Title: Symptomatic Hyponatremia following Lateral Medullary Infarction: a case report

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Author's response to reviews: see over
Symptomatic Hyponatremia following Lateral Medullary Infarction: a case report

Dear Editor

My colleagues and I thank you and the reviewers for your interest in our case report and favorable comments on our manuscript. I am submitting our revised manuscript, entitled “Symptomatic hyponatremia following lateral medullary infarction: a case report.” As you kindly provided us with the chance to revise our manuscript, we have carefully reviewed the insightful comments and corrected the manuscript according to the suggestions. We hope that we have answered the reviewers' questions adequately. We showed these changes by highlighting in green in the manuscript. We hope that you and the reviewers find our manuscript satisfactorily revised and worth publishing in BMC Neurology.

Sincerely,

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Reviewer’s comment:
Major Compulsory Revisions:
The authors’ revisions are insightful, and this remains a very interesting case. In particular, the sodium and volume disturbances that the patient experienced in association with a lateral medullary lesion are important observations to report. However, the proclamation that this patient's hyponatremia was "due to initial SIADH followed by CSW" is not adequately supported. From the evidence presented, we cannot confirm that the patient's initial volume status and sodium level were in fact due to inappropriate ADH secretion, as opposed to an entirely different entity or a combination of factors including CSW. As there was no direct test of ADH performed, and the underlying etiology of the sodium/volume fluctuations is still a matter of speculation, I would strongly recommend against asserting that the patient “experienced symptomatic hyponatremia due to initial SIADH followed by CSW.”

In light of the uncertainties regarding the etiology, the background and case presentation should be limited to the objective findings. The diagnoses of possible SIADH and CSW should be moved to the discussion, and placed in context of the theoretical etiologies of the sodium fluctuations seen in this patient.

Authors’ reply:
We also agree to the reviewer’s concern that the exact etiology of initial hyponatremia in this case is hard to ascertain because objective study results such as direct ADH level test were lacking. It is probable that the patient might have cerebral salt wasting from the beginning, with or without SIADH. We modified our description as follows:

In abstract:
Page 2, 5th line: Here we describe a lateral medullary infarction patient who went through symptomatic hyponatremia due to initial SIADH followed by CSW.
: Here we describe a lateral medullary infarction patient who went through symptomatic hyponatremia due to syndrome of inappropriate secretion of antidiuretic hormone and cerebral salt wasting syndrome.

In background:
Page 3, 8th line: Here we describe a lateral medullary infarction patient who experienced symptomatic hyponatremia due to initial SIADH followed by CSW, and we discuss the possible pathomechanisms of these two conditions.
: Here we describe a lateral medullary infarction patient who experienced symptomatic hyponatremia due to SIADH and CSW, and we discuss the possible pathomechanisms of these two conditions.

In conclusions:
Page 5, 6th line: Although the etiology of hyponatremia in this case is hard to ascertain, initial SIADH followed by CSW would be the most probable scenario after reviewing the patient’s volume status and electrolyte profiles.
: Although the etiology of hyponatremia in this case is hard to ascertain, both SIADH and CSW should be considered after reviewing the patient’s volume status, electrolyte profiles, and response to water restriction.

Page 6, 5th line: The initial SIADH might have been due to disruption of the afferent vagal
response via the nucleus tractus solitarius in the lateral medulla, and the CSW that occurred later could have been caused by the descending sympathetic tract injury which disrupted the sympathetic stimulus to the kidney. The reason why he had progressed from SIADH to CSW is not certain. Initial hydration and mild water retention during the period of SIADH might have stimulated BNP release, which could have precipitated salt wasting afterwards. It is conceivable to suspect that he was initially combined with both CSW and SIADH because he did not respond to water restriction.

The reason why he had both SIADH and CSW is not certain. The SIADH might have been due to disruption of the afferent vagal response via the nucleus tractus solitarius in the lateral medulla. The CSW could have been caused by the descending sympathetic tract injury which disrupted the sympathetic stimulus to the kidney and mild water retention due to initial intravenous hydration with normal saline. It is also conceivable to suspect that he initially experienced CSW without SIADH because he did not respond to water restriction.
Editor's comment:

"1. Please change the title to the following: "Symptomatic hyponatremia following lateral medullary infarction: a case report"

2. Abstract: please avoid the use of all abbreviations within the abstract. All abbreviated terms should be spelled out.

3. Please use brackets instead of superscripts for the reference numbers within the text.

4. Within the main text, please define all abbreviated terms upon first time use (e.g., "CNS", "MRI", etc.).

5. Please state the ethnicity of the patient in both the abstract and the case presentation section of the main manuscript.

6. "A blood test on..." should be: "A blood test on the..."

7. "There has been a report of SIADH after lateral medullary infarction, and they stated that the nucleus tractus solitarius..." should be:

" There has been a report of SIADH after lateral medullary infarction, and it was suggested that the nucleus tractus solitarius..."

8. "It is conceivable to suspect that he was initially combined with both CSW and SIADH because he did not respond to water restriction." should be:

"It is conceivable to suspect that he initially experienced both CSW and SIADH because he did not respond to water restriction."

9. Financial Competing Interests: should be: "Competing interests: The authors declare that they have no competing interests."

10. References: Please follow BMC Neurology style guidelines with regards to when to use the term "et al.":
http://www.biomedcentral.com/bmcneurol/authors/instructions/casereport#formatting-references

11. Figure titles: please avoid the use of all abbreviations within the figure titles. All abbreviated terms should be spelled out."

Authors’ reply:
Thank you for your considerate comments and we modified our manuscript.