

Peer Review File

Article Information: <https://dx.doi.org/10.21037/atm-22-4164>

Response to comments made by Reviewer A

1. Comment

Page 5 line 7-8 mentioned single chamber ICD but the event intracardiac ECG recording in Figure 7 showed an atrial tracing. This is apparently a dual-chamber ICD.

Response

We sincerely appreciate all the comments by Reviewer A. We implanted a single chamber ICD with a VDD lead which incorporates a floating atrial dipole that can sense the P wave but cannot pace the atrium (Linor^{Smart} DX [Biotronik SE & Co, Berlin, Germany]). We have clarified this in the text (page 5, line 13-14).

2. Comment

More information about potential alternative etiologies should be included. For example, the presence or lack of any viral prodrome, fever, and the result of viral PCR study for viruses that commonly cause myocarditis¹. The possibility that the myocarditis is viral or idiopathic and the timing of the vaccination is just a coincidence should be mentioned.

Response

We definitely agree with the reviewer that there is a possibility that the myocarditis is viral or idiopathic and the timing of the vaccination is just a coincidence. We have acknowledged this in our manuscript (page 4, line 16-19). Hence, throughout our manuscript, we used the word “COVID-19 vaccine associated myocarditis”. As it is well known, association does not imply causality.

3. Comment

Relevant medication history or family history should be included such as if the patient was on any stimulant for his ADHD and presence or lack of a family history of sudden cardiac death.

Response

Our patient was on amphetamine-dextroamphetamine for his ADHD. We have added this information to our manuscript (page 3, line 11). He has no family history of sudden cardiac death. We have added this to the manuscript (page 3, line 15)

4. Comment

Figure 5. The article said the VT location could be consistent with the scar location. Some explanation should be made in the description of figure 5 on how the morphology helped to determine the possible exit of the VT. It might also be worth mentioning that the true location of the VT can only be determined by mapping.

Response

We agree with the reviewer that the true location of the VT can only be determined by mapping. We have revised manuscript as regards to the exit of the VT (page 6, line 8-11).

5. Comment

Some minor grammatical errors or unclear expressions need correction or rephrasing. (eg. page 3 line 23-page 4 line 1. Page 5 line 9.)

Response

These have been rephrased (page 4 line 3-5; page 5, line 15-16).

Response to comments made by Reviewer B

1. Comment

This case report details a case of myocarditis following Pfizer vaccine. Given that other pathologies were excluded this is most likely vaccing induced. The chronology is well presented and the evaluation is appropriate. The authors conclude that this entity may not be benign and may have long term consequence.

Intial presentation with sinus tach, that converts to VT and then to AF with RVR needs some explanation. Was the patient cardioverted to AF with a shock? How is this possible if that is not the case?

Response

We appreciate all the comments by the reviewer. The patient was in sinus tachycardia at presentation and then he had VT. The VT spontaneously terminated and the underlying rhythm after VT termination was AF. This was the main reason we performed a diagnostic EP study to make sure that the wide complex tachycardia was truly VT by ruling out SVT with aberrancy or pre-excited tachycardia. We have no explanation other than the VT must have triggered the AF. We have clarified the rhythms in the manuscript (page 3, line 18-21).

2. Comment

The VT morphology is most likely left basal septal as the R wave is dominant in Lead I. Lateral exit would have a negative or a biphasic R. The QRS is also relatively narrow. Please comment. Although this VT does not align with the enhancement, that does not exclude myocarditis and scar as the underlying substrate.

Response

We appreciate this comment by the reviewer and we agree with the reviewer about the exit of the VT. We have edited the manuscript accordingly (page 6, line 8-11).

3. Comment

Was there any consideration for treatment with steroids? Would a PET scan at presentation make any difference to the management?

Response

We did not consider treatment with steroids during the initial presentation, likely because the patient did not have any further VT once the diagnosis was made and patient was started on amiodarone. Unfortunately, we did not obtain a PET scan at presentation. Hence, we do not know if the findings on the PET at that point would have changed our management.

Response to comments made by Reviewer C

- 1. Thorough presentation of the case, with inclusion of all relevant aspects of the CARE checklist. Given that you state vaccine-induced myocarditis is a diagnosis of exclusion, were any other etiologies excluded besides sarcoidosis?**

Response

We considered the possibility of viral myocarditis including the possibility of COVID-19-related myocarditis. However, our patient tested negative for COVID-19 infection. We have acknowledged in our manuscript the possibility that the myocarditis may be idiopathic and the timing of the vaccination is just a coincidence (page 4, line 16-19). Hence, throughout our manuscript, we used the word “COVID-19 vaccine associated myocarditis”.

- 2. Further, the first mention I see of metoprolol is in the last paragraph of the case presentation, suppose you could clarify when that was initiated in this patient.**

Response

Metoprolol was started following EP study during his initial admission before he was discharged home. This has been clarified in the manuscript (page 4, line 19).

- 3. Methods, Is this the first reported case of ventricular tachycardia secondary to COVID vaccine myocarditis? If so, suppose you could make that clear in your report. If not, consider citing other published works in your discussion of this case.**

Response

We appreciate this comment by the reviewer. As far as we know, only one case has been reported previously where the initial presentation of COVID-19 vaccine associated myocarditis was sustained ventricular tachycardia. We have cited this publication in our discussion of this case (page 6, line 3-5; page 8, line 15-18).