

Correction of Skeletal Class II Malocclusion by Churro Jumper: A Case Report

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ABSTRACT

Background: This is a case report of a 18 year-old male with a Class II division 1 malocclusion along with cross bite with upper right central incisor, treated with a Churro jumper. The Churro Jumper is a clinically efficient, inexpensive and uncomplicated fixed flexible functional appliance to correct skeletal class II malocclusion. The only problem with this appliance is its frequent breakage and oral hygiene maintenance causing inconvenience to both patient as well as operator.

Keywords: Churro jumper, Fixed functional appliance.

INTRODUCTION

Class II division 1 malocclusion is frequently seen in orthodontic practice, and it constitutes 12% to 49%

of all orthodontic problems. According to McNamara,³ the commonly seen characteristic of all Class II malocclusions is skeletally mandibular retrusion, rather than maxillary protrusion. So the main goal of most Class II treatment protocols is modification and redirection of mandibular growth. This method also forms the foundation of functional jaw orthopedics.

In previous few years various fixed functional appliances had been used for correction of skeletal as well as dental relations, which require favorable growth, proper treatment planning and good patient co-operation. The main goal of all functional appliances is to correct the antero-posterior as well as vertical jaw relation with correction of overjet and overbite.

Flexible fixed functional appliance that is the Churro Jumper introduced by Ricardo Castanon and Larry White in 1986. This appliance is easy to fabricate, uncomplicated, economic, flexible so easy to chew food and allow movements in various directions.

The Churro Jumper appliance therapy resulted in redirection of maxillary growth, mesial tooth movement in mandible and distal tooth movement in maxilla. It has been claimed that, with this appliance, orthopedic effect could be achieved¹. This appliance demonstrated both dento-alveolar movement and skeletal movement accomplish the class II correction².

CASE REPORT

A 16 year old girl visited to clinic with chief complaint of proclination of upper front teeth. The diagnosis was class II division 1 malocclusion with proclined maxillary anterior teeth with spacing in between that and also a retrognathic mandible. The visual treatment objective was showing positive

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Fig 1: Preoperative.



Fig 2: With churro jumper.



Fig 3: Post treatment.



result, so mandibular protraction and repositioning was decided with a non extraction treatment plan for correction of malocclusion and achieving best treatment result without extraction. Cephalometric analysis showing a brachyfacial growth pattern and a retrognathic mandible. Extraoral examination showing a convex profile with potentially competent lips. For achieving a goal following treatment plan was established: - initial leveling and alignment of the arches using preadjusted edgewise

appliance 0.22 MBT system using the light gauge wires, rectangular NiTi arch wires and rectangular stainless steel arch wires along with posterior bite plate and open coil spring to gain space for correction of cross bite upper right central incisor. After the teeth were judged to have achieved the proper tip and torque, the churro jumper was placed for correction of the Class II skeletal base by functional advancement of the mandible. After

correction completion final finishing and detailing of the occlusion were done.

Construction of Churro jumper

Distance was measured in between distal of mandibular canine bracket to mesial of head gear tube of maxillary first molar and 10-12 mm were added on total distance. Wire of 0.028 inches diameter was used to make 15-20 symmetrical and closely placed coil. The coil was more closer to canine bracket than molar head gear tube. Loop which was closer to spring placed distal to canine and loop which was away from coil were placed distal to head gear tube of maxillary molar and locked.

RESULT

The proclined maxillary teeth were corrected by fixed orthodontic treatment and retrognathic mandible was corrected by fixed functional appliance churro jumper. Dental relationship was achieved class I malocclusion along with lip competency.

DISCUSSION

When the patient comes to the clinic with the pre existing class II malocclusion and incompetent lips

several treatment plans were considered. After Consideration of the patient's age and a positive visual treatment objective (VTO), a non-extraction treatment plan was proposed with the help of a fixed functional appliance. Several appliances were considered such as the Forsus appliance, jasper jumper, Eureka spring but finally a decision was taken to use the churro jumper. The Churro Jumper is an efficient, inexpensive and uncomplicated fixed flexible functional appliance. Churro Jumper contributes in correction of Class II molar relationship by dentoalveolar effects on both jaws along with uprighting of maxillary incisors and proclination of mandibular incisors. The Churro Jumper appliance therapy resulted in redirection of maxillary growth, mesial tooth movement in mandible and distal tooth movement in maxilla. It has been claimed that, with this appliance, orthopedic effect could be achieved¹. This appliance demonstrate both dentoalveolar movement and skeletal movement accomplish the class II correction ². According to Bjork any orthodontic appliance was to cause a counter clockwise rotation of the mandible, it would help with the correction of the class II malocclusion and prevent it from worsening. This is the basis of correction of the class II malocclusion with the help of functional appliances.

	Pre Treatment	Inference	Post Treatment	Inference
N 1 to Pt. A	8.5 mm	Prognathic Maxilla	3.5 mm	Correction of prognathic maxilla
N 1 to Pt. B	-7 mm	Retrognathic Mandible	-3 mm	Correction of deficient mandible
Facial Axis Angle	1 deg.	Average growth pattern	2 deg.	Average growth pattern
Upper 1 to Pt. A	12 mm	Upper incisor forwardly placed	4.5 mm	Correction of proclined upper incisor
Lower 1 to A. Pog	3 mm	Lower incisor forwardly placed	2 mm	Correction of proclined lower incisor

CONCLUSION

Churro jumper is clinically effective and efficient for correction of skeletal class II malocclusion. The major problem with this appliance is frequent breakage of appliance for orthodontist and maintenance of oral hygiene for patient. Over that the Churro jumper is an economic and reliable substitute for the more expensive fixed functional appliances in the market. This case study is a short term report, further research will be needed to assess the long term result.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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