Author's response to reviews

Title: Revision of hip resurfacing arthroplasty with a bone conserving short-stem implant in a young patient: a case report and review of literature

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Author's response to reviews: see over
Dear Professor Kidd,
Dear Editors and Reviewers,

We thank the reviewers and the associate editor for reviewing our manuscript and the useful comments. We have thoroughly revised the manuscript and hope we could address all of the mentioned aspects. Detailed corrections are listed below point by point and are also underlined in the manuscript:

- **Associate Editor**

Explanation of benefits of metaphyseal fixation of prosthesis over conventional uncemented stems which perform well in this situation. Though potentially less bone may be losted with revision of SHA, uncemented stems are showing excellent long term results. I am not sold on benefit of SHA over conventional stem in this situation, especially as surgeon may be more familiar with conventional stem.

*We thank the associated editor for this input, as we did not describe the advantages of the short stem implants in our manuscript.*

*The associated editor is certainly right that conventional stem perform well in this situation and surgeons might be more familiar with a conventional stem. We also agree that there is nothing wrong with implanting a conventional stem when the surgeon feels more comfortable and safe with this procedure.*

*However, with the presented case we want to show a promising alternative which offers two major advantages, especially for young patients:*

a) further preservation of femoral bone stock, with the option to implant a conventional stem should a second revision become necessary

b) with short stems it is easier to preserve the soft tissue as the curved and short design facilitate the preparation of the femoral cavity as well as the insertion of the stem.
We have included those points into the manuscript – but also pointed out that long term results, as for conventional hip arthroplasty, are not yet available.

Page 5-6, line 110-123:

- “So far, good functional results and good short- and mid-term survival rates have been reported for various short-stem hip designs [10-12]. Advantages of SHA include a more physiological load transfer at the metaphyseal part of the femur and a reduced soft tissue trauma, as the small and curved designs facilitate the preparation of the femoral cavity and the insertion of the stem [12]. As a result, a faster postoperative mobilization with a reduced hospital stay has been reported [15]. A further advantage of SHA is the preservation of the femoral bone stock. This allows to use a conventional stem should a revision become necessary and thus to avoid revision implants with an inferior outcome. At the same time, all acetabular cups, bearing surfaces and head sizes that are used for conventional total hip arthroplasty can also be applied for SHA. For those reasons, SHA offers an attractive alternative for young patients requiring hip replacement and as shown in this report, can also be used to revise a HRA implant. Nevertheless, it should be noticed that up to now, only short- and midterm results are available for SHA and these results still have to be confirmed by long-term studies.”

Would also like to see with a lateral view of inserted prosthesis in addition to AP view.

A lateral view of the inserted prostheses at the 2 year follow-up was included as proposed by the associate editor.

- see attached Fig 2b
- Figure 2 a)-b): Short-stem hip implant two years after revision surgery in a) anterior-posterior and b) lateral view
- changed accordingly in the manuscript to “Fig 2a, b” (page 4 line 73 and 78)

• Editorial comments:

Please replace dates found in the case presentation to the amount of time this occurred before the presentation of the case report.

Was changed accordingly (p3, line 54-55)
- "A 56-year-old Caucasian woman presented in the outpatient clinic of our department with osteoarthritis of the left hip about 6 years ago."

We hope we could address all of the raised questions sufficiently. If you have further questions please contact us and we will be happy to provide you with the desired information.

Thank you again for considering our manuscript for your journal,

With best regards,
Florian Schmidutz and Co-authors