Letters From Our Readers

To: Editor, *The Angle Orthodontist*

Re: Response to: Comparison of anterior retraction and anchorage control between en masse retraction and two-step retraction: A randomized prospective clinical trial. Patricia Pigato Schneider, Luiz Gonzaga Gandini Junior, André da Costa Monini, Ary dos Santos Pinto, Ki Beom Kim. *The Angle Orthodontist.* 2019 Mar;89(2):190-199.

We were glad the authors enjoyed the article and we really appreciate their questions regarding our work that enriched the discussion around this subject.

We believe selecting the size of archwire is up to personal preference. Our main goal was not to evaluate the type of movement resulting from the two retraction techniques, but to produce two consistent methods to be able to compare the amount of retraction and loss of anchorage between two groups. Thus, we selected the 0.017″ x 0.025″ SS wires for both the ER and TSR groups to make them comparable in the methodology of our study. We decided to use a smaller wire to reduce the possible friction during retraction with sliding mechanics. In our opinion, using 0.019″ X 0.025″ SS wire might have increased the friction which may have induced greater posterior anchorage loss. For vertical position control of the incisors, the use of 0.017″ x 0.025″ SS wire in our study resulted in extrusive movement less than 2 mm. Since the line of action of the retraction force produced by the NiTi springs was not applied at the center of resistance of the incisors, an uprighting moment may have resulted in extrusion of the anterior teeth. Therefore, we don't believe the size of the wire would have created much of a clinical difference. Creekmore showed that when 0.019″ × 0.025″ SS wire was inserted into a 0.022-in slot, it resulted in an average of 10.5° torque expression, consistent with our results.[1]

The objective of aligning all teeth with the same 0.020-in SS wire before extraction was to standardize tooth positions before the ER and TSR retraction started. In this way, there was no difference in the alignment between the two groups at the beginning of retraction. We agree that aligning all teeth before extraction produces flaring of the incisors; however this step was the key to make the two groups comparable from the starting point of retraction. This was the objective of our research. So, we agree with the possible flaring of those incisors even with minor crowding of 4 mm. Since differences in the tooth alignment could have influenced the speed and amount of movement during sliding retraction, we didn't consider the use of lacebacks during canine retraction. This would have made the groups incomparable because the starting position before movement would have been different. However, we agree that individual canine retraction (with lacebacks or loops) should be considered to create space for the retraction of incisors and to prevent further protrusion, especially with anterior crowding or midline discrepancy in actual clinical practice.

The reason for not having detailed the sample size is that we found only one study before ours that was performed without the use of anchoring devices.[2] Its sample consisted of 30 patients, and was therefore smaller than ours (48 patients). However, we can provide information to you that shows that our sample was sufficient to support our results: We can use the variable "crown / horizontal of the molar" at TSR to determine the sampling efficiency. For this, the methodology of sample calculation size proposed by Miot et al.[3] was used. At the end of the study observation period, a mean of 3.39 mm and a standard deviation of 2.07 mm were obtained with a mean difference of −0.4 mm. Taking the $Z\alpha / 2$ value equal to 1.96 as standard, at 5% confidence probability, it was determined that 20 sample units would be enough for the studies performed, for a sampling error of 0.83 mm for the mentioned variable. Thus, it was found that the sample size of 48 subjects, distributed between the ER and TSR groups with 24 subjects, was more than enough to perform our study.

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REFERENCES

1. Creekmore TD. Dr. Thomas D. Creekmore on torque. *J Clin Orthod*. 1979;13:305–10.
2. Heo W, Nahm D-S, Baek S-H. En masse retraction and two step retraction of maxillary anterior teeth in adult Class I women. A comparison of anchorage loss. Angle Orthod. 2007;77:973–978.
3. Milot HA. Sample size in clinical and experimental studies. *J. Vasc. Bras*. 2001:10(4):275–278.