Author's response to reviews

Title: Cervical myelopathy caused by atlantoaxial instability in a patient with an os odontoiduem and total aplasia of the posterior arch of the atlas: a case report

Authors:

Tadanori Ogata (ogata@m.ehime-u.ac.jp)
Tadao Morino (morino@m.ehime-u.ac.jp)
Masayuki Hino (hinomasa@m.ehime-u.ac.jp)
Hiromasa Miura (miura@m.ehime-u.ac.jp)

Version: 2 Date: 15 April 2012

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Cervical myelopathy caused by atlantoaxial instability in a patient with total aplasia of the posterior arch of the atlas: a case report. Tadanori Ogata, Tadao Morino, Masayuki Hino and Hiromasa Miura

15th, April, 2012

Dear Editors of Journal of Medical Case Reports

Thank you for your kind letter regarding our paper entitled “Cervical myelopathy caused by atlantoaxial instability in a patient with total aplasia of the posterior arch of the atlas: a case report.”

Based on the reviewers’ comment, we rewrote some text.

The following is a reply to the reviewers’ suggestions, point by point:

Changed points in the revised version are shown as colored (red) text.

Comments from the Editors and Reviewers:

Editor’s suggestions

Please include the ethnicity of the patient in the abstract
Please include the patient's ethnicity in the Case Presentation section. The Case Presentation should present all relevant details concerning the case. The case presentation should contain a description of the patient's relevant demographic information (without adding any details that could lead to the identification of the patient); any relevant medical history of the patient; the patient's symptoms and signs; any tests that were carried out and a description of any treatment or intervention. This section may be broken into subsections with appropriate subheadings. If it is a case series, then details must be included for all patients.

Answer: We added the ethnicity of the patient in the abstract and Case presentation section in a new version.

Suggestions from Rev 1

The author reports a rare case with detailed discussion. This case report would be valuable for the publication.
I have some comments as follows:

This is a case report, but not discussed regarding the surgical procedure. Therefore, the author may delete the following sentences (page 5, paragraph 2, line 6), "Because we chose to perform long fusion, we used pedicle screws for the caudal implant (C3 and 4). Jones et al. made a biomechanical comparison of the pull-out strengths of lateral mass and pedicle screws in the human cervical spine. Cervical pedicle screws demonstrated about two-times higher resistance to pull-out forces than lateral mass screws [14]."

Answer: according to the reviewer’s suggestion, we omitted the text noted above.

This case was accompanied with os odontoideum, resulting in the neurological deficit. If the previous report described the presence of os odontoideum, please add this issue in the discussion.

Answer: As far as we know, there is no reported case of total aplasia of the posterior arch of the atlas with an os odontoideum.

Suggestions from Rev. 2

I believe that this article is worth being published in the Journal of Medical Case Reports, after a few minor revisions (essential and discretionary). I suggest, if I might, the following revisions:

1. Case presentation, second paragraph: I think that the term "encephalomalacia" (...and encephalomalacia ... at the C1 level.) is less appropriate than the term "myelomalacia".

Answer: According to the reviewer’s suggestion, we changed the text.

2. Fig 2: Atrophy of the spinal cord is also seen (myelomalacia).

Answer: We added the comment of myelomalacia in the figure legend for Fig. 2 as follows: Atrophy of the spinal cord with myelomalacia, which was observed as a high intensity lesion (arrow), was seen.

3. Discussion, second paragraph: The authors may refer also to the article by Samartzis D, Shen FH, Herman J, and Mardjetko SM. Atlantoaxial rotatory

Answer: We referred the paper noted above in the discussion as follows: Smartzis et al. reported that congenital anomalies, such as aplasia or hypoplasia of the anterior or posterior of atlas, increases risk of neural injury in the patient with atlantoaxial subluxation/fixation [10].

Suggestions from Rev. 3

Does the case report have explanatory value? Not so strong value. Authors must be describe the differences if there are any between partial and total aplasia of posterior arch of atlas from imaging, clinical and management point of view.

Answer: Usually, incidence of the myelopathy in type A, B and E aplasia was less than that in type C and D aplasia. Especially, there is no report of myelopathy in the patient with total aplasia (type E). Schlke et al. reported atlantoaxial instability in a patient with type E aplasia, although the patient showed no clinical or neurological symptoms related to the anomaly of the atlas.

In our case, os odontoideum and a cleft of anterior arch coexisted with total aplasia. As far as I know, this is the first report of cervical myelopathy in type E defect. We added this clinical point of view in the discussion part as follows: “Although the present case was a very rare anomaly, myelopathy possibly occurs in the patients with type E defect when another anomaly, such as os odontoideum, is coexisted.”

In Fig three (Fig. 3: Computed tomography (CT) images of the cervical spine. Complete absence of the posterior arch of the atlas with an anterior cleft (A) was observed. The …). (A) is not consist with “anterior cleft”, is just Figure label.

Answer: It was my mistake. (A) should be positioned in the end of the sentence. We corrected the text in our revised version.

What is the value of three dimensional computed tomography? Vertebral arteries could be observed (if there is any reason) with Color Doppler Sonography or with Initial CT (+contrast media) and a simple MPR (multi planar reconstruction).

Answer: We produced a real model of the cervical spine from CT data with contrast
media. It was very effective for the safe operation (pedicle screw insertion and avoid the vertebral artery). Since the aim of this report is present a very rare case of cervical anomaly, we decided to show the photograph of the real model.

…(Fig. 4: LEXI co. Tokyo, Japan). What does “LEXI co. Tokyo, Japan” mean?

Answer: LEXI co. is a company for 3D-model production from CT data. We changed the text “produced by LEXI co. Tokyo, Japan”.

Suggestions from Rev. 4
This is a well organized manuscript and it is worth reporting because it is the first report of a total aplasia of the posterior arch of the atlas, a coexisting os odontoideum and a cleft in the anterior arch. I think it should be better to include in the title the fact that an os odontoideum is present in your patient.

Answer: According to the reviewer’s suggestion, we add “os odontoideum” in the title in our revised version.

We want to kindly ask you again to consider this paper for publication in “Journal of Medical Case Reports”. We believe the manuscript has been improved satisfactory and hope it will be accepted for publication in “Journal of Medical Case Reports”.

Sincerely,

Tadanori Ogata