

List of Responses

Dear Editor and Reviewers:

Thank you for your letter and reviewers' comments concerning our manuscript entitled "Treatment of Kümmell's Disease with Sequential Infusion of Bone Cement: A Retrospective Study" (Manuscript NO.: 55902). Those comments are all valuable and very helpful for revising and improving our paper. We have made correction according to the comments. Revised portion are marked in red in the paper. The main corrections in the paper and the responds to the reviewer's comments are as flowing:

Round 1

Responds to the reviewer's comments:

Reviewer #1: Overall comments: This manuscript deals with the treatment of Kümmell's disease with sequential infusion of bone cement. Drawbacks of the presented study include the retrospective design, small sample size and short follow-up period. As stated in the section "Research perspectives", the role of sequential infusion in reducing the leakage of bone cement will have to be evaluated in a large sample multicenter randomized controlled study.

Response: Thank you for your comment.

Specific comments: Discussion, paragraph 1: "However, that the most popular hypothesis is that Kümmell's disease is caused by ischemic necrosis of the vertebral body." – This sentence is unclear. Discussion paragraph 2: "As a result, because of gravity and the shearing force of spinal flexion-extension, the wedge change in the vertebral body with kyphosis occur." – Please correct this sentence. Paragraph 1 and paragraph 2 of the discussion should be shortened, as they present general knowledge and do not discuss the presented results.

Response: These suggestions are very helpful to our manuscript. We deleted the above questionable and incorrect sentences and shortened the paragraph 1 and paragraph 2 of the discussion. In addition, another native English speaker from Editsprings was invited

to polish the manuscript.

Methods, paragraph 1: "WTO" - please write out this abbreviated term. Section "Postoperative outcomes": "oswestry disability index" -> Oswestry Disability Index (consistent with table 2, footnote) Please check the reference list once more; e.g., reference 12: ssimakopoulos -> Assimakopoulos; this article is in Hell J Nucl Med. 2011;14(3): 291-299 (not in Hell J Nucl Med. 2010;14(3): 291-299); reference 13: vacuunm -> vacuum.

Response: Thank you for your careful review of our manuscript. We are very sorry for our carelessness and have revised the above mistakes. Once again, we carefully check the list of references to ensure that they are in the correct format and content. Thank you again for your careful review to make our manuscript more scientific.

Reviewer #2: Kümmell's disease is a syndrome following compression fracture of a vertebra that involves spinal pain, intercostal neuralgia, and motor disturbances of the legs, and the patients with low back pain can be treated by percutaneous vertebroplasty (PVP) or percutaneous kyphoplasty (PKP). However, the intraoperative bone cement leakage into blood vessels or spinal canal can cause pulmonary artery embolism or death or severe pain or paralysis. This work reported here performed a retrospective study to evaluate the effect of sequential infusion of bone cement during PVP on reduce bone cement leakage. Forty-five patients included in this study, 24 in the single infusion group and 21 in the sequential infusion group. Data indicated that there are no significant differences in VAS score and ODI between the single infusion group and the sequential infusion group; however, the leakage rate of bone cement was lower in the sequential infusion group than that in the single infusion group (Pearson chi-squared test, $P=0.043$). Because the sample size of this study was small, the effect of sequential infusion on reduce bone cement leakage should be evaluated by large sample size randomized controlled studies. The manuscript (No. 55902) reported here that "Treatment of Kümmell's Disease with Sequential Infusion of Bone Cement: A Retrospective Study". It is suggested that sequential infusion may be useful to reduce

bone cement leakage and will be helpful for improving patients' prognosis or outcome.

Response: Thank you very much for your sincere comments.

While the result is interesting, I have following comments and suggestions for the authors:

1. Please add the abstract, which was missed.

Response: We have added an abstract to the paper.

2. On section of methods, the method used to group the patients needs to be stated clearly.

Response: We agree with you and add this information.

3. On section of results, "24 in the single infusion group and 21 in the sequential infusion group" should be replaced by "24 in TSI group and 21 in SI group". "2 cases of basivertebral" should be replaced by "2 cases of basivertebral". "The leakage rate of bone cement was significantly lower (Pearson chi-squared test, $P=0.043$)" should be replaced by "The leakage rate of bone cement was lower P (Pearson chi-squared test, $P=0.043$)".

Response: We have revised the above inappropriate expression.

4. On the section of discussion, it is recommended to focus on the relationship between "sequential infusion" and "reduce bone cement leakage", and their clinical significances.

Response: We agree with you and revised the discussion section.

5. The Table, Figure, Reference, and special symbols must fit the journal's requirements or format.

Response: We have carefully checked and revised the Table, Reference, and special symbols in accordance with the guidelines for authors of the journal.

6. The quality of logic and presentation of the key idea are not good. Please delete the duplicate, meaningless and lengthy text descriptions. Please carefully check the spaces, punctuation, spelling of letters, and correct the mistakes.

Response: We revised the manuscript systematically and deleted the duplicate, meaningless and length text descriptions. We also carefully checked the spaces, punctuation, spelling of letters and corrected these mistakes. In addition, another native English speaker from Editsprings was invited to polish the manuscript.

7. Minor issues: Table 1, should added “TSI: traditional single infusion; SI: sequential infusion”. Table 2, “oswestrydisability index” should be replaced by “oswestry disability index”.

Response: We agree with your opinion and revised the above questions.

Round 2

Responds to the reviewer’s comments:

Reviewer: The revision of manuscript (No. 55902R) is much better now.

Response: Thank you for your comment.

Specific comments: However, I have following concerns: 1. There are many minor errors needs corrected. For example, “in theTSI group (41.7%, 10 of 24).C” should be replaced by “in the TSI group (41.7%, 10 of 24).”; “analyzedretrospectively” should be replaced by “analyzed retrospectively.”; “Met the diagnostic criteria” should be replaced by “Meet the diagnostic criteria”, and so on.

Response: Thank you for your careful review of our manuscript. We have revised the above inappropriate expression.

2. Please check the full text carefully and correct any errors.

Response: We have carefully checked and revised the full manuscript.

3. Statistical analysis needs to be reviewed by a statistician, sentences and grammar need to be revised by native English speakers.

Response: Thank you for your comment. Our manuscript has been reviewed and evaluated by statistical experts and polished by two native English speakers from Editsprings.

Thank you very much for giving us the opportunity to revise the manuscript. This manuscript has been edited and proofread. I am looking forward to your further advice and comments from reviewers to make the paper more scientific.

Yours sincerely

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