

## **Comparison of Long-Term Outcomes Between Surgery-First and Traditional Orthognathic Approach for Dentofacial Deformities**

**Jong-Woo Choi, MD, PhD, MMM**, Plastic Surgery, Seoul Asan Medical Center, University of Ulsan, College of Medicine, Seoul, South Korea

**Background:** Orthognathic surgery with pre and postsurgical orthodontic treatment is the most widely accepted method for the correction of skeletal or dentoalveolar malocclusion. However, recent advancements have shown remarkable stability and control of the occlusion following orthognathic surgery. Thus, we have adopted a surgery-first orthognathic approach without presurgical orthodontic treatment based on the novel presurgical simulation process using a dental model. We hypothesized that this treatment modality would be ideal and feasible.

**Materials and Methods:** This study investigated intervention outcome in 102 standard orthodontic treatment-first approaches and 152 surgery-first approaches. The patients included in this study were facial asymmetry and skeletal class III patients who underwent orthognathic surgery between December, 2007 and July, 2014. The follow-up period ranged from 12–68 months (average, 45.5 months). Changes in cephalometric landmarks were compared between the standard and surgery-first groups in three periods. In the surgery-first approach, the novel preoperative simulation process on the dental model was performed. Based on this model surgery, we could create the intermediate and final wafers for orthognathic surgery without presurgical orthodontics.

**Results:** The statistical analysis of the data showed us that changes in skeletal cephalometric landmarks were similar in the surgery-first and traditional approach groups, according to each time period. However, the cephalometric landmarks relating to the dental component showed changes between treatment groups at different time points but similar final values. This suggests that the benefits of postsurgical orthodontic treatment following the surgery-first approach could catch up to those of the traditional postsurgical orthodontic treatment with a presurgical orthodontic approach.

**Conclusions:** The surgery-first orthognathic approach without presurgical orthodontic treatment was found to be predictable and applicable to treat asymmetry and class III dentofacial deformities. These findings suggest a possible paradigm shift in the traditional orthognathic approach.

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2. Choi JW, Lee JY, Oh TS, Kwon SM, Yang SJ, Koh KS. Frontal soft tissue analysis using a 3 dimensional camera following two-jaw rotational orthognathic surgery in skeletal class III patients. *J Craniomaxillofac Surg.* 2014 Apr;42(3):220-6