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ADVANSYNC™ VERSUS INTERMAXILLARY ELASTICS IN THE CORRECTION OF CLASS II MALOCCLUSION: A CEPHALOMETRIC

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Objectives: The purpose of this study was to investigate the skeletal, dentoalveolar and soft tissue effects of the AdvanSync™ appliance in the correction of Class II malocclusions in growing patients. AdvanSync™ was compared to a typical method of Class II correction (intermaxillary elastics) and an untreated Class II control group.

Materials and Methods: A retrospective study was conducted using lateral cephalograms of patients taken pre-treatment (T1) and post-comprehensive treatment (T2). 41 patients consecutively treated with AdvanSync™ (24 males, 17 females; mean age 11.6 years at T1, 14.3 years at T2) were compared to 41 similar patients treated with intermaxillary Class II elastics (24 males, 17 females; mean age 11.5 years at T1, 14.4 years at T2). All patients had significant growth potential during treatment as assessed by the cervical vertebral maturation method. Both treated groups were also compared to a matched, untreated control sample generated from the University of Michigan and Bolton-Brush growth studies. Data was analyzed using one-way analysis of variance and Tukey-Kramer tests.

Results: Initially (T1), the three groups were well matched in most cephalometric measurements. The effects of AdvanSync™ (T2-T1) included maxillary growth restriction, protrusion, proclination and intrusion of mandibular incisors and mesialization of mandibular molars ($p<0.01$). The effects of Class II elastics were similar to AdvanSync™, with the exceptions of less maxillary growth restriction and greater retrusion and retroclination of maxillary incisors ($p<0.01$). Significant mandibular growth stimulation did not occur with either modality.

Conclusion: AdvanSync™ and intermaxillary elastics are effective in normalizing Class II malocclusions. AdvanSync™ produces its effects through maxillary skeletal growth restriction and mandibular dentoalveolar changes. Class II elastics work primarily through dentoalveolar changes in both the maxilla and mandible.

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