Reviewer's report

Title: Short-stem Reconstruction for Megaendoprostheses in Case of an Ultrashort Proximal Femur

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Reviewer: Piya Kiatisevi

Reviewer's report:

This paper review results with the use of short-stem endoprosthesis in patients who had short proximal femur after removing bone and soft-tissue sarcomas and perform distal femoral, intercalary endoprosthesis and stump lengthening procedures. If this system work, it is obviously provide better results compare to other reconstruction such as total femur endoprosthesis.

The questions and methods are well defined and described although some questions have been raised. How do the authors determine the stem diameter? If the authors used CT or MRI, were all of the stems fit well while implanting? While patient No.8 experienced early loosening from stem too small, why should they used that small stem in the first place?

The authors noted that the remaining proximal femur should be at least 40mm. However, the stem length ranged 45-105mm. Do the authors recommend penetrating the piriformis fossa and left the remaining stem outside the proximal femur in patient with 40mm proximal femur remaining?

In the Results, the authors noted that the stem length ranged 45-105 mm but on the table 2, the stem length ranged 45-130mm. Which one is incorrect? What is the definition of "short stem"? 130mm is quite a standard length for endoprosthetic stem.

Again, the stem diameter noted as 18-25mm but on the table 2 was 10-25mm. The authors should recheck these important numbers before submitting.

If the authors could include images of the 3 stems with complications, it would be easier to picture these.

Half of the discussion described inferior result of removing proximal femur which is obviously understandable. It would be better if the authors focus on the short-stem issue which the most concern is more chance of aseptic loosening compare to the standard stem. Is there any role of the cemented stem with cross pin as Dr. Eckardt described earlier? Comparison with that kind of papers using short stem in term of functional result would be beneficial. Another good option is to reconstruct using an compressive osteointegration system, how is the authors think?

I also would like to know the development of this stem, including material, coated
with HA or HA-TCP if possible?

**Level of interest:** An article of outstanding merit and interest 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'