

Turkish Journal of Medical Sciences



Turkish Journal

of

Medical Sciences

Asymmetric Maxillary First Molar Distalization with the Transpalatal Arch

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Abstract: The purpose of this study was to determine the dentoalveolar and skeletal effects of a Goshgarian transpalatal arch (TPA) in unilateral maxillary first molar distalization. The treatment group consisted of 15 patients (6 females and 9 males) between 10.8 and 12.1 years of age. The maxillary first molars, which were in a dental Class I relationship (anchorage molars), were the anchorage units, while the molars in Class II relationship (distalized molars) were distalized using a TPA with 150 g. of force. Lateral head films, study models and clinical photographs of all the patients were taken before and after distalization. The differences between the measurements were evaluated with a paired samples t test. The mean unilateral molar distalization was 2.067 mm, with 3.733° distal tipping and 4.800° distopalatal rotation. Anchorage molars were mesialized 0.367 mm with 0.400° mesial tipping and showed a mesiobuccal rotation of 9.400°. The distalized molars and anchorage molars were extruded 0.267 mm and 0.533 mm, respectively. A 0.467 mm buccal movement was observed in the distalized molars; however, the expansive movement of the anchorage molars was not statistically significant. The results showed that the TPA was effective in the asymmetric distalization of the maxillary first molars.

Key Words: Unilateral, asymmetric, molar distalization, transpalatal arch

Turk J Med Sci 2004; **34**(1): 59-66.

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