

## READER'S FORUM

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Three-dimensional evaluation of  
mandibular width after mandibular  
asymmetric setback surgery using sagittal  
split ramus osteotomy.

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I appreciate the author's work investigating the widening of the posterior border of the mandible after mandibular setback surgery using sagittal split ramus osteotomies (SSRO). For a better understanding of your work, I would like to ask the following questions.

**Q1.** In the present study, the authors used a 2-mm asymmetric setback to group symmetric and asymmetric setback groups. The asymmetric setback is typically necessary when the mandibular asymmetry is yaw-dominant type, but not in cases of roll-dominant or translation-dominant asymmetries. Therefore, some roll and translation asymmetries may have been present in the symmetry group, resulting in different types of bony interferences during surgery and ultimately contributing to mandibular width widening. What were the causes for the widening of mandibular width in the symmetry group?

**Q2.** In my opinion, lingual bending osteotomies are often required to minimize the development of bony interferences during an asymmetric setback. Do you have a guideline or suggestion for this?

**Q3.** In the present study, the widening of the mandibular posterior border was partly resolved six months after surgery. What was the main reason for this improvement? Positional changes of the condyles (proximal segments) or remodeling?

Questioned by

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We appreciate your thoughtful questions, which help us to refine our study.

**A1.** We agree your comment. Some non-yaw type asymmetries might have been present in the symmetry group. In addition, a previous study<sup>1</sup> showed that the use of rigid internal fixation following bilateral SSRO (BSSRO) resulted in a greater transverse condylar displacement than wire fixation. Another previous study<sup>2</sup> also showed widening of mandibular width in the symmetry group immediately after mandibular setback surgery using BSSRO.

**A2.** Lingual bending osteotomy is beneficial when an excessive premature bony contact is predicted by virtual simulation or observed in the surgical field, while grinding is well suited for treating minor bony interferences, owing to its simplicity and reduced surgical morbidity.<sup>3</sup>

**A3.** It could be because of remodeling caused by the separation of the medial pterygoid muscle, which reduced muscle extension in the gonial region.<sup>4</sup> Alternatively, the proximal segment may return to its original position with

semirigid fixation and neuromuscular adaption. Lastly, the distal segment can easily change postoperatively, whereas the proximal segment does not change as easily because of its adaptation to the preoperative environment.

*Replied by*

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#### References

1. Stroster TG, Pangrazio-Kulbersh V. Assessment of condylar position following bilateral sagittal split ramus osteotomy with wire fixation or rigid fixation. *Int J Adult Orthodon Orthognath Surg* 1994;9:55-63. <https://pubmed.ncbi.nlm.nih.gov/8006484/>
2. Yoo JY, Kwon YD, Suh JH, Ko SJ, Lee B, Lee JW, et al. Transverse stability of the proximal segment after bilateral sagittal split ramus osteotomy for mandibular setback surgery. *Int J Oral Maxillofac Surg* 2013;42:994-1000. <https://doi.org/10.1016/j.ijom.2013.01.021>
3. Jo H, Ohe JY, Lee JW, Lee BS, Jung J. Posterior bending osteotomy: an effective measure to secure facial symmetry in orthognathic surgery. *J Craniomaxillofac Surg* 2021;49:538-44. <https://doi.org/10.1016/j.jjcms.2021.01.021>
4. Pan JH, Lee JJ, Lin HY, Chen YJ, Jane Yao CC, Kok SH. Transverse and sagittal angulations of proximal segment after sagittal split and vertical ramus osteotomies and their influence on the stability of distal segment. *J Formos Med Assoc* 2013;112:244-52. <https://doi.org/10.1016/j.jfma.2012.02.013>

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