Reviewer’s report

Title: Risk factors for failure of revision total hip arthroplasty using a Kerboull-type acetabular reinforcement device

Version: 0 Date: 10 Jul 2017

Reviewer: Thomas Pfeiffer

Reviewer's report:

The authors performed a retrospective study which describes the association of age, type of bone graft, size of the acetabular defect (AAOS Classification), PROMS and BMI with radiographic failure in revision total hip arthroplasty using Kerboull-type acetabular reinforcement devices. They found that that Beta-TCP used as bone graft is associated with radiographic failure, as well as AAOS type 4 acetabular bone loss. The methodology of this retrospective study is appropriate, and includes a relatively large patient collective compared to prior studies in this field of research, with a minimum follow up time of 5.1 years. The inhomogeneity of size, time to follow up and the three compared types of bone grafts were used at three different periods from 2000 and 2012 are the major criticisms in this manuscript. However, the clinical relevance and impact of this study, especially the comparison of the three different types of bone grafts is high. Based on this I recommend: accept with revisions.

Title
A more cautious formulation should be reconsidered.

Introduction
The introduction is written interestingly and provides a good overview of the topic. Though, the introduction should be shortened. Hypothesis and clinical relevance should be named in the introduction.

Materials and Methods
Line 99 - 103 Please specify the patient inclusion: *Total collective of revision THA *Consecutive patients?

Figure 3: Please report descriptive for the subgroup analysis
Line 114 Were all surgeries performed by a single surgeon?

Line 142 Who classified the acetabular defects?

Line 156 Was the collective normal distributed, please report.

Results
The results section is very comprehensive. The figure supplement the results and the results are comparable to former studies. Discussion
The discussion properly summarizes the results and connects it to existing studies. Line 194: "90.9% when re-revision was the endpoint." This number and endpoint has not been described in methods or results. Please include in the other sections or focus on radiologic failure. Line 238: Please reformulate this sentence.

The conclusion should focus on the main finding of the study and state the clinical significance of the present study.

Tables and Figures
The tables are helpful in interpreting the data. Please correct the misspellings (Fig 2).

References
The references are fine and most of them appear correctly formatted.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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