READER'S FORUM

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Effectiveness of *en-masse* retraction using
midpalatal miniscrews and a modified
transpalatal arch: Treatment duration and
dentoskeletal changes.

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First of all, I want to thank and congratulate the authors for this very informative and well-presented article. Nonetheless, I do have several questions in the areas of treatment protocols as well as evaluation of treatment effects, which are listed below:

Q1. Greater merits of the palatal mini-implants, compared with those placed on the buccal aspect of the posterior maxilla, have been previously recognized. It is interesting that the authors of this article chose 2 different sizes of miniscrews, one in 1.8 mm in diameter and 6.0 mm in length and the other in 2.0 mm in diameter and 6.0 mm in length, which were implanted right on the midpalatal suture as shown in Figure 2A. Would the authors kindly provide the reasoning behind the selection of these particular dimensions of the miniscrews and their placement sites?

Q2. Failure of a midpalatal miniscrew is often associated with inflammation of its immediately surrounding tissue. Are there any specific regimens followed in order to keep the inflammation under control and maximize its healthy status during treatment? Also, if it is documented, what is the success rate of the midpalatal miniscrews used in this study?

Q3. In the headgear (HG) group the patients used high-pull HGs where straight-pull HGs could be more advantageous due to their more horizontal posterior force vector. I am curious if there is any biomechanical advantage of this choice. In addition, since it is the high-pull HG that was used after all, wouldn't it be important to evaluate its intrusive effects on the maxillary molars given that it could lead to an increase in SNB angle? Finally, following the same logic, I feel it may be more informative to report the SNA, SNB, FMA angles separately before and after the treatment instead of just changes in effective ANB angles.

Questioned by

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We thank Dr. Shin for her interest in our article and for providing the opportunity to clarify the concerns regarding the methods used in this study.

A1. We used two different sizes of miniscrews to check which size would be proper. In the Figure 2A, a miniscrew in 1.8 mm by 6 mm dimension is shown. After measuring the thickness of the mucosa and bone in the area of the midpalatal suture, we made a decision that a 6 mm-miniscrew would be safe to use. Also, in terms of diameter, since we believed that a miniscrew might get fractured due to the thick cortical bone, we used a miniscrew as thick as possible.

A2. Among cases in which a total of about 200 miniscrews were implanted, there were 2 cases that miniscrew

heads were covered with mucosa due to inflammation. A patient experiencing this condition was referred to the department of oral surgery and the swollen mucosa adjacent to the miniscrews was removed. After monitoring for about 3 months, orthodontic treatment was resumed when the condition improved. However, no miniscrews were removed.

After implanting miniscrews, no special caution or instruction was given to a patient, and the documented success rate was 92.5%. We found no significant difference between the two different types of miniscrews.

A3. For the orthodontic treatment with Level Anchorage System, high pull HG is used. For a case in which high pull HG was used, it was possible to prevent the extrusion of the maxillary first molar, but not possible to intrude the maxillary first molar. The evaluations of SNA, SNB,

FMA and others have been reported in the previous article,¹ which were based on these cases. For more details regarding the treatment effects, please refer to this article.

Replied by

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Reference

1. Lee J, Miyazawa K, Tabuchi M, Kawaguchi M, Shibata M, Goto S. Midpalatal miniscrews and high-pull headgear for anteroposterior and vertical anchorage control: cephalometric comparisons of treatment changes. *Am J Orthod Dentofacial Orthop* 2013; 144:238-50.

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