Reviewer's report

Title: Prosthesis Alignment Affects Axial Rotation Motion after Total Knee Replacement: A Prospective In vivo Study Combining Computed Tomography and Fluoroscopic Evaluations

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Reviewer: Tokifumi Majima

Reviewer's report:

This study evaluates whether component malalignment and mismatch affect axial rotation motions after TKR. This is an interesting study. However, I have some concern in the present paper.

Major points

1. In the abstract (Page 3 line 7-9) and conclusion (Page 14, line 7-8), the authors concluded that the relationship between Knee Society function score and rotational mismatch. However, there is no actual data. Also, the authors already reported the relationship between clinical results and rotational mismatch. Results of the present study cannot conclude the relationship between rotational mismatch and clinical results. The present study must answer only for the research question.

2. The authors need to assess coefficient of variation (CV) in order to show intraobserver consistency. (Page 6, line 3-5)

3. Are patients of outliers in Anatomic Landmark group and patients of outliers in Rotational mismatch group the same? That is to say, whether rotational platform implant has self-alignment mechanism?

Minor points

1. There are two femoral rotational landmarks, clinical epicondylar axis and surgical epicondylar axis. Which axis the authors measured? (Page 5, line 23)

2. Why the authors definite rotational misalignment in Femoral component for ±3°, and Tibial component for ±10°? (Page 6, line 13)

3. The figures need SD bar.

4. There are no figure legends for Fig. 6 and 7. Also, There are no A) and B) in figure 4, and 5 that is mentioned in figure legends. The figures may be miss-numbered.

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
'I declare that I have no competing interests'