

Stepwise advancement versus maximum jumping with headgear activator

Type: Article

Abstract:

The aim of this study was to compare the effects of stepwise mandibular advancement versus maximum jumping and extended treatment versus early retention. The material was obtained prospectively and consisted of lateral cephalograms taken at the start (T0), after initial (T1), and at the end (T2) of treatment, from two groups of consecutively treated skeletal Class II patients who had undergone therapy with headgear activators. The first headgear activator group, HGA-S (n = 24; mean age 11.9 +/- 1.2 years), was treated for 13 months and had 4-mm mandibular advancement every 3 months. The second headgear activator group, HGA-M (n = 31; mean age 11.2 +/- 1.5 years), had maximum jumping, 6-8 mm interincisal opening, for a total of 15.4 months, and with reduced wear for the last 6.9 months. The dropout over 12 months was 41 and 46 per cent, respectively. Pre-treatment growth changes were obtained as a reference. An independent t-test was used to determine differences in baseline dentofacial morphology between the groups, a paired t-test for intra-group comparisons, and an independent t-test to evaluate differences between the groups. The results, in both groups, showed enhanced mandibular prognathism during the initial phase (T0-T1), followed by normal growth (T1-T2), and lower face height enhancement throughout treatment (T0-T2). For both groups, the mandibular plane and occlusal angle increased, possibly enhanced by 'extrusion' of the lower molars. For both groups, maxillary forward growth was restrained only during the initial phase, but the effect remained significant at T2 for the HGA-S group. In the HGA-M group, the lower incisors were protruded, while in the HGA-S group, they were unaffected. The findings indicate that both modes of mandibular jumping resulted in skeletal and dental effects. The length of active treatment seemed to be decisive in maintaining the treatment effects; stepwise advancement had less dental effects.

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