Reviewer’s report

Title: CASE REPORT: A GIANT ARACHNOID CYST MASKING ALZHEIMER’S DISEASE

Version: 1 Date: 22 Nov 2018

Reviewer: Kayako Matsuo

Reviewer's report:

My main concern is their fMRI analysis procedure. The authors processed fMRI data just as the same way as for a normal subject. However, the patient had a large distortion because of the giant cyst. In such a case, the image processing is challenging, and in many cases, some part of the processing (including segmentation and warping to the standard brain template space) may be given up. They should correctly recognize this problem in the image processing technology. At least, they should show the results on original native brain sections of the patient with the cyst.

My next concern is that the authors have not yet organized their manuscript sufficiently. They failed to explain the purpose of the paper and the methods to achieve the goal in a comprehensible way. They may want to ask a senior researcher to give them a concrete and specific advice on the manuscript, and then ask a copy-editing company to correct the English writing.

I think this paper has some interesting points. I would like to review this paper again after they improve the manuscript sufficiently.

Introduction

* I would like to request authors to clearly describe their purpose of this paper in Introduction. They currently only explained about the background. They should also indicate why they performed various measurements shown in the following part of the paper.

Methods

* Table 1. Was it necessary to show the details of Edinburgh Inventory? We usually only report the handedness score.

* Sensorimotor task: They may want to use "a block-design" instead of "a block task" in line 143.
* Sensorimotor task: Why did they vary the duration of the rest blocks? Maybe, to avoid the synchronization of time and fMRI signals?

* I cannot understand the following sentence (line 145):

To avoid time x signal interactions blocks were presented in randomized order, but movements of all five digits were performed before repetition of a digit.

* fMRI data processing and analysis: authors may want to modify this subheading because this part also contains data processing of the structure images and DTI.

* I would like authors to demonstrate the validity of the segmentation procedure of patient's brain with a large distortion.

* The journal name of the reference #12 is "Magnetic Resonance in Medicine". Please remove "official journal of the Society of".

* Review of literature: according to the main text, authors excluded studies in children. But Table 3 indicates <10 for Age of patients for Horiguchi, 2000. Isn't this a discrepancy?

Results

* At the outset, "A 66-year-old man" would be just "The patient" because authors had already mentioned the age etc. in Methods. The authors may want to make this part concise by avoiding lengthy description. Also, I wonder if the authors should put this case description here in the "Results" section; maybe, another part under a specific subheading.

* Legend of Figure 1. FlAIR should be FLAIR.

* Figure 3. I want to see fMRI results projected on sections rather than rendering maps to see the correspondences with the cyst.

Discussion

* I am sorry I would like authors to improve the points above first. I also would like them to organize the discussion more efficiently to show their scientific claims logically.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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