AAO Foundation Award Final Report

Principal Investigator	Dr. Kang Ting
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Award Type	Biomedical Research
Project Title	Clinical and Laboratory Studies of Bone Induction and Regulation for Craniofacial Anomalies
Project Year	2001
Institution	University of California at Los Angeles
Summary/Abstract	The purpose of this pilot study was to evaluate cephalometrically the efficacy of an intra-oral distraction osteogenesis device in treating patients with unilateral mandibular hypoplasia. Six patients with hemifacial microsomia underwent unilateral mandibular distraction. PA and 45° lateral oblique cephalograms quantified changes in maxillary width and height, occlusal height, ramus height, mandibular length, and chin position. Measurements were taken pre-operatively and post-operatively at seven time-points (T1-T7) over two-years. Calculations for statistical significance were done to T6 for all patients and through T7 for four patients. The means and variances were calculated for the six cephalometric variables for each time point. The mean differences between treatment and control were calculated as well as ANOVA. Mean differences between specific time-periods were measured by pairwise comparison with significance determined at the 0.05 level of confidence. Statistical analysis was employed for descriptive purposes only. The cephalometric data suggests that the intra-oral distractor is as capable of lengthening hypoplastic mandibles as the initial extra-oral appliances. The bone lengthening appears stable with the distracted side of the mandible maintaining a growth rate similar to the normal side. Immediately following distraction transient improvements were noted in maxillary height, ramal height, and maxillary width. All patients demonstrated an immediate improvement in chin position toward the skeletal midline, however, after T4 menton appeared to be moving away from the midline over time. (Published in AJODO)