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### ABSTRACT

Management of the Class III malocclusion continues to challenge the practicing orthodontist. Skeletal Class III patients can be treated by either orthopedics, orthodontic camouflage, or orthognathic surgery, depending on the degree of skeletal discrepancy, the skeletal pattern, and the age of the patient. The orthopedic approach for growth modification is usually limited to children with growth remaining and on the other hand Camouflage orthodontic treatment may be performed in patients with a mild skeletal Class III discrepancy with no remaining growth. However, in patients with a severe skeletal, it is necessary to consider a combined surgical/orthodontic approach. The strategy for treating borderline orthodontic cases with camouflage therapy is to create dentoalveolar changes that will compensate for a skeletal base imbalance. This case report describes the nonsurgical treatment approach of a skeletal Class III malocclusion that relied on simple treatment mechanics to effectively improve the patient's profile and esthetics.

**Keywords:** Skeletal Class III, Orthodontic Camouflage, Anterior Crossbite  
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### INTRODUCTION:

Class III malocclusion is a challenging orthodontic problem. A good understanding of the age, amount, and direction of growth in Class III patients comes into play when deciding between orthodontic and surgical approaches.

Orthodontic camouflage is a therapeutic process which masks the skeletal discrepancies by dentoalveolar compensation is made without correcting the basal dysplasia. It is usually considered only for borderline patients and patients with severe problems who do not want surgery as a part of their treatment plans.

In cases treated by orthodontic camouflage, the dental movements are often the opposite of those necessary prior to surgery, where dentoalveolar decompensation is the objective. It should be prescribed for young adults only if, before treatment begins, there are cephalometric indications that residual growth will not provoke a worsening of the deformity after treatment, causing dentofacial asymmetry. Camouflage also implies that the tooth repositioning will have a favorable effect or at least be less damaging to the facial esthetics.

Here, we report a nonsurgical orthodontic camouflage approach and its outcome for an adult patient with a skeletal class III malocclusion.

### CASE REPORT:

#### Diagnosis

A 20 year male patient came with a complaint of irregularly arranged Upper front teeth and forwardly placed lower front teeth. On extraoral examination, the patient had dolicocephalic head form, leptoprosopic facial form, concave prolife, anterior divergence, and protruded lower lips [Figure 1].



Figure 1: Pretreatment extraoral photographs

On intraoral examination, the patient had an anterior crossbite in relation to all incisors, lower crowding and Class III molar and canine relationship, upper incisors are proclined, lower incisors are retroclined and forward path of closure, and reverse overjet of 4 mm and overbite of 2 mm was seen [Figure 2]. Regarding soft tissue, the lower lip was protrusive and obtuse nasolabial angle. The model analysis showed that the Bolton's Overall ratio excess by 3.22 mm in maxilla.

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Figure 2: Pretreatment Intraoral photographs

**CEPHALOMETRIC EVALUATION**

Table 1: Comparison of pre - and present stage cephalometric value

Skeletal Measurement	Pre Treatment	Present Stage
SNA	83o	82o
SNB	88o	88o
ANB	-5o	-6o
SND	86o	86o
GoGn SN	25o	25o
Upper I to NA (mm)	11mm	12.5mm
Upper I to NA (angle)	38.5o	44o
Lower I to NB (mm)	3.5mm	3mm
Lower I to NB (angle)	20o	18o
Lower ant facial height (ANS - Me)	75mm	73mm



Figure 3: Pretreatment cephalograph and orthopantomogram (OPG)s

**TREATMENT OBJECTIVES:**

1. Correction of anterior crossbite
2. Correction of crowding
3. To obtain ideal overjet and overbite
4. To obtain ideal esthetics.

**TREATMENT PLAN:**

- 1). Stable results in skeletal Class III malocclusion with prognathic mandible can be obtained with orthognathic surgery procedure like bilateral sagittal split osteotomy (BSSO). In this case BSSO procedure was the treatment option. Since the patient was not willing for surgery, orthodontic camouflage treatment was executed.
- 2). Orthodontic camouflage, with the biteblock in lower posterior resolving the crossbite and achieving ideal overjet and overbite

**TREATMENT PROGRESS**

Treatment was started with PEA 0.022" slot, brackets were bonded on the upper with bilateral fixed posterior bite block on the lower molar region. Leveling and alignment was done followed by Class III till ideal molar and canine relationship achieved. (Figure 3)



**RESULT**

Well aligned the upper and lower arches. An esthetically acceptable smile arc was achieved after the correction of the anterior crossbite. Class I molar, canine, Incisor relationship was achieved. (Figure-4)



Figure 4 - Present stage Intra oral photographs

Facial photographs and lateral cephalogram showed concave facial profile changed to desired straight profile and smile is improved as well. (Figure-5)



Figure 5 - Present stage Extra oral photographs, Lateral Ceph. and orthopantomogram (OPG)

Comparison Of Pre And Present Stage Facial Photographs



**Discussion**

The strategy for treating borderline orthodontic cases with camouflage therapy is to create dentoalveolar changes that will compensate for a skeletal base imbalance. The decision as to which type of treatment is indicated is usually based on the degree of the anteroposterior and vertical skeletal discrepancy, the inclination and position of the incisors, and the dentofacial appearance. In this case, with the skeletal and dental disharmony, the orthodontic fix therapy along with orthognathic surgery would probably have been the better of the option.

Orthodontic camouflage is a viable alternative for the treatment of the mild-to-moderate skeletal discrepancies of the maxillary structures with the aim of correcting the occlusal relationships in patients who, for different reasons, decide not to be treated surgically. An ideal candidate for the camouflage treatment should present little residual growth potential, and mild-to-moderate crowding in order to be able to use the space of the extractions, thus allowing for the achievement of the orthodontic camoflageand improving the dento-skeletal relationship.

The case described here is a skeletal Class III patient

with concave facial profile and crowding of the arches and anterior crossbite. The correction of upper anterior crowding could be achieved by mild proclination of the upper anterior and passive expansion of the arch, which is an acceptable compromise in the camouflage of skeletal Class III malocclusions.

Proffit and Ackerman suggested, in their concept of the "3 envelopes of discrepancies", the degree of maxillary incisor protrusion relative to mandibular incisor retrusion as a critical limitation for differentiating between orthodontic and combined orthodontic-surgical treatment. Kerr et al. tried to establish cephalometric yardsticks to objectify treatment decisions. The most important factors that differentiated the surgery and orthodontic patients in their study were size of the anteroposterior discrepancy, inclination of the mandibular incisors, and appearance of the soft-tissue profile.

However, skeletal Class III patients have concave profiles, with thin basal bone over the symphysis. Significant lingual inclination and even induce

unwanted complications such as root exposure and resorption of the incisors. Even after treatment, difficulties in plaque control of the lingual surface can lead to plaque accumulation and periodontal diseases.

## CONCLUSION

Dentoalveolar compensation may be the treatment of choice for an adult Class III patient who does not want to undergo surgery. The clinician needs to weigh the risks and benefits before embarking on orthodontic therapy in any case where the results are uncertain. The proposed treatment objectives were to obtain a stable dental articulation and good esthetics instead of the skeletal disharmony and dental Class III malocclusion was achieved.

During and after completion of treatment, no unfavorable residual mandibular growth was found, which was of utmost importance for the success of the orthodontic camouflage treatment in this particular case.

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