Reviewer's report

Title: Effects of Stemmed and Nonstemmed Hip Replacement on Stress Distribution of Proximal Femur and Implant

Version: 1 Date: 21 April 2014

Reviewer: Zong-Ping Luo

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Discretionary Revisions

In this study, two major generic hip implant designs named stemmed system and non-stemmed system were quantitatively evaluated using finite element analyses. The method and results were well presented. The conclusion was straightforward and understandable. The study computationally proved that non-stemmed implant have similar load-transferring pattern to intact hip, better than stemmed one. However, some limitations needed to be clarified. Validation step of hip finite element model should be presented to assure the reliability and accuracy of the model.

Specific comments:
Page 8 line 15: Since this model is quasi-static model, the meaning of the micro-motion analysis at bone-cup interfacial in this study was limited; it was suggested to conduct during walking. Moreover, micro-motion of implant could happen in three dimensions due to varied loading forces.

Page 12 line 24: Optimization design analysis of non-stemmed implant could be more informative for readers in the future study.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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

Declaration of competing interests:

all