Case Report

TWO PHASE FOR A BETTER FACE!! TWIN BLOCK AND HEADGEAR FOLLOWED BY FIXED THERAPY FOR CLASS II CORRECTION

U S Krishna Nayak¹, Ashutosh Shetty², Crystal Runa Soans³ & Vivek Bhaskar⁴

A.B. Shetty Memorial Institute of Dental Sciences, Nitte University, Mangalore, Karnataka, India
¹Dean (Academics) & Head, ²Professor, ³Lecturer, ⁴Post Graduate Student, Department of Orthodontics & Dentofacial Orthopaedics, A.B. Shetty Memorial Institute of Dental Sciences, Nitte University, Mangalore - 575018, Karnataka, India.

Correspondence:
Vivek Bhaskar
Post Graduate, Department of Orthodontics & Dentofacial Orthopaedics
A.B. Shetty Memorial Institute of Dental Sciences, Nitte University, Mangalore - 575 018, Karnataka, India.
E-mail : vivek.libra@gmail.com.

Abstract:
Correction of a skeletal sagittal Class II in a growing child can be done either in one single phase of treatment, or in two phases, i.e a first phase of functional appliance to reduce the severity of the skeletal discrepancy, followed by fixed appliance therapy to refine the occlusion. This 2 phase treatment has quite a few advantages such as early correction of the facial profile is seen by the child and parent, which motivates them, as well as, reduces the social handicap produced as a result of the malocclusion. Hence, this case report describes the treatment of a Class II child, with a Twin block appliance followed by fixed orthodontic treatment.

Keywords : Two phase treatment, Twin block, Headgear.

Introduction:
Class II malocclusions can be due to prognathic maxilla, or retrognathic mandible, or both. In a growing patient, functional appliances are most widely chosen to correct the skeletal discrepancy making use of the natural growth potential. Usually, it is a 2 phase treatment, where in the skeletal discrepancy is corrected first, followed by detailing of the occlusion using fixed mechanotherapy.

A variety of functional appliances are at our foray to correct class II malocclusions like activator, functional regulator, twin block etc. The twin block, given by Clark (¹), is a very commonly used appliance for many reasons; it has reduced bulk unlike other appliances, patient adjusts to speech and other functions very quickly, it can be fixed to the teeth in non-compliant cases, patient immediately sees the changes upon wearing the appliance which acts as a positive reinforcement. Compared to other appliances, twin block seems to be more useful in causing sagittal and vertical changes. (²)

This case report is of an 11 year old boy, who presented with a skeletal Class II, who was successfully treated in 2 phases- first phase of functional therapy using Twin Block, followed by a second phase of fixed mechanotherapy.

Case Report:
An 11 year old boy, Nidhin, reported to the Department of Orthodontics, A.B.Shetty Memorial Institute of Dental Sciences with a chief complaint of forwardly placed upper front teeth.

He had no significant medical or dental history.

On extra oral examination (FIGS 1-4), he presented to be Mesomorphic, Brachycephalic and Euryproscopic, with a convex profile, consciously competent lips, Class II apical bases, and recessive chin.
On intraoral examination (FIGS 5–10), dentition was in the mixed dentition stage. Generalised spacing was seen in the anterior segment of the maxillary arch. On occlusion, molar relation was Class II bilaterally, with overjet of 12mm and overbite of 4mm, and the lower dental midline was shifted to the right side by 3mm.

The cephalometric analysis of the patient (Image 10) revealed him to be a Skeletal Class II with a prognathic maxilla, retrognathic mandible, recessive chin, horizontal growth, proclined anterior teeth and an acute nasolabial angle.

An analysis of the hand wrist radiograph (FIG 11) revealed the patient to be in the SMI 3 stage of skeletal maturation indicating 65-85% growth was still remaining.

Using the above, the diagnosis was arrived to be:
1. Skeletal- Class II apical bases.
2. Dental- Class II div 1 malocclusion.

**Keywords:** Two phase treatment, Twin block, Headgear. - Vivek Bhaskar
Visual Treatment Objective (VTO): (FIGS 13, 14)
The VTO was positive, indicative that mandibular advancement would benefit the patient.

Alongside, from the second month onwards, a high pull headgear was given (FIGS 20, 21) with a force of 400g bilaterally. The headgear was used to restrain the prognathic maxilla.

Headgear:
The appliance was worn full time for a period of 12 months. Post Twin Block-Headgear Intra Oral Images: (FIGS 22-26)
Post Twin Block-Headgear Extra Oral Images (Figs 27-31)

PHASE 2- FIXED ORTHODONTIC TREATMENT

Following 12 months of functional and orthopaedic therapy, fixed orthodontic treatment was started with Pre Adjusted Edgewise (MBT 0.022" prescription). Levelling and alignment was done from initial 0.016 NiTi wires till the final arch wire of 19x25 S.S was in place.

Mid Treatment Intra Oral Photographs (Figs 32-36)

The fixed orthodontic treatment was completed in a period of 20 months, with the total treatment time being 32 months.

Post Treatment Photographs (Figs 37-46)
Keywords: Two phase treatment, Twin block, Headgear. - Vivek Bhaskar

TABLE 2

<table>
<thead>
<tr>
<th>Measurement</th>
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<tbody>
<tr>
<td>SNA</td>
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<tr>
<td>SNB</td>
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<td>ANB</td>
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<tr>
<td>Sn-Go-Gn</td>
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<tr>
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<tr>
<td>Lower incisor – NB</td>
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<tr>
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<tr>
<td>Interincisal angle</td>
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<tr>
<td>Nasolabial Angle</td>
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</tbody>
</table>

RETENTION: (FIGS 49-53)
The patient was given a modified Hawley's retainer, which was worn for a period of 12 months.

Discussion:
Correction of sagittal discrepancies in children can be either one phase or two phase treatment. Two phase treatment offers the advantages of earlier correction of the discrepancy, followed by a reduced period of fixed appliance treatment, reduced chances of surgery at a later date. (1)

We chose the twin block appliance as it offers many advantages such as better patient acceptance, reduced hygiene demands, growth pattern of the patient etc.

Conclusion:
In this patient, the two phase therapy with twin block and headgear helped us achieve satisfactory results. However, long term studies with large sample sizes are needed to validate this method.
References: