Author's response to reviews

Title: Dynamic in vitro measurement of patellar movement after TKA: an in vitro study

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Comments to the reviewer’s report

Thank you for the evaluation of our manuscript and giving us the opportunity to revise and resubmit it. We carefully have read the reviewers’ reports and have made the requested changes.

Changes are underlined in the manuscript.

Reviewer S. Matsuda:

Page 8, line 22: We have revised our discussion of our findings on the kinematics of the resurfaced patella, and have taken reviewers comment into consideration. We thus altered the discussion on page 9, line 17-21 in the revised manuscript.

Page 9, line 3: In accordance with the altered findings on line 17-21, we have also altered this part as suggested by the reviewer (page 10, line 17-19).

Conclusion: We altered the discussion section in accordance to the reviewers comments (page 10, line 6-11), as well as the conclusions section (page 10, line 17-19 in the revised manuscript). As the test setup of Omori et al. (1997), who tested the kinematics of a different TKA system, is similar to the setup of the current study, we think our findings are comparable with those of that study.

Reviewer C.O. Tibesku:

Page 2, line 3: a study aim was included.

Page 2, line 6: we included more detailed information about the measurements.

Page 2, line 7: we added “physiologic”.

Page 3, line 11, line 13, 14 and page 4, line 8: we changed the wording according the reviewers suggestion.

Page 4, line 11: we added the words “proximal to the knee” to the manuscript.

Page 4, line 13, 14: we replaced the words ”relative” by “in relation” and “3D” by “three-dimensional”.

Page 4, line 21: we added more mathematical background for the geometrical transformation.

Page 4, line 22: we replaced the words “centre” by “center”.

Page 5, line 18: we gave detailed information about shape and geometry of the TKA system.
Page 5, line 19: we added the measurement reference.

Results: We added a comment about the change of patellar kinematics in the proximo-distal direction in “Results” (Page 7, line 7-10) and “Discussion” (page 9, line 22 to page 10, line 2).

Discussion: We added a sentence about the mentioned limitation (page 8, line 8-10).

Page 9, line 3: We have already responded to a similar comment by the first reviewer, S. Matsuda, please see above.

Figure 1: The legends were changed.

We do not fully agree that adding a picture of the whole test setup is necessary, as it is already described and pictured in several previous publications, please refer to:

- Ostermeier S., Hurschler C., Stukenborg-Colsman C., Quadriceps function after TKA-An in vitro study in knee simulator, Clinical Biomechanics 19(3) (2004), 270-276


- Stukenborg-Colsman C., Ostermeier S., Buhrmester O., Wirth C.J., Dynamische In-vitro-Messung des retropatellaren Drucks nach alloplastischem Kniegelenksersatz, Orthopäde 2003 32, 319-322


- Stukenborg-Colsman C., Ostermeier S., Wenger K., Wirth C.J., Relative Motion of a Mobile Bearing Inlay after Total Knee Arthroplasty, Clinical Biomechanics 17 (2002), 49-55