

“Surgery First” in Bimaxillary Orthognathic Surgery

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The general formula in traditional orthognathic treatment has consisted of a variable length of preoperative orthodontic preparation, surgery itself, and a relatively constant period of postoperative orthodontics.¹ Patients have usually expressed high levels of satisfaction with the esthetic and functional outcomes, especially if they were accurately informed about all aspects of their treatment.² However, an important percentage of patients will rate the orthodontics as the worst part of their treatment owing to the appliances' visibility, the pain caused, and the duration.³ The usual estimated duration of orthodontic treatment has often tended to be too optimistic.⁴

Recently, the performance of surgery without orthodontic preparation (ie, “surgery first”), followed by regular postoperative dental alignment, was proposed by Nagasaka et al.⁵ We used this approach to correct skeletal Class III malocclusion with the aid of skeletal anchorage system orthodontics. The total treatment time was noticeably reduced. In addition, preoperative profile worsening owing to incisor decompensation was avoided and the immediate profile improve-

ment after the surgery was greatly appreciated by the patient.⁵

The purpose of the present study was to report our experience with the “surgery first” approach in 2 cases of bimaxillary surgery.

Patients and Methods

Two patients were treated with bimaxillary surgery using the “surgery first” approach at the Institute of Maxillofacial Surgery and Implantology of the Teknon Medical Center (Barcelona, Spain) during 2010. The Helsinki Declaration guidelines were followed in all treatment phases. Under institutional review board approval, a prospective evaluation was performed.

The inclusion criteria for the “surgery first” sequence were skeletal malocclusions requiring combined orthodontic-surgical treatment with no need for extractions. The patients were informed about the treatment protocol and provided treatment-specific written informed consent. In 1 case, the orthodontic appliances were installed after the surgery was performed; in the other, the protocol was modified to place them right before the surgical stage.

Preoperative cone-beam computed tomography was performed in both cases. The IS i-CAT, version 17-19 (Imaging Sciences International, Hatfield, PA), was used. A 7-second scan was taken with the patient sitting upright, with the clinical Frankfort horizontal plane parallel to the floor and the mandible in centric relation with the help of a wax bite. With the aid of specific software (SimPlant OMS, version 13.0, Materialize, Leuven, Belgium), a virtual orthodontic and surgical setup was done to anticipate the future dental and skeletal movements. First, an orthodontic setup was performed to anticipate the final position of the upper and lower incisors. Using the anticipated orthodontic setup and following the clinical guidelines,⁶ the surgical planning was completed.

Both procedures were performed with the patient under general anesthesia by the same surgeon. Patient satisfaction was evaluated using a visual analog scale

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