Author's response to reviews

Title: Mid-term clinical results of primary total knee arthroplasty using metal block augmentation and stem extension in patients with rheumatoid arthritis

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The Editors

BMC Musculoskelet Disorders

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Title: “Mid-term clinical results of primary total knee arthroplasty using metal block augmentation and stem extension in patients with rheumatoid arthritis”

Dear Editors:

Thank you for your kind e-mail of 30-Jul-2015. We are most grateful to you and the referees for helpful comments on the 2nd version of our manuscript.

Referee #1:

Minor Essential Revisions:

The manuscript has improved considerably with the changes made by the authors. However, there are still some points that need to be addressed:

# We would like to thank the referee for his advice which has helped to greatly improve our paper. We have revised the manuscript again according to the referee’s comments.

A cementation technique omitting pulsed lavage and vacuum mixing cannot be considered „state of the art“. Especially pulsatile lavage has been shown to improve interface strength significantly while reducing radiolucent lines at the cement-bone interface. In my eyes this is a possible explanation for the larger number of radiolucencies. This must be discussed and added as a limitation.
We completely agreed with the referee’s comments.

In the Discussion, “And furthermore, cementation technique omitting vacuum mixing and pulsed lavage also could explain the larger number of radiolucencies [28, 29], although previous studies have not provide information regarding cementation technique (e.g. tourniquet use, type and viscosity of cement, vacuum mixing, pulsed lavage, hand packing, etc.) [14, 27, 30].” (revised manuscript Page 14, Line 223 – Page 15, Line 226).


In the Limitation section, two sentences, “Third, components were fixed with cement to the cut surface without vacuum mixing or pulsed lavage in this case series. Especially pulsed lavage could improve interface strength significantly while reducing radiolucent lines at the cement-bone interface [28, 29]. We currently use pulsed lavage on a routine base in TKA.”, have been inserted (revised manuscript Page 17, Line 263 - Page 17, Line 266).

Apparently, the main limitation of the study is the high number of knees (n=8) lost to FU. Finally only 18 knees remained for survival analysis. Furthermore bilateral patients were included in the patient pool. Thus, this must be considered a major limitation that must be clearly stated in the abstract and discussion.

In the Abstract, two sentences, “Eight knees were lost follow-up after the two-year evaluation.” (revised manuscript Page 3, Lines 34-35) and “Further study is needed to determine the long-term results of TKA using metal block augmentation and stem extension”, have been inserted (revised manuscript Page 4, Lines 48-49).

In the Results, “Finally 18 knees remained for survival analysis, and” has been inserted (revised manuscript Page 12, Line 180).

In the Limitation section of the Discussion, “First, we were certainly limited by the small number of patients and intermediate follow-up period.” has been changed to “First, we were certainly limited by the small number of patients with the high rates of knees lost to follow-up (31%) and intermediate follow-up period (6 years on average).” (revised manuscript Page 16, Line 256 – Page 17, Line 258).

According to the referee #2 comments, “Ranstam and Robertsson have shown that survival rates are not or very little affected by bilateral cases [36]. Thus,” has been inserted in the Limitation section of the Discussion (revised manuscript Page 17, Lines 267-268).
Referee #2:
One comment: it is not necessary to give the same information twice, both in text and in a table. All text in lines 146-158 could be given in a table. The table should have 2 columns (apart from headings), one for preop values and beside that one for postop values. That would be much easier for a reader to understand and compare. Otherwise a valuable contribution to the literature of TKA in severe damaged knees in patients with RA.

According to the referee's advices, “Table 1” (revised manuscript Page 25) and two paragraphs in the Results (revised manuscript Page 10, Lines 146-155) have been revised.

“The mean preoperative and postoperative ROMs, KSS, and FTAs were described in Table 1. Four knees had severe flexion contractures beyond 30 degrees. In terms of knee alignment, 24 knees (19 patients) were varus, and 2 knees (2 patients) were valgus. Nine knees had severe varus deformities (FTA > 190 degrees), while 1 had severe valgus deformities (FTA < 160 degrees). After TKA, fifteen knees (58%) had a ROM above 120 degrees. Statistical analyses revealed no significant difference pre- and postoperatively in maximum flexion angle, but significant improvements were observed postoperatively in maximum extension angle (p = 0.001), ROM (p = 0.04), knee score (p < 0.0001), function score (p < 0.0001), and FTA (p < 0.0001). Component angulations were also described in Table 1. These angles showed no significant changes over time, up to the final observations.” (revised manuscript Page 10, Lines 146-155)

“Changes in ROM and Knee Society Score (KSS; knee score/function score)” has been changed to “Changes in ROM (extension/flexion), Knee Society Score (KSS; knee score/function score), and FTA while standing” in the Methods (revised manuscript Page 9, Lines 130-131).

By the way - concerning inclusion of bilat cases: Ranstam, Robertsson (Acta Orthop 2010;81:10-14) have shown that survival rates are not or very little affected by bilateral cases. The Knee Society Score deals with one knee at a time and thus there is no influence of bilateral cases. On the other hand if using Knee Society Function Score you will have a serious influence from one knee to the other, but the authors did not used that score.

Thank you very much for the comments.

“Ranstam and Robertsson have shown that survival rates are not or very little affected by bilateral cases [36]. Thus,” has been inserted in the Limitation section (revised manuscript Page 17, Lines 267-268).
EDITOR’S COMMENTS:
"When revising according to the referee comments, in particular please ensure
the comments about the potential limitations are addressed and that the
conclusions in the main paper and abstract are moderated in light of this."
# According to the referee comments, we tried to state the potential limitations
clearly in the Abstract and Discussion.

We hope that our paper is now suitable for publication in BMC Musculoskeletal Disorders and we look forward to hearing from you at your earliest convenience.

Best regard,

Satoshi Hamai

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