

## READER'S FORUM

Seo KW, Kwon SY, Kim KA, Park KH, Kim SH, Ahn HW, Nelson G

**Displacement pattern of anterior segment using combined antero-posterior lingual retractor combined with a palatal plate.**

- *Korean J Orthod* 2015 Nov;45:289-98.

---

I thank the authors for this interesting article and hope to ask their further clarifications in following areas.

**Q1. Compared with the C-lingual retractor group, the antero-posterior lingual retractor groups showed more intrusive effects on the anterior teeth during the retraction period. Certainly, it is desirable if a gummy smile is on the problem list. However, in more common situations of absence of the anterior vertical excess, how can one control the vertical level of the anterior teeth with the antero-posterior lingual retractor appliance?**

**Q2. What could be the merits of using the antero-posterior lingual retractor over the conventional lingual brackets?**

**Q3. To distalize or intrude the posterior teeth, what kinds of modifications do you recommend on the antero-posterior lingual retractor appliance?**

**Q4. Considering the action and reaction force in the law of physics, the intrusive force in the anterior region should be associated with the extrusive force in the posterior. Yet, the results showed that the vertical positions of the posterior teeth were well-**

**maintained. How can you explain this result?**

*Questioned by*

Joohyung Kim

*Department of Dentistry, Hanyang University Medical Center Seoul Hospital, Seoul, Korea*

As one of the authors of this article, I would like to thank the readers for their valuable inputs.

**A1.** The vertical level of anterior teeth is dictated by positions of the screw insertion sites and heights of the appliance hooks. Therefore, by modifying these two factors, clinicians should attempt to keep the direction of the retraction force in parallel with the occlusal plane. If necessary, use of vertical elastics should help as well.

**A2.** The antero-posterior lingual retractor poses many advantages over the conventional lingual appliances. For instance, it allows early resolution of lip protrusion through initial retraction of the anterior teeth. Because the residual space after retraction can be used for leveling and finishing at the same time, the overall treatment duration may be shortened as well. Therefore, the appliance may be more effective in treatment of class II hyperdivergent gummy smile cases as it maximizes retraction and intrusion of the anteriors while keeping the posterior teeth in their positions.

**A3.** In situations where more distalization is beneficial after extraction of the first premolars, additional total arch distalization can be also achieved by application of retraction force once the posterior path hole and the guide bar are merged as one unit by light-cured resin.

For more pronounced effects of the posterior intrusion, a solder type intrusion transpalatal arch could be used in conjunction with the already placed temporary skeletal anchorage devices.

**A4.** During retraction the anterior segment of the appliance undergoes a clockwise rotation and such a moment causes an intrusive force vector in the posteriors via the guide bars. The end result is a negation of the

extrusive force in the posterior region via the intrusive moment, keeping the vertical level of the posteriors rather unchanged.

*Replied by*

**Hyo-Won Ahn**

*Department of Orthodontics, College of Dentistry, Kyung Hee University, Seoul, Korea*

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.