Author’s response to reviews

Title: Comparison of condylar morphology changes and position stability following unilateral and bilateral sagittal split mandibular ramus osteotomy in patients with mandibular prognathism

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Author’s response to reviews:

Editorial Office,
Head & Face Medicine

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Dear Editor,

Thank you very much for your letter and advice. We have revised the paper according to the reviews’ comments, and would like to resubmit it for your consideration. The revisions are highlighted in yellow in the revised manuscript. Point-to-point replies to the reviews’ comments are listed in the next page.

We are really grateful to the reviewers for her/his comments aimed at improving the manuscript.

All of the authors have read and approved the manuscript. We hope you will find the revised manuscript of sufficient merit and interest to warrant publication in your journal, and look forward to hearing from you in due course.

Best Regards,

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We would like to express our sincere thanks to the reviewers for their constructive comments. Here are our responses to the reviewer’s comments.

Reviewer 1

1 - Abstract and Background;

- Page 2, in Abstract section; "Here, CBCT was performed before surgery (T0), immediately after surgery (T1), and 1 year postoperatively (T2). Differences of condylar sizes, condylar surface deviation..."

- Page 2, in Abstract section; "Condylar surface morphology changes at the deviated side of TMJ before and 1 year after the surgery..."

- Page 5, in Background section ; "With the development of imaging technology, numerous CBCT-based analysis methods have been introduced to assess condylar remodeling. For comprehensive evaluation of condylar surface changes, 3D reconstructed models and a method of superimposition over the ramus region are necessary [8]."

Please explain the abbreviations before using.

Reply: Thanks for your precious suggestion. We have explained the mentioned abbreviations and evidenced them in yellow in the revised version of the manuscript.

2 - Methods;

-Please insert anatomical landmarks/points and planes used in the study.

Reply: Thanks for your precious suggestion. The related anatomical landmarks and planes used in the study have been added in Table 1 and Figure 4.

-TMJ dysfunction symptoms do not depend on only anatomical changes of the condyle and the position of the condyle in the glenoid fossa. Physiological adaptation during anatomical changes plays an important role in TMJ dysfunction symptoms. Physical examination findings of patients with symptoms of TMJ dysfunction should be included in the study and these findings should be compared at T0, T1 and T2 times.
Reply: Thanks for your precious suggestion. We agree with the reviewer that the physiological adaptation during anatomical changes indeed plays an important role in TMJ dysfunction symptoms. TMJ function is the routine examination of our clinical treatment, and the results are collected at different time point of treatment. The TMJ clinical examination such as TMJ pain, clicking and maximum mouth opening at T0, T1 and T2 were added in Table 6. And we have made necessary changes in the revised version of the manuscript.

3-Discussion,

-In the first and second paragraph; there is repeated information about USSRO and BSSRO. It has been already written in Background section. Please eliminate the repeated information.

Reply: Sorry for the repeated descriptions. We have deleted the repeated information about USSRO and BSSRO in the first and second paragraph of the discussion.

- We suggest the authors to include considerations about the limitations of the study.

Reply: Thanks for the reviewer’s reminding. The limitations of the study have been added at the end of the discussion and evidenced in yellow in the revised version of the manuscript.

Reviewer 2

- The authors describe the CBCT Scanner parameters. Did they use these settings from 2005 on?

Reply: Yes, we use the same CBCT Scanner setting from 2005.

- Could the authors describe the need or use of the T1 Scan? Other than to see changes in the midline which is expected to happen.

Reply: T1 Scan is our routine clinical examination. With T1 scan, we can assess the actual movement of the segments of the mandible compared with the virtual movement before surgery to verify the accuracy of simulated surgery. Besides, we want to make sure whether the joints are in the right position, that is the condyles are placed inside the glenoid fossa. Last but not least, when the patients are discharged after surgery, T1 scan is also a clinical evidence of the surgical outcome showing to the patients.

Reviewer 3
1. Usually, facial asymmetries are pan-facial making midlines difficult to assess and accurately reproduce.

Reply: We agree with the reviewer. In patients with facial asymmetry, it is not easy to setup the facial midlines. In our study, we setup up the facial sagittal plane by some clinical anatomical landmarks (Orbitale (Or), Anterior nasal spine (ANS), Porion (Po), et al.) to make sure the accuracy and repeatability.

2. Inclusion criteria. Are you including only isolated hemi mandibular elongation cases (lateral torque only on the condyle) or hybrid elongation / hyperplasia cases (lateral and vertical torque on condyle) (Makek & Obwegesser)?

Reply: In our study, we included only isolated hemi mandibular elongation cases (lateral torque only on the condyle).

3. Study population demographics is not stated. Other studies have suggested males have a better ability to adapt to condylar position than females.

Reply: Sorry for the incomplete description. Study population demographics have been added in the result of the revised manuscript.

4. Was a standardized surgical procedure used? The length of the split, whether a Hunsuck modification was used and the method of bone fixation will all effect the condyle.

Reply: Sorry for unclear descriptions. In the study, all of the patients were performed with a standardized SSRO surgical procedure modified by Hunsuck. We have added the details in the Materials and Methods part. The related reference has been added.


5. Though your study shows a USSRO can be used to safely to treat small mandibular asymmetries with a stable result of up to 1 year, the long term stability 5 years or more of the USSRO has not been reported nor have long term effects on the TMJ. I believe this should included in your conclusion.

Reply: Thanks for your precious suggestion. Some limitations do exist in our study. The work presented is still limited to a relative short-term follow-up study. I agree that one year follow up is not sufficient to show postoperative stability also not with regard to TMJ-disorders. Future investigations will focus on long-term postoperative stability evaluation. We have made necessary changes in the conclusion.