Author's response to reviews

Title: Traumatic atlantoaxial rotatory subluxation in an adolescent: a case presentation

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Title: Traumatic atlantoaxial rotatory subluxation in an adolescent: a case report

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Dear Professor Kidd,

Thank you very much for reviewing our manuscript and giving us the opportunity to resubmit after having considered the reviewers’ comments. We are particularly grateful to the reviewers who, with the help of their expertise, enabled us to improve our manuscript. The manuscript has been carefully revised by all authors and the problems mentioned by the reviewers were clarified. We have answered the reviewers’ comments on a point-by-point basis as can be seen in the pages attached. The changes are highlighted within the manuscript.

Also, please kindly note the change of order in the authors’ sequence.

Yours sincerely,

Georg Osterhoff, MD

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Comments from the Editorial team/ Reviewers

Editorial comments:

1. Please restructure the Abstract into the following three sections: Introduction, Case presentation, and Conclusion. The abstract should be no longer than 350 words.
   The abstract was restructured accordingly.

2. Please replace header 'Case Report' to 'Case Presentation.'
   'Case Report' was replaced by 'Case Presentation.'

3. Please include patient's ethnicity in the Case Presentation section.
   The patient’s ethnicity (Caucasian) was included.

4. Please include the following as a last sentence in the Author's contribution section: 'All authors read and approved the final manuscript.'
   Has been added.

Reviewer #1 (Deniz Belen):

This case illustration is very informative for the physicians who deal with this field.
Thank you.
Reviewer #2 (Thomas Blattert):

1. This is an interesting case that deserves publishing after minor revision. Thank you.

2. In half a sentence only do we learn that the patient had additional traumatic discus protrusion at C5/6. The authors should discuss the fact that this second injury might pose a danger to the patient during a closed reduction manoeuvre as well. Therefore, in retrospect, it would have been safer in terms of premanipulation diagnosis to perform both CT and MRI, instead of performing the MRI after closed reduction only. After all, with their way of doing it, reduction was performed without all relevant diagnoses being detected at that time! This needs to be discussed. Second, how was the course of the C5/6 injury. This should be included as well. Third, please add an MRI to the figures showing both injuries.

Reduction was made under traction with the cervical spine in flexion thus avoiding harm by potential posttraumatic disc lesions. The patient was awake and did not report about any new paresthetic sensations during the whole procedure.

The following was added in the case presentation:

“A CT-scan revealed an atlantoaxial rotation of 46° to the left without any signs of osseous lesions (Fig. 1). The neck was then reduced by cautious rotation under traction with the cervical spine in flexion thus avoiding harm by potential posttraumatic disc lesions. The patient was awake and did not report of any new paresthetic sensations during the procedure and there were no clinical signs of neurological sequelae before or after reduction.”

The following was added in the discussion section:

“In patients with diagnosed lesions of the cervical spine, concomitant injuries have to be considered. In the presented case, the patient had an additional epidural hematoma or disc protrusion on level C5/6. This injury might pose a danger to the patient during a closed reduction manoeuvre if the patient awareness is impaired. Therefore, it is required to perform both CT and MRI before reduction on these patients. However, in the presented case, the patient was awake und would have been able to report of any new paresthetic sensation. There was neither fracture, nor instability or rupture of alar ligaments. This qualifies for conservative management and some authors suggested treatment with traction and subsequent halo body jacket for 8-12 weeks for these patients [14, 15].”
Figure 4 and the following figure legend were added (formerly Figure 4 became Figure 5):

“Figure 4 Sagittal MRI (T2)

The MRI of the cervical spine on the day of trauma (A) shows an epidural mass (arrows) dorsally to C5/C6 - probably a hematoma or a disc protrusion -, without signs of myelopathy. Six weeks afterwards (B) the mass has decreased in size; the remaining disc C5/C6 is intact.”