

Letter to the Editor

RE: RE: Biomechanical evaluation of two miniplate fixations applied in the anterior region after Le Fort I osteotomy: an experimental study

Sir,

We thank the authors for their comments on our article describing two-miniplate fixation only in the anterior region after Le Fort I osteotomy in 10 mm advanced models.

In the models we applied in our study,¹ there was contact between the cutting surfaces. Since the maxilla was moved forwards 10 mm after the Le Fort I cuts, the contact surface was less than expected. Therefore, the plates used to stabilise the maxilla in this study were not only load-bearing but also load-sharing.

We evaluated both fixation groups up to 120 N because we could not apply a load of more than 120 N in the two-plate fixation group due to the deformation. The bite force stated by the authors in the comment is one of the maximum forces that can occur in healthy people. It is not possible to reach these forces during the recovery period in patients who have undergone orthognathic surgery. In a clinical study, it was reported that the bite force was lowest two weeks after surgery and it returned to the preoperative level after between three and six months.² Ueki et al³ also showed that the bite force regressed to around 100 N in the first month in patients undergoing bimaxillary surgery. Our study aimed to analyse stability in the early postoperative period when considered clinically. In this period patients cannot apply large amounts of bite force until they adapt to their new occlusion with the effect of their proprioceptive senses. We also recommend the consumption of liquid and soft foods to our patients in the early postoperative period. Therefore, we think that the amount of load evaluated in our study is sufficient for the early postoperative period.

We agree with the possibility that the use of Class III elastic traction may cause inferior retraction of the posterior maxilla. It can be predicted that this situation is especially likely to occur in cases where two-miniplate fixation is applied. In our centre, post-orthodontic treatment is usually started around four to six weeks. In addition, as long as there is no condylar sagging after orthognathic surgery, we solve occlusal discrepancies with vertical light-guiding intermaxillary elastics in the early postoperative period. Class III elastic needs are almost non-existent. However, if only two-plate fixation has been applied, the orthodontist may be reminded to be careful in using Class III elastics.

We have been supported by our biomechanical study that four-miniplate fixation should be preferred instead of two-miniplate fixation in large maxillary advancements.

Conflict of interest

None.

Ethics statement/confirmation of patients' permission

Not required.

References

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