The effects of activator treatment on the craniofacial structures of Class II division 1 patients

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SUMMARY The aim of the present study was to clarify the skeletal treatment effects induced by activator treatment. Fifty actively growing patients with Class II division 1 malocclusions were treated with an activator appliance. A control group consisting of longitudinal growth data from 20 patients (untreated Class II division 1 malocclusions) was used to eliminate possible differences in growth pattern. Lateral cephalograms of each patient were taken at the start and end of treatment. Final cephalograms were taken after a mean of 16.4 (±2.0) months activator treatment, compared with a mean of 14.2 (±2.4) months for the control group. Each cephalogram was traced and digitized by the same individual. The mean and standard deviations for linear and angular cephalametric measurements were analysed statistically and intra- and inter-group changes were evaluated by paired- and independent-sample t-tests.

At the end of the study period, the overjet was decreased in all patients. Ramus height, corpus length, anterior and posterior face height all increased significantly (P< 0.05). In the treatment group, ANB angle decreased and the bite was opened. The activator appliance caused maxillary incisor lingual tipping and mandibular incisor labial tipping. The overjet was decreased as a result of the increased forward growth of the mandible and dentoalveolar changes. The results demonstrated that the activator appliance has a characteristic skeletal and dental effect on the developing craniofacial complex.