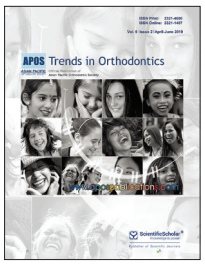
ScientificScholar®
Knowledge is power
Publisher of Scientific Journals

www.apospublications.com

APOS Trends in Orthodontics



Editorial

Jaw bone/face instead of occlusion first concept in treating Class III growing patients

Eric Liou

Department of Craniofacial Orthodontics, Chang Gung Memorial Hospital, Taipei, Taiwan.

***Corresponding author:**
Eric Liou,
Department of Craniofacial Orthodontics, Chang Gung Memorial Hospital, Taipei, Taiwan.

lioueric2042@gmail.com

Received : 14 April 2022
Accepted : 14 April 2022
Published : 19 April 2022

DOI
10.25259/APOS_71_2022

Quick Response Code:

The contemporary approach for the improvement of occlusion in Class III growing patients is through maxillary orthopedic protraction. Several techniques and appliances have been advocated, such as the facial mask with/without maxillary rapid expander, alternate rapid maxillary expansion and constriction, or fixation plate/TADs with application of intraoral Class III elastics.

Two recent publications inspired me to summarize the following thoughts in this editorial, and these thoughts were in my mind for a long period of time:

The Kevin O'Brien's Orthodontic Blog (https://kevinobrienorthoblog.com) recently posted a comment, "At least, a trial on bone anchored maxillary protraction," on an article recently published in the AJODO, "Dentoskeletal comparison of miniscrew-anchored maxillary protraction (MAMP) with hybrid hyrax (HH) and conventional hyrax (CH) expanders: A randomized clinical trial" (https://doi.org/10.1016/j.ajodo.2021.02.017). This article did a single-centered RCT with two parallel arms with a 1:1 allocation ratio on orthodontic patients aged 9–13 years with Class III malocclusion and maxillary deficiency of a Witts of <−1 mm with an anterior crossbite or edge-to-edge incisors. The authors treated the patients with HH anchored MAMP expander and compared to the patients treated with CH anchored MAMP expander under the same activation protocol twice a day for 14 days. After the expansion, the authors used Class III intermaxillary traction elastics from the expanders to two mandibular miniscrews with 150 g per side for the first month and then 250 g for 11.3 months in the HH and 11.0 months for the CH. They evaluated the cephalometric OJ and Co-A point changes. The authors concluded that "MAMP with HH and CH expanders was successful at correcting reverse or edge-to-edge incisal relationships; there were no differences in the skeletal and dental effects between the groups;" and the HH was more effective at preventing mesial movement of the upper molars than the CH appliance.

The comment given by the Kevin O'Brien's Orthodontic Blog is "We need to be somewhat cautious with other potential conclusions. For example, we cannot conclude that the effect of this treatment is similar to bone anchored maxillary protraction (BAMP) because they have not been compared in a trial. The current paper's authors point out that other groups have reported a change in Wits of 5.9 mm. This change is far greater than this study. However, the BAMP studies have used the same carefully selected retrospective samples in several studies. I, therefore, wonder if this significant difference is a result of selection bias."

I agreed mostly with the comments given by the Kevin O'Brien's Orthodontic Blog for that article and research itself on the sampling and occlusion. However, the Kevin O'Brien's Orthodontic

Blog only gave criticisms on the sampling and conclusions of that article with no constructive comments on how we could lift up further in Class III growing patients for the improvement of face, control of the mandibular growth, and the skeletal relationship. By taking of the advantages of this editorial, I have different perspectives and points of view in the treatment of Class III growing patients from the Kevin O'Brien's Orthodontic Blog to share with you.

For the treatment in Class III growing patients, we mostly concern the improvement of occlusion and maxillary orthopedic effects. The question is whether the occlusion and maxillary orthopedics are the final goals for the treatment? I believe they are not. Any treatment for Class III growing patients without improvement of a Class III facial profile and control of mandibular growth could be invalid.

No matter what the techniques of maxillary orthopedics through circumaxillary sutures growth are, the subsequently maxillary anterior surface resorption remodeling and specially the mandibular growth might compromise the maxillary orthopedics. It has been well known facts that the maxillary anterior surface resorptive remodeling and the growth amount of mandible are hardly to be controlled, although functional appliances or chin cap applications have been advocated and tried clinically for a long period of time.

We have been treating Class III patients with an implanted and unchangeable concept that we have to improve the Class III malocclusion first. As a matter of fact, the improvement of maxillomandibular skeletal relationship and facial profile should be even more important and earlier than the improvement of Class III malocclusion. Once the Class III maxillomandibular relationship and facial profile have been improved, the occlusion would be much easier to be improved. This is a concept of face-first/jaw bone-first, instead of occlusion-first. The question is what the strategy is for the face-first/jaw bone-first.

For a successful growth modification in Class III growing patients in both of occlusion and facial profile improvement, the constructive strategy could be to control the maxillary anterior surface remodeling through periodontal and periosteal growth and to control mandibular growth direction through the jaw bone/face-first approach instead of occlusion first.

How to cite this article: Liou E. Jaw bone/face instead of occlusion first concept in treating Class III growing patients. APOS Trends Orthod 2022;12:1-2.