

## Advance And Align: Incisor Alignment During Twin Block Therapy

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**Abstract:** Class II malocclusions are amongst the most significantly seen malocclusion in daily clinical scenario. These malocclusions are usually exhibiting either a dental, skeletal and/or functional characteristics. In cases where there is a combination of crowding and skeletal discrepancy, the time required for the treatment when compared to that of well aligned arch form is more. Compliance plays a major role in functional appliances as they are not within the control of the operator. In view of this, a fixed or a partly fixed Twin block ensures a better treatment outcome in terms of patient compliance. Therefore, a Twin-block modification that employs a synergistic approach to combine the pre-functional and functional phase together offering simplicity in terms of design and fabrication along with an added advantage of patient compliance could therefore be a useful technique in clinical scenarios that present with moderate crowding.

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### I. Introduction

Class II malocclusions are amongst the most significantly seen malocclusion in daily clinical scenario. These malocclusions are usually exhibiting either a dental, skeletal and/or functional characteristics. Skeletal disharmony in class II malocclusions are characterized by an increased ANB angle and large Wits appraisal which indicate the discrepancy between the maxilla and mandible. This may or may not be presented along with the vertical discrepancy.<sup>1</sup>

The use of the functional appliance therapy has a better outcome during a particular age group. The functional appliance treatment will have a successful outcome if it coincides with periods of active growth. This usually overlaps with the middle to late mixed dentition period.<sup>2</sup>

Irregularity and crowding of dental arches may require an intervention in the treatment to align them and improve the arch form. This intervention should be done as early as possible in the mixed dentition before the eruption of permanent successors. In order to correct an irregular arch form when it is moderate or severe, usually a Twin block treatment precedes fixed appliance treatment in the permanent dentition. However, when the crowding is less, fixed appliances maybe used along with Twin blocks using brackets for correction of anterior alignment.

In cases where there is a combination of crowding and skeletal discrepancy, the time required for the treatment when compared to that of well aligned arch form is more.<sup>3</sup> Compliance plays a major role in functional appliances as they are not within the control of the operator. In view of this, a fixed or a partly fixed Twin block ensures a better treatment outcome in terms of patient compliance.<sup>4</sup>

Therefore, a Twin block was modified to facilitate the alignment of 42 whilst correcting the skeletal class II discrepancy in a 10 year old girl with an ANB of 6degrees.

### II. Fabrication And Design

This modification is presented as a standard Twin block with lower first permanent molars banded, 42 bonded with a Begg bracket and a 0.018" Australian wire with a cuspid circle used to exert force.

The steps are as follows:

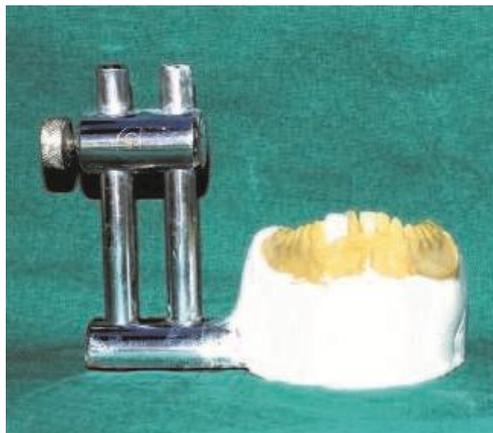
- The patient's photographs, radiographs and study models are taken.
- Construction bite is made with a sagittal advancement of 6 mm and vertical opening of 4 mm.

- The study models with a construction bite is then mounted on a fixator (fig .1)



**Fig.1**

- Prior to fabrication of the twin block, the area anterior to the lingually placed 42 is blocked out with plaster. (fig .2)



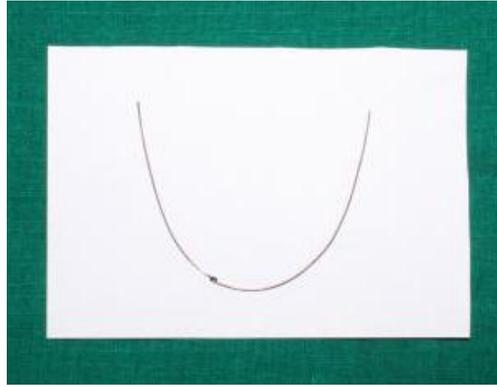
**Fig.2**

- Banding is done in the lower first permanent molars and Begg bracket is bonded on 42 (fig .3)



**Fig.3**

- A 0.018” SS Australian wire (premium +) with a cuspid circle in the region anterior to 42 is fabricated. (fig .4)



**Fig.4**

- A Stainless steel ligature wire of 0.009" is passed through the Begg bracket (fig .5) and the twin block is seated, after which the Australian wire is passed through the helices of the Delta clasp and the molar tubes. The Australian wire is then cinched and the ligature wire from 42 is tied to the cuspid circle to exert force in a labial direction. (fig .6)



**Fig.5**



**Fig.6**



### **III. Discussion**

Two-phase therapy advocating myofunctional appliances for growth modulation has been a beneficial treatment option in growing patients. This frequently necessitates moderately aligned arches for easy fabrication and wearing of the appliance. Crowded dentition usually requires a pre-functional phase for arch alignment thus, prolonging the treatment duration. This proves to be a concern especially with respect to the timing the peak height velocity is attained.<sup>5</sup>

Despite numerous modifications to the standard twin block appliance that have been available, there has been a lacunae in modifications of the appliance that combine the pre-functional and functional phase together in order to reduce the treatment duration.<sup>3</sup>

Inclusion of the components of fixed mechanotherapy along with the design of the standard twin block in order to advocate tooth movements to relieve crowding have been rarely implemented in clinical practice.

### **IV. Conclusion**

A twin-block modification that employs a synergistic approach to combine the pre-functional and functional phase together offering simplicity in terms of design and fabrication along with an added advantage of patient compliance could therefore be a useful technique in clinical scenarios that present with moderate crowding.

### **References**

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