

READER'S FORUM

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Differences in dentoskeletal and soft tissue changes due to rapid maxillary expansion using a tooth-borne expander between adolescents and adults: A retrospective observational study.

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We appreciated the article by An et al.¹, who compared the dentoskeletal and soft tissue changes after rapid maxillary expansion (RME) between the two different age groups. We have a few comments and hope to seek the authors' feedback regarding the following:

Q1. It was stated in the article that all patients included in this investigation were diagnosed with transverse maxillary deficiency. This diagnosis is often done based on the amount of maxillomandibular transverse differential calculated from the landmarks on posteroanterior cephalograms. Could the authors provide more details on the diagnosis criteria used in this study?

Q2. The success rate of miniscrew-assisted rapid palatal expansion varied from 40.0% to 93.2% for the patients aged from 16 to 30 year-old depending on the specific age and gender.²⁻⁴ Though it was not part of the specific aims of this investigation, we are curious if the authors could comment on the success rate of conventional RME in the adult group.

Q3. In light of the results that the adult RME therapy displayed decreased effectiveness in skeletal expansion and also reduced magnitude of side effects

such as alar width increase, how could the authors describe the possible indications for the conventional RME in adults?

Questioned by

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A1. In general, the following criteria were used to diagnose transverse maxillary deficiency.

1. Clinical criteria for transverse maxillary deficiency
 - 1) Posterior cross bite: unilateral or bilateral
 - 2) Insufficient buccal overjet
 - 3) Transverse compensation in the posterior segments including buccal tipping of the maxillary molars and lingual tipping of the mandibular molars.
 - 4) Open lingual occlusion
2. Dental cast analysis⁵
 - Differences in the maxillomandibular dental arch width: Norm is about 5 mm.
3. The posteroanterior cephalogram⁶
 - The maxillomandibular transverse difference index: (AGL [antegonial left] – AGR [antegnoial right] width) – (JL [jugal point left] – JR [jugal point right] width): Norm is about 20 mm

A2. The failure rate of conventional RME in mature patients was not high because most of patients were adolescents in late teens or young adults in their early twenties. There were more than 50 patients who received conventional RME treatment, but less than 10 patients failed. It should be noted that, if there are no clear signs

of opening the midpalatal suture after about 10 days of rapid palatal expansion, palatal expansion should be immediately stopped to avoid complications such as bony dehiscence and gingival recession.

A3. In the case of the conventional tooth-borne expander in adult patients, more dental expansion with less skeletal expansion may appear when compared with the mini-implant-assisted rapid palatal expander. However, since clinically successful maxillary arch expansion can be expected, the conventional tooth-borne expander may be used as an alternative for adult patients who cannot undergo invasive mini-implant insertion.

Replied by

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