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CASE REPORT

Surgical-Orthodontic Treatment of a Class III Dentofacial Deformity

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Adult patients with dento-skeletal deformities usually need surgical-orthodontic treatment. These complex cases require careful treatment planning, an integrated approach, and patient cooperation.[1] A poor facial appearance is often the patient's chief complaint,[2] but it may be accompanied by functional problems, TMJ disorders,[2] or psychosocial handicaps.[3]

Although Class II dentofacial deformities are more common, the need for treatment is generally greater in Class III patients.[4] This article shows such a case.

Diagnosis and Treatment

A 21-year-old female presented with the chief complaint of an unesthetic facial and dental appearance (Fig. 1). She reported having suffered a facial trauma as a child, and there was no family history of Class III malocclusion. After thorough clinical examination and analysis, surgical-orthodontic treatment was recommended.

To allow adequate surgical movement, both maxillary first premolars were extracted, and the maxillary incisors were retracted. No extractions were performed in the mandibular arch because there was minimal crowding, no retraction was necessary, and a Class II molar relationship at the end of treatment was considered acceptable. The mandibular incisors were proclined and the archforms coordinated (Fig. 2).

Surgery included a Le Fort I osteotomy with 6mm of advancement, a bilateral sagittal split osteotomy with 4mm of setback, and genioplasty. A V-Y suture was performed in the upper lip to increase its eversion and to provide a larger vermillion area. Rigid internal fixation with

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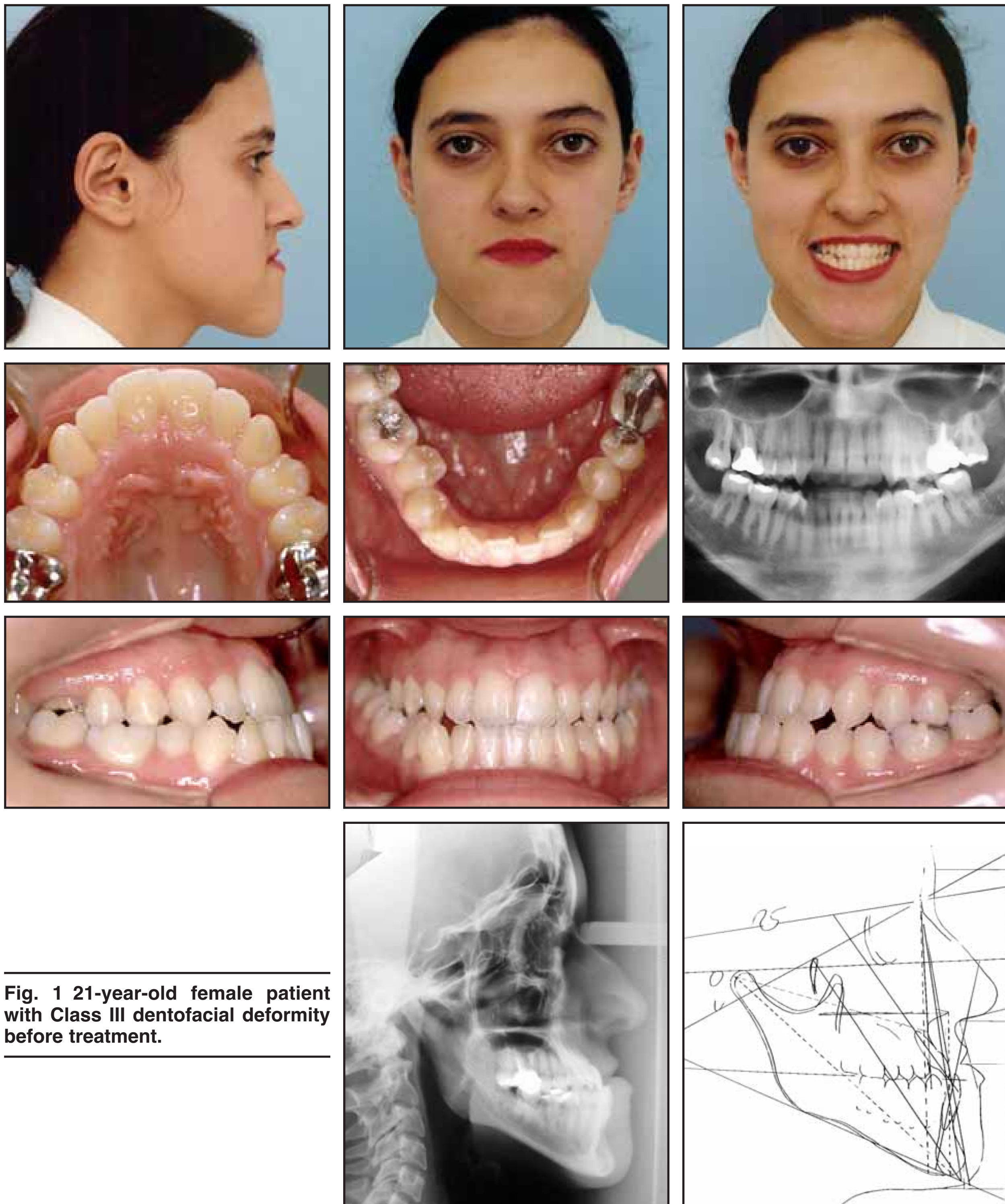

Fig. 1 21-year-old female patient with Class III dentofacial deformity before treatment.

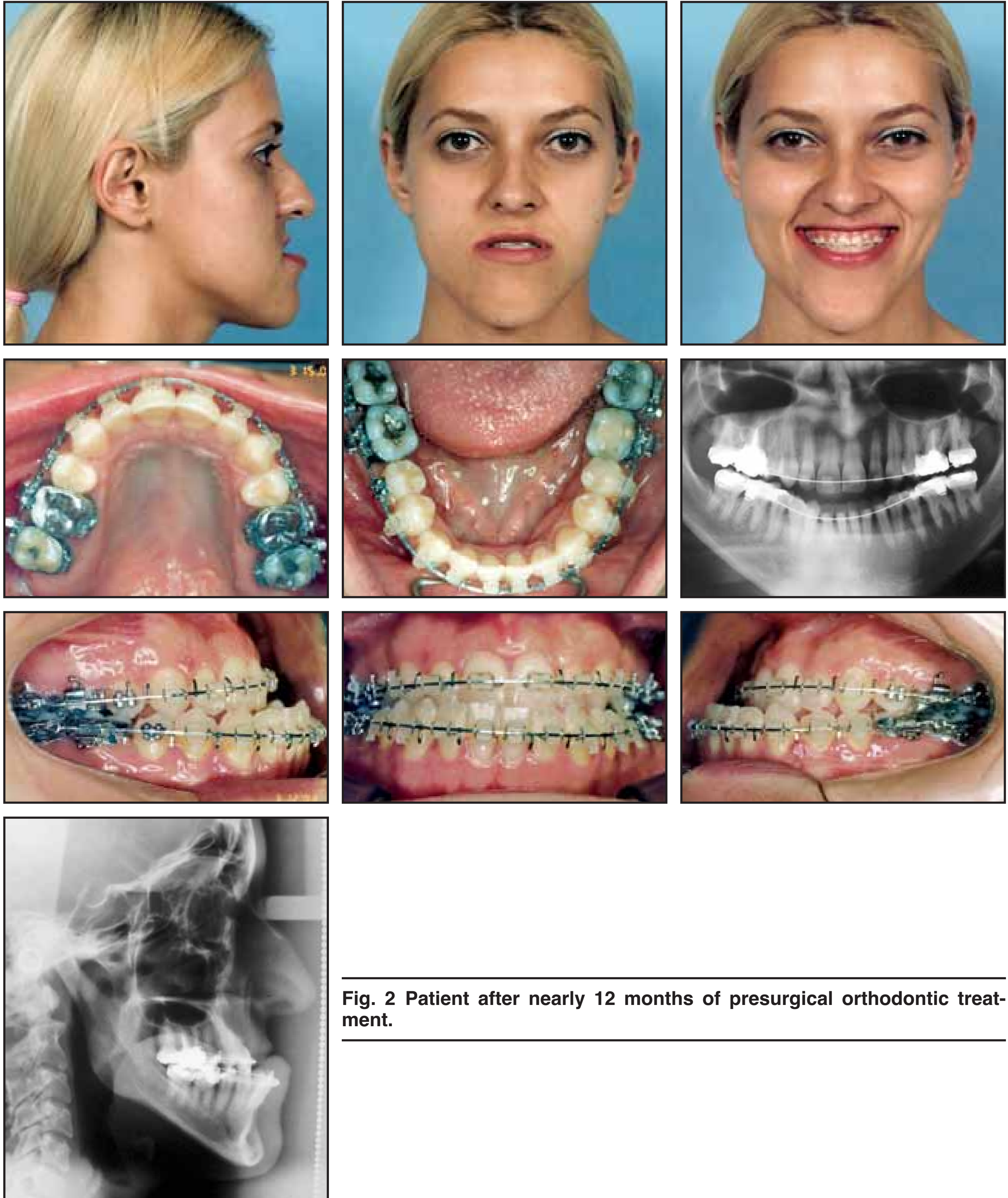

Fig. 2 Patient after nearly 12 months of presurgical orthodontic treatment.

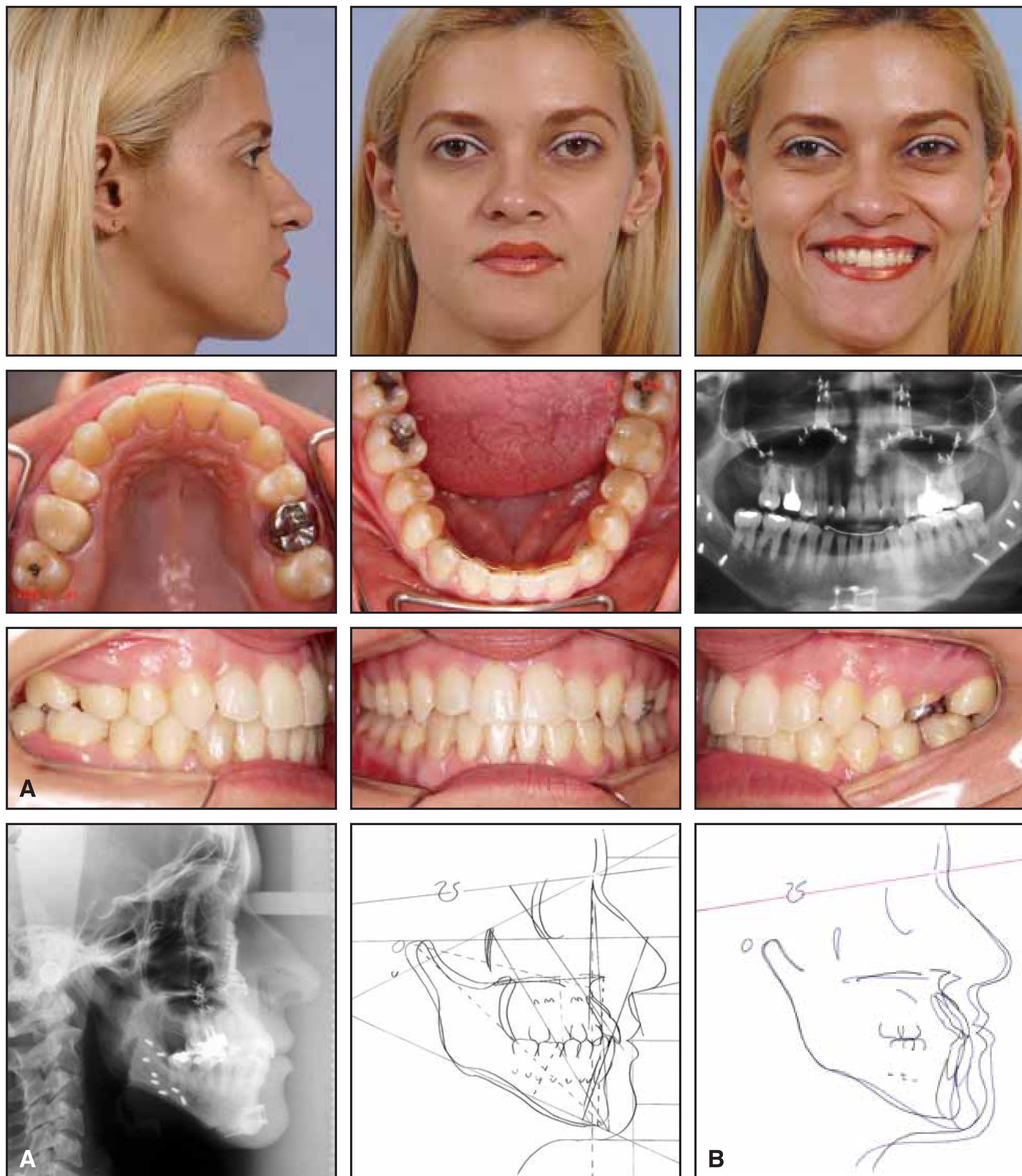

Fig. 3 A. Patient after 12 months of postsurgical orthodontic treatment. B. Superimposition of pre- and post-treatment cephalometric tracings.

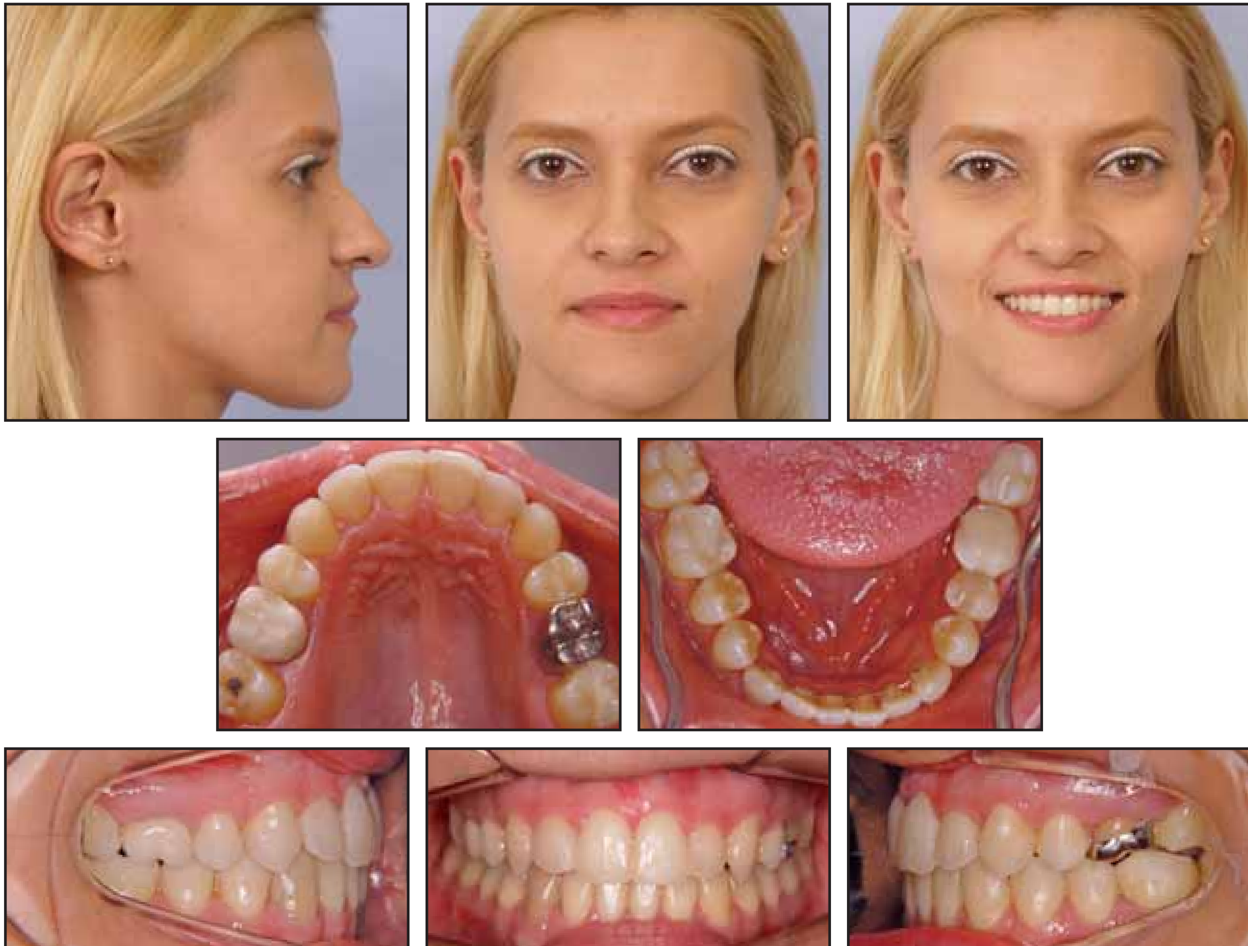

Fig. 4 Follow-up records one year after end of orthodontic treatment.

screws and plates was used to stabilize the osteotomy sites, and intermaxillary elastics were placed immediately after surgery to maintain the result. The patient was followed closely after the procedure and was taught to perform opening and lateral movement exercises.

Orthodontic treatment was resumed six weeks after surgery. One year later, fixed appliances were removed (Fig. 3A), and a retention program was initiated. Superimposition of pre- and post-treatment cephalometric tracings confirmed the success of treatment (Fig. 3B). Another year later, the results had remained stable (Fig. 4).

Conclusion

Surgical-orthodontic treatment is sometimes the only option for achieving an acceptable occlusion and a good esthetic result in a patient with a Class III dentofacial deformity. It should be performed by an experienced multidisciplinary team to ensure a satisfactory outcome.

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