

October 5, 2017

Dear Editor,

Please find enclosed the edited manuscript in Word format (file name: 35682-Revised Manuscript.doc).

Title: Acetabular cup version modelling and its applying on plain radiogrmass

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Name of Journal: *World Journal of Orthopedics*

ESPS Manuscript NO: 35682

The manuscript has been improved according to the suggestions of reviewers:

1 Format has been updated.

2 Reviewer comments

2.1 Reviewer (code: 02705200)

I would like to congratulate the authors for the excellent work.

Response: Thank you for your congratulation and time that you have spent while reading it.

2.2 Reviewer (code: 03518978)

This paper estimated sensitivity, specificity of computer modeling of acetabular component orientation- signs of cup version on standard antero-posterior radiographs and a correlation to patients with dislocations. It also evaluated the incidence of inadequate anteversion sign among patients with dislocations. It has been found that inadequate anteversion sign appears when the anteversion angle is less than half the angle between X-ray beams in the AP hip and pelvis views. The sensitivity of the inadequate anteversion sign was 29% (95% CI 9-46%) and specificity was 92% (95% CI: 88 - 96%).

Generally this is an interesting study. However there is a concern that needs to be clarified. There are many factors that determine whether or not dislocations occur after THA, such as position of the cup and femur head, the length of the stem, the muscle function, etc. This study only evaluated the correlation between cup position and hip dislocations, and therefore may ignore some confounding bias. Please address this concern.

Response: -Thank you for your suggestion. We wanted to know statistical significance of SA for hip dislocation and estimated a sign of anteversion among patients with and without hip dislocation. The result of our study showed that cup version sign has low sensitivity (29%) and predictiveness (positive predictive value) of SAI (20%) and can be explained by multifactorial causes of dislocation such as stem position, offset, muscle insufficiency and comorbidities. Furthermore, this findings were discussed in "Discussion". We haven't concluded that the cup malposition is the only cause of hip dislocation.

2.3 Reviewer (code: 02705018)

Although this is an interesting study analyzing the correlation between acetabular cup orientation and hip dislocation following THA, there are some issues to be solved in order to be appropriate this manuscript for publication. 1. Conclusion which is considered as essential part of a manuscript is not included in this paper. 2. References are not following journal's instructions and form. 3. This manuscript deals with acetabular cup position and its relation with hip stability after THA. Still there are some other parameters such as such as the length of the stem and the muscle function which potentially influence hip stability. These predisposing to hip dislocation should be taken into serious consideration in order to avoid unsafe conclusions and bias the final results.

Response: Thank you for your suggestion. 1) We have made conclusion of our study. 2) References were corrected according to WJO citation. 3) We wanted to know statistical significance of SA for hip dislocation and estimated a sign of anteversion among patients with and without hip dislocation. . Furthermore, this findings were discussed in "Discussion". We haven't concluded that the cup malposition is the only cause of hip dislocation.

2.4 Reviewer (code: 00467030)

It is an interesting retrospective study on computer evaluation of acetabular component orientation whether the signs of cup version on AP radiographs correlated with patients' dislocations. The contents would be meaningful to related clinical practitioners. The following points are suggested for further consideration. 1. The demographic of the patients of the two groups are suggested to be more detailed including the gender and age (mean, range), unilateral and bilateral involved, etc. 2. The abbreviations of Table 1 such as Ds, SAI and SA would need to be defined as footnotes of the table.

Response: Thank you for your suggestion. We have corrected our patient groups, abbreviations of table 1 according to your review statement.

2.5 Reviewer (code: 02444802)

This manuscript is of interest to WJO readers as it offers new insight as to a simple radiographic assessment on the x ray images gained on patients with hip prostheses and prediction on success outcome. The data analysed was rigorous and consisted of over 200 hip analyses using previously published elliptical measurement methodology. Appropriate statistics have been applied. A few grammatical changes are needed but otherwise ready for publication.

Response: Thank you very much for your review of our study. We have corrected grammatical mistakes.

4 References and typesetting were corrected. We have changed the title of the article (included in text of the revised article). We also provide audio core tip and the required documents.

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Thank you for publishing our manuscript in the *World Journal of Orthopedics*.