Letters to the editor*

Miniscrews and molar block anchorage reinforcement

The article by Ganzer et al on anchorage reinforcement with miniscrews and molar blocks in the December 2018 issue was a good piece of research work with clinical relevance (Ganzer N, Feldmann I, Bondemark L. Anchorage reinforcement with miniscrews and molar blocks in adolescents: a randomized controlled trial. Am J Orthod Dentofacial Orthop 2018;154:758-67.) We congratulate the authors for this research and meticulous reporting. The choice of linear mixed-effects model was appropriate because it could account for the repeated measures and dependent nature of the outcomes studied. The intention-to-treat analysis contributed to the validity of the results. However, if the authors could address the following concerns, it would further widen the scope of the article.

1. What made the researchers think that it was appropriate to use 2 different retraction methods in the intervention and control arms? NiTi coil springs offer a more constant force delivery between activation schedules, whereas elastomeric tie-backs have been shown to result in a rapid force decay within the first few days of activation.[1-3] The rate of retraction has also been shown to vary with these methods.[4]
2. Because of the difference in the mode of retraction used in the intervention and control arms, it is reasonable to presume that this could influence the internal validity of the study, because the study groups cannot be considered to be homogeneous.
3. Because the researchers decided to proceed with 2 different methods of retraction, would it not have been better if they had stratified the groups based on these methods?
4. The inclusion criteria of the cases (skeletal and dental nature of malocclusion) are not clear. The differences in skeletal pattern and muscle force can be potential confounders if there is no homogeneity in case selection. The time taken to complete leveling and alignment (10.5 months for the miniscrew group and 9.3 months for the molar block group) gives us a clue that the cases had some amount of dental irregularity or deep bite at the beginning.

The authors' conclusion of superiority of miniscrews over molar blocks is obvious and acceptable but we cannot ignore the value of molar block as a noninvasive and traditional method of anchorage reinforcement. The molar rotation[5-7] and extrusion[8] reported in this study can be controlled with the use of a Goshgarian bar or any of its modifications[5-8] if one decides to follow this traditional method of anchorage reinforcement.

Clarification of these points will broaden the scope of this article, with this study being an RCT that can potentially find a place in future meta-analyses to generate much stronger evidence.

Elbe Peter
Baiju RM
Vivek Narayan
Suja Ani
Kottayam, Kerala, India

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REFERENCES

1. Halimi A, Benyahia H, Doukkali A, Azeroual M-F, Zaoui F. A systematic review of force decay in orthodontic elastomeric power chains. Int Orthod 2012;10:223-40.
2. Angolkar PV, Arnold JV, Nanda RS, Duncanson MG. Force degradation of closed coil springs: an in vitro evaluation. Am J Orthod Dentofacial Orthop 1992;102:127-33.
3. Baty DL, Storie DJ, von Fraunhofer JA. Synthetic elastomeric chains: a literature review. Am J Orthod Dentofacial Orthop 1994;105:536-42.
4. Mohammed H, Rizk MZ, Wafaie K, Almuzian M. Effectiveness of nickel-titanium springs vs elastomeric chains in orthodontic space closure: a systematic review and meta-analysis. Orthod Craniofac Res 2018;21:12-9.
5. Kojima Y, Fukui H. Effects of transpalatal arch on molar movement produced by mesial force: a finite element simulation. Am J Orthod Dentofacial Orthop 2008;134:335.e1-7.
6. Gündüz E, Zachrisson BU, Hönigl KD, Crismani AG, Bantleon HP. An improved transpalatal bar design. Part I. Comparison of moments and forces delivered by two bar designs for symmetrical molar derotation. Angle Orthod 2003;73:5.
7. Gündüz E, Crismani AG, Bantleon HP, Hönigl KD, Zachrisson BU. An improved transpalatal bar design. Part II. Clinical upper molar derotation—case report. Angle Orthod 2003;73:5.
8. DeBerardinis M, Stretesky T, Sinha P, Nanda RS. Evaluation of the vertical holding appliance in treatment of high-angle patients. Am J Orthod Dentofacial Orthop 2000;117:700-5.