Cephalometric Evaluation of Maxillary Retrognathism Treated with Skeletal Anchorage and Class III Elastics

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Objective: In this study, our aim was to investigate the effectiveness of corticotomy assisted maxillary protraction with skeletal anchorage and Class III elastics.

Method: Research was performed on 19 (9 girls, 10 boys) patients with Class III malocclusion characterized by maxillary retrognatism. Their mean age was 13.12±1.28 years. Five months follow-up of the patients were made by cephalometric radiographs and these records were used as a control group. After the repetition of records preoperatively, acrylic cap splints with hooks on the level of molars were bonded to upper dental arch, Le Fort I osteotomy was performed and miniplates were placed on the anterior wall of the symphysis. Following the operation, Class III elastics were used. Changes in the dentofacial structures were measured on pretreatment and posttreatment cephalometric radiographs and cone beam computed tomography images.

Results: According to the measurements, maxilla moved anteriorly in a short time, occlusal plane was rotated in counterclockwise direction; whereas, mandible showed limited clockwise rotation and Class I profile was achieved. When the cases were not treated, forward growth of the maxilla which occured by the normal growth and development was not enough to correct the Class III malocclusion, resulting in a more severe Class III relationship.

Conclusion: This protocol is fast and effective in maxillary protraction especially in cases which have deep overbite and low angle growth pattern.

Key words: Class III, maxillary retrognatism, maxillary protraction, skeletal anchorage