Author’s response to reviews

Title: A comparison of zero-profile anchored spacer (ROI-C) and plate fixation in 2-level noncontiguous anterior cervical discectomy and fusion - a retrospective study

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Author’s response to reviews:

Dear Editors and Reviewers:

Thank you for your letter and the reviewers’ comments concerning our manuscript entitled “A comparison of zero-profile anchored spacer (ROI-C) and plate fixation in 2-level noncontiguous anterior cervical discectomy and fusion”. Those comments are all valuable and very helpful for revising and improving our paper. We have studied comments carefully and have made correction which we hope meet with approval. Revised portion are marked in yellow in the paper. The main corrections in the paper and the responds to the reviewer’s comments are as following:

Responds to the reviewer’s comments:

Reviewer #1:

1. Response to comment: I could not understand what is meant by "zero profile" in this article. If this is stating the absence of an anterior plate, this is a misleading way to describe that cage in my opinion
Response:

Thank you for your comment.

ROI-C can be completely contained in the decompressed intervertebral space, avoiding the mechanical stimulus to the esophagus and other pre-vertebral soft tissues. So it is named "zero profile".

2. Response to comment: Clinical scores being similar between those two groups is not a surprise so the main consideration in this study is fusion rate and adjacent segment degeneration. According to the results, fusion rates are also similar, however, there is a significant difference between adjacent segment disease. First I think that low number of patients in both groups may be misleading regarding statistical results.

Response:

Thank you for your comment.

The limitations of our study are the small number of patients and relatively short-term follow-up. A further limitation of this study was its retrospective nature. Further large-scale prospective, randomized studies with a long-term follow-up are needed to confirm the results of this study.

3. Response to comment: I should admit I could not understand why the authors opt for anterior plates. Authors say "The presence of anterior plates is regarded as a predisposing factor of adjacent segment degeneration[22]. Park et al. [11]found that an anterior cervical plate close to the adjacent intervertebral disc may cause adjacent level disc degeneration or surrounding bone formation". So why did you use them? Necessity of an anterior plate is the major question here. A simple, neither zero profile nor plated, cage would be enough in my opinion. Two levels cervical discectomy and presence of a healthy segment in-between does not need additional stabilization. This should be stated and discussed in the paper.

Response:

Thank you for your comment.
In ACDF, plates are often used to provide the immediate postoperative stability and improve the fusion rate. Although the use of ventral cervical plating after a single-level cervical fusion is controversial, its use in multilevel procedures is beneficial. Fusion rates have been unacceptably low after multilevel anterior cervical discectomy and fixation without plating.

Reviewer #2:

1. Response to comment: Please show the specific p-values at any given time in table 3 (p-values for the comparison at one time)

Response:

Thank you very much for the suggestion. We have made the correction.(Table 3)

2. Response to comment: Please show how the Cobb-angles were measured.

Response: We added a picture showing how the the Cobb-angles were measured.(Fig 4;line 348-350)

3. Response to comment: I also missed a graph for the illustration of the main results.

Response: Thank you very much for the suggestion. We have made the correction.(Fig 5A,B, and C;line 351-354)

Specific comments

1.Title
I would suggest following title: „A comparison of zero-profile anchored spacer (ROI-C) and plate fixation in 2-level noncontiguous anterior cervical discectomy and fusion- a retrospective study "
Response: We have made the correction.(Line 1-2)

2. Abstract
Line 43 p1: On page 4 you claim that patients were observed at least 12 months. This statement differs clearly from the one you made here.
Response: We are very sorry for the mistake in writing and we have made the correction. (Line 139)

Line 48 p1: please insert "the" two groups
Response: We have made the correction.(Line 30)

Line 50 p1: please change "were" into "was"
Response: We have made the correction.(Line 32)

In my opinion, the results section in the abstract is too detailed. Please reduce to the main findings of your study and please show %-values more than X out of X to make the abstract clearer to the reader.
Response: We have made the correction.(Line 32-34)

3. Introduction
Line 23 p2: Please insert „a" debate (…) and change „over" into „about". Also change "is" into "would be". Please delete "for use".
Response: We have made the correction.(Line 46)
Line 24 p2: please describe "levels" of what?
Response: We have made the correction.(Line 47)

Line 34 p2: please change "studied" into "investigated" (if)
Response: We have made the correction.(Line 56)

Line 39 p2: in my opinion, the ROI-C Cage is not inserted "into" the vertebral body, I guess you meant between two vertebrae as it is commonly used as a spinal disc substitution. Please rewrite.
Response: We have made the correction.(Line 59-62)

4. Material and methods

Line 50 p2: I would suggest erasing "This is a retrospective study" and insert this aspect into the title.
Response: We have made the correction.(Line 69-70)

Line 51 ff p2: In my opinion, the mean age (including SD) would fit better into the "results" section.
Response: We have made the correction.(Line 69-70)

Line 9 ff p3: Please explain why developmental stenosis is an exclusion criteria. Also, you claimed that 44 patients received surgery during the specific time range. Therefore, in my understanding every single patient met inclusion criteria. If so, please mention this explicitly and explain that no participant met exclusion criteria.
Response: Developmental stenosis is contraindicated for ACDF, but indicated for posterior open-door cervical laminoplasty.

Line 25 p3: please rewrite: "There was no significant difference".
Response: We have made the correction.(Line 81)
Line 40 p3: I think "plates were applied" would fit better.
Response: We have made the correction.(Line 95)

Line 47 p3: I think you should put the "collected data and outcome assessment" after "surgical technique". This would fit better into the patient's context.
Response: In the manuscript we have already put the part of "collected data and outcome assessment" after the part of "surgical technique".(Line 84 and 102)

Line 52 p3: surgery instead of surgeries.
Response: We have made the correction.(Line 106)

Line 7 p4: "when was the clinical and radiological evaluation taken preoperatively?"
Response: 1 day before operation (line 108)

Line 11 p4: In my opinion, it is good to use scores, but I think you should also score the patient’s subjective life quality after surgery and not only use objective scoring systems. Please describe the JOA scoring system and the NDI more precisely. Also, please describe the measured outcome or meaning of the JOA-RR.
Response: Thank you for your suggestions.

We have described the JOA and NDI system more precisely and added two references.(Line 112-122; references 13 and 14).
"Recovery rate" is accepted as an outcome measure.

Line 20 p4: Please change "satisfied" into "given".
Response: We have made the correction.(Line 128)
Line 28 p4: New osteophyte formation in what time period?
Response: New osteophyte formation in the postoperative follow-up period.(line 134)

Line 32 p4: "were observed for at least 12 months (...)": Did every patient receive follow-up at the same time after surgery?
Response: Patient is informed to receive follow-up postoperatively at 2 weeks, 1 month, 3 months, 6 months, and then every 6 months. But the patient might have a delay within 2 weeks for personal reasons.

5. Discussion
Line 10 p6. I guess you meant that the ROI-C itself was simple to insert. Please rewrite this section.
Response: We have made the correction.(Line 206-209)

Line 32. P6: Please write "may occur" instead of "maybe".
Response: We have made the correction.(Line229-230)

Line 39 p6: I would prefer an extra section for the "conclusion" to emphasize it within the manuscript.
Response: We have made the correction.(Line236)

Line 40 p6: You claim that there was no significant difference in clinical outcomes although you defined "dysphagia" as a clinical outcome and you stated that "dysphagia" had a significant difference between the compared group at any time. Please rewrite
Response: We are sorry for the mistake. We have put dysphagia in the "complications" part.(line 170)
We have tried our best to improve the manuscript and made some changes. We appreciate for editors/reviewer's warm work earnestly, and hope the correction will meet with approval. Once again, thank you very much for your comments and suggestions.