



Timing of orthognathic surgery: paradigm shift by surgery-first approach?

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Since the first clinical report by Nagasaka et al.¹ in 2009, the surgery-first approach has progressed and has become popular as a new treatment modality for the management of dentofacial deformities.

In spite of the existence of some different opinions, the surgery-first approach seems to reduce the total treatment time and results in immediate improvement of the facial appearance. These may coincide with the patient's demand. Recent innovative developments and the relevance of temporary anchorage devices (TADs) or skeletal anchorage system (SAS) in the orthodontic field have made postsurgical orthodontic treatment more predictable and scalable. The proposed benefits of the surgery-first approach and development of SAS have led to a growing acceptance in surgery and orthodontics for these approaches.

In general, patients with class III malocclusion, which is a common dentofacial deformity in the Korean society, seem to be good candidates for the surgery-first procedure. Presurgical orthodontic treatment including incisor decompensation may exacerbate the patient's prognathic profile. Most of the patients are in their late teens to early 20s and are emotionally sensitive with respect to the perception of facial disharmony. If orthognathic surgery is performed before orthodontic preparation, the esthetic problem can be corrected early in the period. Thus, we can help patients in deciding to receive the orthognathic surgery more than previously.

However, there are still some disadvantages of the surgery-first approach, as reported by Peiró-Guijarro et al.²

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1. Premium on patient selection. Since the baseline occlusion cannot guide the treatment goals, clinical expertise, accurate prediction of postoperative tooth movements, and precise assessment of the skeletal discrepancy are mandatory.

2. The extent of surgical movements may be greater because surgical correction needs to account for dental compensation.

3. Postsurgical instability during bone healing may cause skeletal instability, and its influence on relapse has not yet been fully investigated. Some clinicians recommend minimal orthodontic treatment for patients with severe occlusal prematurities or severe arch width discrepancies to achieve at least three stable occlusal stops.

4. Orthodontic appointments must be scheduled more often than for a conventional approach.

5. Constant communication between the surgeon and the orthodontist is required.

Pelo et al.³ proposed the creation of a new model that regulates the relationship between the surgeon and orthodontist, as follows: "In the surgery-first approach, the presurgical orthodontic treatment phase has been eliminated, and it is the surgeon who must undertake the initial therapeutic process and assume the majority of the responsibility with regard to the final result. Thus, the surgeon's work is no longer conditioned by the actions of the orthodontist, as it would be in a more traditional approach."

The surgery-first procedure is not versatile, but it is an alternative. Clinicians, especially surgeons, should be responsible and must be cautious in selecting the surgery-first approach in the treatment of young patients with dentofacial deformities.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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