

Amyloid β -related angiitis of the central nervous system occurring after COVID-19 vaccination: A case report

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Response to Reviewer #1

Specific Comments to Authors:

1. Authors should hold in their records the serial number of the vaccine performed. Registering this data in the World Health Organization adverse events is advised.

Response: Unfortunately, the rod number for the vaccines cannot be disclosed without consent. Nonetheless, we will positively consider reporting these adverse effects to WHO. The Japanese Ministry of Health, Labour, and Welfare has already reported the case.

2. In the physical examination, the authors should describe pyramidal signs.

Response: Please note that this has been mentioned in the Physical examination section on page 4.

3. How many times were the starting neurological signs? Stroke code? Or was it progressive?

Response: This has been explained in the History of present illness section on page 4.

4. It is missing the images in the manuscript. a) It is advised to include at least three different views of the lesions or DW, T2, and flair.

Response: To conform to your suggestion, we have added an image.

5. The discussion should be improved. a) Could the authors provide a table with other vaccines or diseases already associated with ABRA?

Response: Diseases related to ABRA are CAA and CAA-RI, but no vaccine-induced cases have been reported for these. There are many neurological diseases that are causally related to vaccines, but most of them are not related to ABRA, therefore the table may not have much significance.

- b. Explain “why the findings in the biopsy are not only associated with aging?”

Response: The pathological diagnosis of ABRA has been revised. Although there are age-related changes, we have emphasized that there is an immune response to amyloid- β .

This is because age-related changes do not cause vasculitic vasculitis.

- c) Provide reference and discuss the recent Boston Criteria. “The Boston criteria version 2.0 for cerebral amyloid angiopathy: a multicentre, retrospective, MRI-neuropathology diagnostic accuracy study.

Response: A discussion on the Boston criteria has been included in the Discussion.

Response to Reviewer #2

Specific Comments to Authors:

The authors reported a case of ABRA that manifested 2 weeks after COVID-19 vaccination. It's an interesting view since the complications of CNS have raised a lot of attentions recently due to COVID-19 as well as COVID-19 vaccine. Nevertheless, I have some suggestions.

1. Please add an injection timeline of the two doses of COVID-19 vaccine and the detail information of injected vaccines

Response: Please note that this is detailed in Chief complaints section on pages 3-4.

2. Please add the reference ranges of the white blood cell count, red blood cell count, platelet count, C-reactive protein, and other relative laboratory tests

Response: Please note that this has been stated in Laboratory examinations section on pages 4 to 5, along with our results and has also been discussed.

3. Although the patient had a better recovery after serial prednisolone administration, it's still lack of data which supported the "trigger of ABRA" –excessive immune response. I think the classification of peripheral blood leukocytes would help.

Response: The blood picture was relatively normal, with an increase in the number of eosinophils at the onset, but the changes were too minor to be considered as an abnormal immune response. The immune response appears to be localized rather than systemic.