Reviewer's report

Title: Osteoarthrosis causing altered mental status - a case report

Version: 3 Date: 16 September 2014

Reviewer: Alicja Sieminska

Which of the following following best describes what type of case report this is?: Unexpected or unusual presentations of a disease

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: Yes

Is this case worth reporting?: Yes

Is the case report persuasive?: Yes

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: Yes

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

Authors report a rare case of cervical spondylosis causing phrenic nerve root compression from foraminal narrowing at C3, C4 and C5 leading to lower motor neuron paralysis of the phrenic nerve with respiratory failure, in the absence of spinal cord involvement.

Authors point out that this rare and underreported cause of chronic respiratory acidosis and must be considered in the differential diagnosis of chronic hypoventilation, particularly in the elderly. They conclude that presented case illustrates how a simple arterial blood gas and calculation of the Alveolar-arterial oxygen (A-a) gradient can help in the workup of chronic respiratory acidosis by identifying causes of hypoventilation, which are associated with a normal diffusing lung capacity hereby a normal A-a gradient.

The manuscript reports very interesting case that serves for being presented to
the wider circle of relevant specialists, including neurologists and pulmonologists.

The manuscript is well-written and easy to follow. However, in my opinion, it is not quite clearly and sensibly arranged.

The Introduction should be revised so that it provides basic information on the symptoms of cervical spondylosis depending on the presence/absence of cervical spinal cord compression, as well as how often this condition is and which age category of patients affects most often. I suggest replacing the first paragraph of the Conclusion section to the Introduction section. Some references in the Introduction are also advised.

Information included into Discussion section can be viewed as a continuation of a case presentation and should be replaced to the Case Presentation section. In the Discussion section, authors should rather comment their case and refer their comments to the available relevant literature. I suggest replacing the second and the third paragraph of the Conclusion section to the Discussion section. In my opinion, only the last paragraph best fits the Conclusion section. Moreover, this section might be extended by the comment that using A-a gradient assessment is much easier to do than diffusing lung capacity examination, which can be impossible to perform in patients with respiratory failure requiring ventilation.

Minor revisions:

In the Case presentation section of the Abstract the term Alveolar-arterial oxygen gradient has been first mentioned, but only abbreviation “A-a gradient” has been provided. Please replace to this site the full term “Alveolar-arterial oxygen” that has been further used in the Conclusion section of the Abstract.

I suggest adding somewhat on the altered mental status in patient, the symptom that has been stressed in the title of the manuscript, but further barely mentioned in the manuscript without clear linking it to a hypercapnic respiratory failure.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Declaration of competing interests:

I declare that I have no competing interests