Author’s response to reviews

Title: Multilevel Lumbar Spine Infection due to Poor Dentition in an Immunocompetent Adult: A Case Report

Authors:

Michaela Quast (quast.michaela@mayo.edu)

Carrie Carr (carr.carrie@mayo.edu)

W. Hooten (hooten.william@mayo.edu)

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Christian Koch

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Re: Revisions to submission ID: JMCR-D-17-00599

Christian Koch,

We would like to thank the editorial board for their detailed and thoughtful review of our manuscript entitled “Multilevel Lumbar Spine Infection due to Poor Dentition in an Immunocompetent Adult: A Case Report.”

Revisions made in response to the reviewers’ comments are outlined below. The reviewers’ comments have been placed in italic followed by the revisions made to the manuscript. All changes to the manuscript have been highlighted in red.
Reviewer 1

1) I don't think use of the term 'Panorex' is quite appropriate for describing the imaging presented in the manuscript. 'Panorex' is a method for acquiring 'panaromic radiograph' for dental evaluation. I would suggest authors to replace this term with 'dental panaromic radiograph'.

We have replaced the term ‘Panorex’ with ‘dental panaromic radiograph’ in the case report (page 5, last paragraph).

2) Page 5, line 19 - 22; 'A CT-guided biopsy targeted an abscess that had eroded the left side of L4 (Figure 1; C and D).' Although the sentence explains a CT finding, Figure 1; C and D are MRI images. Authors should add CT guided biopsy images to improve the manuscript visually and/or change the place of this figure citation to its appropriate place.

The manuscript has been revised as follows (page 5, last paragraph):

“An abscess involving the left side of L4 (Figure 1; C and D) had developed. A CT guided biopsy was performed targeting the erosive abscess and 10cc of fluid was aspirated.”

3) The only claim for uniqueness of this case report depends on the fact that poor dental hygiene caused the spinal infection without any dental intervention. Patient does not have a history of a dental procedure. However, it is somewhat hard to determine or prove the absence of dental manipulation by the patient (use of toothpick, etc.). This is even more probable as the patient would be expected to have dental discomfort due to the poor condition of his teeth. One way to partially fix this issue could be providing a photograph of the patient's mouth that would show that there are no signs of external manipulation.
We agree with this important comment and the manuscript has been revised as follows (page 5, last paragraph):

“Examination of the oral cavity was negative for masses, lesions, or ulcerations involving the soft tissues, but several carious nonrestorable teeth were observed that were nontender to palpation or percussion and were nonmobile.”

Please also see the following revision (page 6, last paragraph):

“However, this does not exclude the potential occurrence of dental manipulation by the patient (i.e., use of a toothpick).”

4) Patient follow-up information and imaging would improve the manuscript.

The manuscript has been revised as follows (page 5):

“Upon hospital dismissal, the patient completed a 12-week course of ceftriaxone as well as extensive dental work to eradicate the source of infection. He remains on oral cefadroxil pending repeat imaging.”

Figures:

Figure 1: Figures are not well aligned with each other. It would be a better if the pre-contrast T1 images were added that would demonstrate contrast enhancement and show low T1 signal of the infected disc and bone. Additionally, the levels of axial images are not given in the caption.
The sagittal pre-contrast T1 was of suboptimal quality and we chose not to include it. However, the post-contrast image best highlighted the findings. Levels of the axial images have been added.

Language:

There are some minor spelling and grammar errors;

* Page 2, Abstract misspelled.
* Page 4, line 36; should be '…chest X-ray…'
* Page 5, line 48; '…includes…' should be '…include…'

The above spelling and grammar errors have been corrected as advised.

Reviewer 2

1. Do you believe the case report is authentic?
   Yes/No - Yes

2. Do you have any ethical concerns? Please consider if local Institutional Review Board approval or ethical approval was obtained (if appropriate) and if the patient (or their parent or guardian in the case of children under 18) gave written, informed consent to publish this case and any accompanying images. A statement to this effect should appear in the manuscript.
   Comments: No concerns

3. Does the Introduction explain the relevance of the case to the medical literature?
   Yes/No - Yes
4. Does the article report the following information? Where information is missing, please specify.

a…f

Comments: All above points were presented in a satisfactory way.

Only missing, but not essential, part is follow up information (if this was available).

The available follow-up information has been included (page 5, last paragraph):

“Upon hospital dismissal, the patient completed a 12-week course of ceftriaxone as well as extensive dental work to eradicate the source of infection. He remains of oral cefadroxil pending repeat imaging.”

However, unless authors targeting quite specific and expert group of readers, clear conclusions of the results of these radiological test were not disclosed,

For example:

"There was clear involvement of the L5-S1 interspace with associated edema of the endplates, though no frank destruction was identified." Is this description of discitis?

The manuscript has been revised as follows (page 4, paragraph 1):

“There were findings of discitis involving the L5-S1 interspace with associated edema of the endplates, though no frank destruction of progressive osteomyelitis was identified.”
Until reader further down encounters below statements and comparatively analyses:

"Upon referral, lumber spine MRI demonstrated progression of discitis now involving L3-4 through L5-S1 (Figure 1; A and B)." after that reader can extrapolate that formerly authors probably were referring to discitis.

We agree with this comment; please see the above revision,

Similarly:

"Mild T2 hyperintensity at the L4-L5 interspace in the presence of a ventral abscess and ventral epidural thickening indicated probable involvement at this level." A question remains "ventral epidural thickening" describes what process? And again, until further in the text reader finds a statement that is likely to be relevant:

The manuscript has been revised as follows (page 4, paragraph 1):

“Mild T2 hyperintensity at the L4-L5 interspace in the presence of a ventral abscess and ventral epidural thickening indicated probable discitis involvement at this level.”

"There was progression of mild enhancement of the L4 and L5 vertebral bodies indicative of osteomyelitis ", and a reader can conclude that formerly mentioned description probably refers to the process of osteomyelitis.

Please see the above revisions.

5. Is the interpretation (discussion and conclusion) well balanced and supported by the case presented?

Comments: Balance in the discussion of the manuscript is well maintained.
6. Is the anonymity of the patient protected? Please consider any identifying information in images such as facial features or nametags, whether the patient is named etc. If not, please detail below.

Yes/No - Yes

7. Is the Abstract representative of the case presented?

Comments: The abstract is well presented and provide a brief summary of important aspects of the manuscript.

8. Does the case represent a useful contribution to the medical literature?

Comments: Yes

9. Additional comments for the author(s)?

The manuscript is very well written and it is pleasure to read.

The style of English language up to highest academic standards, the whole manuscript is brief and concise.

However, I had only a few humble suggestions for the consideration of the authors.

Some very few minor typos were scattered throughout, and only some of them were mentioned below, hence professional proofreading and corrections would be beneficial:

9.a. On the first paragraph of the introduction, there is a typo mistake "minigitis" to be "meningitis".

This was corrected to “meningitis.”
9.b. In the second sentence of the case report (page 4, line 12) “… episode …"(singular) does not match with (plural) "… fevers, rigors and generalized arthalgias", and probably "arthralgia" rather than "arthalgia".

The manuscript has been revised as suggested (page 4):

“Immediately prior to seeking emergency care, the patient reported an episode of fever, rigor, and generalized arthralgia.”

9.c. On the same page as above, on lines 19-24 the statement requires slight correction "Physical examination was significant for a mildly distressed appearing male and the musculoskeletal examination demonstrated diffuse tenderness in the lumbar spine area to percussive palpation without associated swelling, erythema or evidence of trauma." Authors might want to say "General examination…” rather than "physical examination" since authors again mention "musculoskeletal examination" (i.e. physical examination).

We agree with this comment and the manuscript has been revised as follows (page 4)

“General examination was significant for a mildly distressed appearing male and the musculoskeletal examination demonstrated diffuse tenderness in the lumbar spine area to percussive palpation without associated swelling, erythema or evidence of trauma.”

9.d. In the line 34 authors kindly mentioned "… rapid influenza A and B were negative", probably would be better to say "… rapid influenza A and B immunoassays were negative" and would provide the readers with clarity and also mention the reasoning of this test would be even credulous.

This is an important clarification; the manuscript has been revised as follows (page 4):
“Four sets of blood cultures were obtained from the antecubital area and rapid influenza A and B immunoassays were negative.”

9.e. On page 5, line 9 - "lumber" please, change to "lumbar"

This has been corrected to “lumbar”

9.f. On this same page, "Upon referral, lumber spine MRI demonstrated progression of discitis now involving L3-4 through L5-S1" to clarify the disease progression, I would suggest mentioning after how many days from first MRI and commencing the intravenous antibacterial treatment (if) repeated MRI happened.

This timeline has been clarified and the manuscript revised as follows (page 5):

“Despite referral, patient elected to delay further diagnostic evaluation and treatment for 2 months.”

9.g. However not being essential, providing comparative images would be desirable.

Was the MRI with gadolinium contrast or non-contrast?

Comparative contrast and non-contrast images have been added.

9.h. On line 29, I would suggest clarifying to the reader what is Panorex, as it appears in the text - "... and Panorex demonstrated...", or alternatively changing this to something like "Panorex view" or "Panorex view on x-ray".

The manuscript has been revised as follows (page 5):
“The patient had no signs of neurological impairment (i.e., normal lower extremity strength and sensation) but physical examination and dental panaromic radiograph demonstrated significant necrotic dentition (Figure 2).”

9.i. On line 34, the sentence "Ten teeth were extracted…” would better sound if it would start with something like "As a part of treatment ten teeth were extracted …".

The manuscript has been revised as follows (page 5):

“As a part of treatment, ten teeth were extracted and the necrotic dentition was subsumed to be the most likely source of infection.”

Again, we would like to thank the editorial board for the thoughtful review of our manuscript.

Sincerely,

W. Michael Hooten, MD