



Surgical Management of Skeletal Class II Facial Asymmetry with Decreased Lower Facial Height: A Case Report

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Case Study

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ABSTRACT

In this article, we report the successful treatment of a patient, aged 30years, who had a skeletal class II facial asymmetry with decreased lower facial height and skeletal deep bite. A combination of Lefort-1 osteotomy for differential maxillary impaction and BSSO, subapical osteotomies for mandibular advancement was done. After 12 months of pre-surgical orthodontic treatment, Lefort-1 osteotomy for differential maxillary impaction and BSSO, sub-apical osteotomy was done for maxilla and mandible respectively. The Maxilla was impacted by 5mm and Mandibular advancement was done by 10mm. The total active treatment was 18 months. Both occlusion and facial appearance were significantly improved by Surgical-Orthodontic treatment. Occlusion was stable after a year of retention. There were no functional problems during or after treatment. Our results suggest that Lefort I Osteotomy for differential maxillary impaction combined with BSSO, sub-apical osteotomy of the mandible in a Patient with skeletal class II facial asymmetry might be useful to improve occlusion and facial esthetics.

Keywords: Facial Asymmetry, Skeletal Class11, Lefort1 Osteotomy.

Introduction

Facial asymmetry is highly visible, can degrade the quality of life, and is often a chief complaint of orthodontic patients.^{1,3} patients with severe facial asymmetry are generally treated with a combination of orthodontic and orthognathic surgical therapies, not only to improve their occlusion but also to improve their facial esthetics.^{4,6} For Maxillary surgery Lefort I Osteotomy is preferred which allows the Surgeon to move the Maxilla in all three planes of space.^{12,17} This case report demonstrates the usefulness of Lefort I Osteotomy in a patient with severe facial asymmetry with occlusal cant. For mandible BSSO and subapical osteotomy was performed to correct retrognathic mandible, skeletal deep bite, and retroclined incisors.



Diagnosis and Etiology

A 30 year Old female patient by the name **yasmin taz** reported to the department of orthodontics college of dental sciences, Davangere with a chief complaint of forwardly placed upper anteriors and wants to improve her facial profile. No significant prenatal and postnatal history was elicited. The patient was moderately built and well-nourished for her age and sex. Extraoral examination reveals mesocephalic, mesofacial, convex profile, anterior divergence, occlusal cant, incompetent lips due to proclined upper anteriors, and gummy smile. Intraoral examination reveals congenitally Missing teeth w,r,t 32,44,45,46,47,48,14,24, retroclined, Crowding w.r.t lower anteriors, proclined upper anteriors, skeletal deep bite, supra erupted right upper posteriors due to congenitally missing right lower posterior teeth, presence of tongue-tie, malformed tongue.

Cephalometric Inference

1. Skeletal class II relationship (ANB, 6°)
2. Skeletal facial asymmetry (occlusal cant), Skeletal deep bite
3. Decreased lower facial height. (ANS-Gn=62mm)
4. Decreased maxillary length (Pns-Ans=51mm)
5. Decreased mandibular base length (Ar-Go=44mm)
6. Proclined upper and retroclined lower anteriors (U1-NA= 47° ,13mm)
7. L1-NB= 0° , -3mm U1-SN = 128° IMPA= 73°)

A 30 year old female patient name **yasmin taz** is diagnosed as a case of skeletal class II, decreased lower facial height, skeletal deep bite, cant in a maxillary occlusal plane, facial asymmetry, absence Of alveolar bone w,r,t right lower posterior quadrant, increased overjet, supra erupted Lower anteriors, right upper posteriors, mild crowding w,r,t upper and lower arch Missing teeth w,r,t 32,44,45,46,47,48,14,24, incompetent lips, anterior and posterior Tongue tie, convex profile.

The Treatment Objectives

- Correction of facial asymmetry
- Correction of skeletal class II
- To increase vertical dimension
- Correction of mild crowding
- Correction of anterior and posterior tongue tie
- Correction of incompetent lips, convex profile
- Replacement of missing teeth

We planned for a surgical line of treatment. Alignment of maxillary and mandibular teeth using MBT 0.22 SLOT PEA APPLIANCE. unilateral posterior acrylic bite blocks were used to facilitate lower anterior bonding followed by asymmetric Maxillary impaction of 5mm using Lefort I Osteotomy and Mandibular advancement of 10mm. (BSSO and subapical osteotomy)

Treatment Alternatives

Several procedures were explored to achieve ideal overjet and overbite. Although extraction treatment without Orthognathic surgery was considered an effective treatment method to improve the malocclusion without prolonged hospitalization and higher medical costs with maximal invasion. This plan would not

correct the skeletal disharmony (skeletal class II, occlusal cant, and skeletal deep bite). Therefore, we choose surgical Orthodontic treatment with 2-jaw surgery.

Treatment Progress

0.022" slot M.B.T. pre-adjusted edgewise appliances were placed on both arches and leveling and alignment done with .016" Nickel Titanium archwires followed by .019" x .025" Nickel Titanium archwires. It is followed by 0.019" x .025" stainless steel archwires in both upper and lower arches. Right lower posterior bite blocks were given to facilitate lower anterior bonding and to allow the intrusion of right upper posteriors, miniscrew implants were used to allow the intrusion of lower anteriors. tongue tie was corrected with a lingual frenectomy.

After 12 months of pre-surgical orthodontic treatment, Lefort I Osteotomy was performed for differential maxillary impaction and BSSO, subapical osteotomy for Mandibular advancement. The Maxillary impaction by 5mm and Mandibular advancement by 10mm.

Finishing and detailing was done using 0.019"x0.025" Niti and sectional .016 SS wire. The pre-adjusted edgewise appliance was replaced 6 months after Orthognathic surgery. After removal of the edgewise appliances, a wrap-around retainer and linguallly bonded retainer were placed in the maxillary and mandibular arches for retention. The total active treatment time was 18 months.

Treatment Results

The post-treatment records show that both skeletal disharmony and malocclusion were significantly improved, and jaw movements during mastication were in the normal range without signs or symptoms of TMD. The asymmetric gingival display was also improved with differential Maxillary impaction.

Post-treatment cephalometric evaluation showed Class I skeletal jaw base relationship (ANB, 2 °). The Maxilla was impacted only on the right half quadrant by 5mm. Mandibular advancement was 10mm. Jaw movement during Mastication was normal on a 6degree of freedom Jaw Movement recording system. patient referred to the department of prosthodontics for replacement of missing teeth.

Conclusion

We treated an adult skeletal class11 facial asymmetry with skeletal deep bite and decreased lower facial height with Lefort-1 osteotomy combined with BSSO and subapical osteotomy. After treatment, both skeletal disharmony and malocclusion were significantly improved, and jaw movements during mastication remained in the normal range with no TMD Signs or symptoms.

Legends

Figure 1: Pre treatment facial and intra oral photographs

Figure 2: Pretreatment radiographs: A, lateral cephalogram; B, panoramic radiograph

Figure 3: Post treatment facial and intra oral photographs

Figure 4: Post treatment radiographs: A, lateral cephalogram; B, panoramic radiograph

Figure 5: pretreatment (black) and post treatment (pink) cephalometric tracings



Figure1: Pre treatment facial and intra oral photographs



Figure 2: Pretreatment radiographs: A, lateral cephalogram; B, panoramic radiograph



Figure 3: Post treatment facial and intra oral photographs

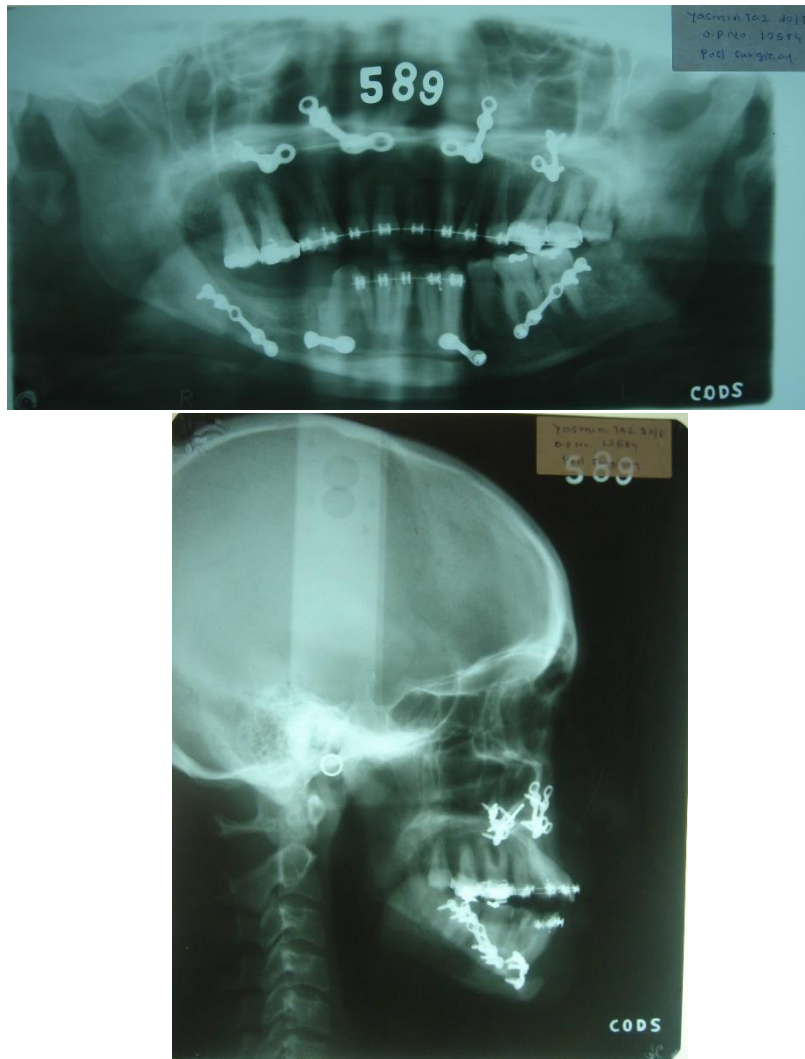


Figure 4: Post treatment radiographs: A, lateral cephalogram; B, panoramic radiograph

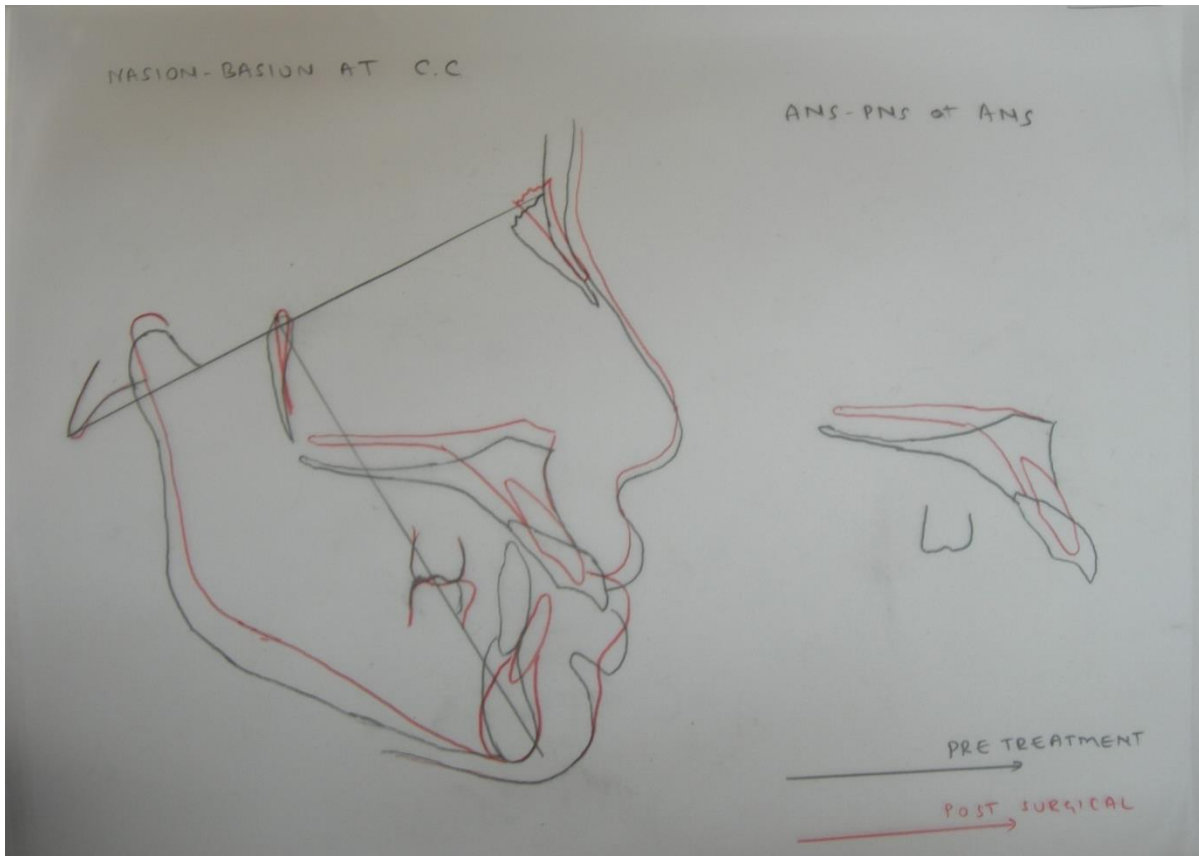


Figure 5: pretreatment (black) and post treatment (pink) cephalometric tracings

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