Non-Osteotomy Treatment of Class III Skeletal Malocclusion Using Bollard Plates

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Abstract

Introduction: In this study, we analyze the effect of maxillary advancement in CL III skeletal patients using a novel approach. Basically, a non-osteotomy two jaw surgery that produces combined maxillary advancement and mandibular retraction via growth orthopedics using Bollard plates is applied[1]. The purpose of this study was to evaluate the change in the WITS appraisal and ANB values for each patient before and after treatment.

Methods: A total of 14 patients were enrolled in the study as early as possible, cervical vertebral maturation stage CVM2. Bilateral maxillary FDA approved miniplates (Bollard plates) were surgically inserted in the infrazygomatic crest of the maxilla and bilateral mandibular plates in the anterior mandible between the canine and the lateral incisor area. The patients were treated by intermaxillary elastics. Cephalometric analysis was done before, during and at the end of the treatment. Intraoral and extraoral photographs were taken as well.

Results: The WITS appraisal value showed a remarkable increase from -9 to -2.6 in some patients. Most of the patients showed an increase in the ANB values by 2 or 3 degrees. There was a 100% success in changing the mandible and the maxilla relation as seen in the profile photographs (Figure 1) and cephalometric tracings (Figure 2) compared before and after treatment for each patient. There were minimum complications with 4 patients including loosening of the plates which were easily treated. On the other hand, none of the patients suffered infection, dental complications or nerve injury.

Figure 1 : Profile photographs of a patient before and after 13 months of treatment

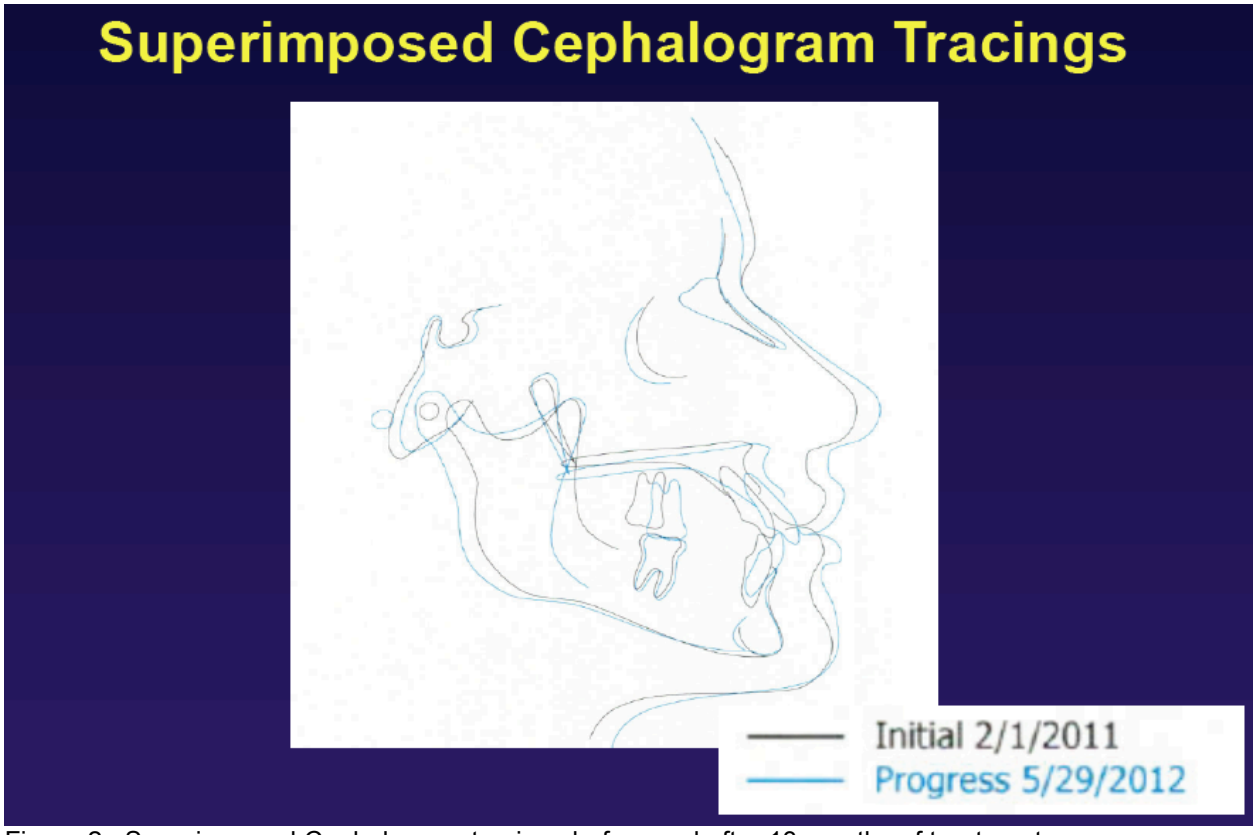

Figure 2 : Superimposed Cephalogram tracings before and after 13 months of treatment

Conclusion: Because of the minimum complications and the maximum benefits related to the Bollard plates, this novel treatment approach shows promising future results for the treatment of CL III skeletal patients.

References:

1. De Clerck H, Cevidanes L, Baccetti T. Dentofacial effects of bone-anchored maxillary protraction: a controlled study of consecutively treated Class III patients. *American journal of orthodontics and dentofacial orthopedics : official publication of the American Association of Orthodontists, its constituent societies, and the American Board of Orthodontics.* Nov 2010;138(5):577-581.

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