Reviewer’s report

Title: Improvement in cognitive impairment following the successful treatment of endogenous Cushing’s syndrome-a case report and literature review.

Version: 0 Date: 22 Mar 2019

Reviewer: Iris Crespo

Reviewer's report:

BEND-D-18-00388

This case report shows an interesting and complex case of Cushing's syndrome. This case is a clinical relevant example of improvements in cognitive function and mood after treatment of Cushing's syndrome and hormone normalization (glucocorticoids and prolactin). Moreover, it is a clear and well-written manuscript.

There are some points which should be reconsidered before its publication.

Abstract (page 1):

- It would be recommendable to mention the assessment tool used to evaluate neurocognitive function.

- In the conclusions section of the abstract, authors emphasize the importance of early detection of Cushing's syndrome to prevent neuropsychiatric disorder, but not neurocognitive deficit. Are there any specific reasons for this?

Case report (page 3):

- How do authors evaluate cognitive impairments like "inattentiveness followed by progressive memory impairments, psychomotor retardation and inappropriate behavior"? Do authors use neuropsychological tests? Or is it only subjective complaints? It is one of the examples, but I think that information should be included in the text.

Outcomes and follow-up (page 5):
· Data of the repeated measures of performance status using the Barthel Index during the different points of the follow-up would be useful to make clear the progression of the improvement. The same is true of the Mini-Mental state examination.

· It would be recommendable (if possible) to add the brain imaging before and after the treatment of Cushing's syndrome to provide evidence of the structural brain changes.

Discussion (Page 6-9):

· The discussion about the potential influence of hyperandrogenism and hyperprolactinemia on cognitive function decline and mood disorders is mandatory in this particular case. There are several studies that show the impact of hyperprolactinemia and sexual hormones on mood.

· The limitations of their conclusions about this particular case are missing. There are medical factors other than glucocorticoid excess (as a previous subdural haematoma or syphilis) that can influence some of the cognitive outcomes in this particular case.

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

Yes

**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.

Yes

**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.

Not relevant to this manuscript

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Please indicate the quality of language in the manuscript:

Acceptable
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