

عنوان مقاله:

A Clinical Comparison of Sliding rate of Canine Teeth Using Nickel-Titanium close coil Springs Versus Super Slick Elastomeric Chains

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خلاصه مقاله:

Aim: Space closure after extraction of teeth is one of the most challenging steps in orthodontic treatments. Nickel-titanium close coil springs are used as a superior appliance in the said field for space closure, but high expenses associated with them have pushed dentists toward using elastomeric chains. This study was planned to compare nickel-titanium to one of the newest reinforced types of elastomeric chains – Super Slick. **Methods:** This research was planned as a prospective analytical study with a split-mouth design, and was performed on 11 randomly selected participants referring to the specialty clinic of Guilan University of Medical Sciences. After leveling and alignment, patients were referred for simultaneous extraction of first premolars. For closing the space after extraction, randomly, the nickel-titanium close coil spring was assigned to one quadrant and the Super Slick elastomeric chain to the other. Patients were followed-up every month for three months, and in every session using a digital caliper the rate of space closure resulting from extraction of first premolars was measured from the distogingival wing of the canine bracket to the mesiogingival wing of the second premolar bracket. The monthly rate of space closure was calculated in millimeters, and the results regarding Super Slick Chains and nickel-titanium springs were compared and statistically analyzed using the t-test and nonparametric tests. **Results:** Based on the results of the t-test, the rate of the premolars extraction space closure in the first month, second month, and third month showed no significant differences between Super Slick elastomeric chains (1.82 ± 0.27) and nickel-titanium close coil springs (1.90 ± 0.4). Also, based on the said test, the general speed of space closure during the three months was not meaningfully different ($p=0.489$). **Conclusion:** Considering that there was not a significant difference in the rate of space closure between elastomeric chains and nickel-titanium close coil springs during the three months of the study, it can be concluded that with time, the strength of the reinforced elastic chains for retraction of canine teeth is similar to that of the nickel-titanium springs. A look at the results shows that the claims of the manufacturers of reinforced elastic chains regarding force conservation are not very far from reality.

کلمات کلیدی:

Elastomeric Chains, force degradation, Nickel-titanium springs

