria stipulated by the Mayo Clinic. In our manuscript, we have highlighted that coronary angiography was not performed due to a concoction of factors. Our patient manifested a predilection towards not wanting to undergo angiography [2]. Additionally, we erred to the side of caution in order to curb the risk of procedural transmission of COVID-19 [2]. Furthermore, we sought to lower the uptake of potentially unnecessary testing per patient preference, thereby avoiding coronary angiogram [2]. Additionally, American college of Cardiology, and Mayo clinic criteria require ruling out myocarditis and ACS in order to mark diagnosis of TTC but as an exception an obstructive coronary artery disease cannot rule out TTC as arterial occlusion itself can manifest as mechanical stress that can potentiate TTC [3,4]. The ACS would have been a possibility given the presence of risk factors but echocardiographic and EKG findings were not synonymous for any specific arterial focus. Although Dr. Finsterer is correct about the necessity to rule out viral myocarditis, a cardiac MRI, due to its unavailability, was not performed. While endomyocardial biopsy is the standard for diagnosis of viral myocarditis per Dallas criteria, it cannot fully delineate the cause owing to the invasive nature and the sampling error. However the data also suggest that Dallas criteria for myocarditis is more favourable with positive results in two thirds of patients with over five biopsies [5]. Our patient is presumed to have TTC given apical ballooning/akinesia on Transthoracic echocardiography (TTE), troponin elevation, psychological stress, and inflammatory stress of COVID-19 [2,3]. Our patient had psychological fear when he came to know about a positive nasopharyngeal swab. Furthermore, as the cardiovascular manifestations of COVID-19 are on rising end, and the recent spike in stress cardiomyopathy, the diagnosis of TTC was high among every other differential [6].

It is pertinent to note that our patient didn't have any hemodynamic decompensation requiring vasopressors, although these medications would have been the ideal choice in shock given the absence of left ventricular outflow tract obstruction on echocardiogram [3]. Due to the tremendous amount of overlap between acute coronary syndrome (ACS) and TTS, the initial recommendations vouch for the use of aspirin and plavix (DAPT) in order to treat the presumptive diagnosis of an ACS unless proven otherwise [7]. Secondly, double antiplatelet therapy (DAPT) has proven to be effective in managing TTS, a fact that mandates the uptake of DAPT in patients with TTS [7]. DAPT was continued for three months for TTS in addition to aspirin use for COVID-19 [3,8]. Since our case was complicated by atrial fibrillation in the context of COVID-19 and TTS, and since the patient had a CHAD2VASc score of 4, there is an overarching need for anticoagulation with Eliquis [8]. Furthermore, TTS can manifest with delayed complications, including aneurysm, free wall rupture and delayed thromboembolism. For this reason, our patient was followed for 2 weeks after discharge with a limited transthoracic echocardiogram to rule out thrombus formation. Furthermore, the complications of TTS can be delayed including aneurysm, free wall rupture and delayed thromboembolism, for this reason our patient was followed 2 weeks after discharge with a limited transthoracic echocardiogram to rule out thrombus formation. Another follow up appointment was commenced at 3 months where we stopped the DAPT and continued only OAC for the rest of life given atrial fibrillation.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Yasar Sattar [a,*]
Waqas Ullah [b]
Talal Almas [c]
M. Chadi Alraies [d]
[a] *Icahn School of Medicine at Mount Sinai Elmhurst Hospital, Queens, NY, USA*
[b] *Abington Jefferson Health, Abington, PA, USA*
[c] *Royal College of Surgeons in Ireland, Dublin, Ireland*
[d] *Wayne State University/Detroit Medical Center, Detroit, MI, USA*
* Corresponding author at: Icahn School of Medicine at Mount Sinai Elmhurst hospital, New York, 79-01 Broadway, Queens 11373, NY, USA.
E-mail address: mdyasarsattar@gmail.com (Y. Sattar)
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