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Relationship between rapid expansion of the maxilla and root resorption

Congratulations to Mucahid Yildirim and Mehmet Akin for their exhaustive and careful research, entitled "Comparison of root resorption after rapid maxillary expansion transmitted by bone and tooth evaluated with the use of microtomography," published in the February 2019 issue (Am J Orthod Dentofacial Orthop 2019;155:182-90).

First, the authors present a modified rapid maxillary expansion appliance for the rapid expansion of the maxilla without taking into account the amount of expansion required and the number of activations before installation in each patient according to their respective bone base. These characteristics could be taken into account in future studies because they can modify the degree of resorption.[1]

Second, the authors do not specify the facial biotype of the patients (dolichofacial, mesofacial, or brachifacial). In a dolichofacial patient the musculature is lax, whereas in a brachifacial patient, musculature is strong. There could be a variation in the side that the dental expansion is performed, because the degree of dental movement in the rapid dental expansion can vary with respect to the type of musculature of each patient treated.[2]

Third, although the concluding comment is encouraging, many of the conclusions seek to generalize the degree of resorption with the use of this modified RME appliance and the small sample size.

The idea of proposing a new modified circuit breaker can be useful to reduce adverse effects during expansion, but to have a correct range of root resorption we must take into account adequate and concrete planning.

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Authors' response

Thank you for your interest in our article.

Ours was a thesis study. We counted the activation of the hyrax screw for each patient. Average activation of the screw was 35. It was not written in the article because these differences do not affect the results. Control and study groups consisted of the same patients because of the split-mouth design. For this reason, all parameters (age, sex, applied forces, activation counts, retention time) are the same in both groups so that the differences in screw activation counts do not affect the comparison.

This split-mouth design study group consisted of 20 patients. Right and left sides of all patients were expanded by means of 2 different methods, and 40 teeth were examined for our study. When we investigated previous studies in the literature, sample sizes were usually smaller than ours in micro-CT studies.[1-3] We treated patients who had the indication for RME treatment and 2 maxillary premolar extractions. You can appreciate that collecting this group was very hard.

Conclusions of the study were written without certainty. We tried to explain our results as a whole in the conclusions. Our native language is not English, however; the article was edited by a professional English editing service (Editage English Editing Services).

"Bone-supported appliances for RME treatment may decrease the amount of potential root resorption, which represents an advantage compared with tooth tissue–borne appliances" was the last sentence of the manuscript and it does not mean certainty.

Thank you for your valuable feedback and suggestions. We are trying to improve ourselves by taking into consideration such valuable experience and guidance.

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Erratum

Correction to: Currell SD, Liaw A, Blackmore Grant PD, Esterman A, Nimmo A. Orthodontic mechanotherapies and their influence on external root resorption: A systematic review. Am J Orthod Dentofacial Orthop 2019;155:313-329.

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CONFLICT OF INTEREST

The review authors report no conflict of interest during the conduct of the study.