



EFFECTIVENESS OF WEARING INVERTED LABIAL BOW IN CLASS III MALOCCLUSION (CASE REPORT)

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INTRODUCTION

Early treatment of Class III malocclusion has been advocated to reduce the need of treatment in the permanent dentition, when camouflage orthodontic treatment or surgery become the only options. Early intervention is needed in children with moderate or severe anterior crossbite could contribute to class III malocclusion.

DIAGNOSIS

An Indonesian girl, ages 9 year and 4 month, with Class III malocclusion with maxilla retrognathism. On clinical examination, a retruded upper lip with prominent lower lip was noted, frontal view revealed a favorable facial symmetry. She presented with an anterior crossbite and lower midline deviation to the left side (0.5 mm). Her occlusion show Angle Class I molar relationship in her mixed dentition.

TREATMENT OBJECTIVES

The treatment objectives were to correct skeletal Class III malocclusion, anterior crossbite, to provide a normal environment for the growth of the maxilla, to improve the facial profile and to achieve an appropriate occlusion with normal overjet and overbite.

TREATMENT PROGRESS

After removable inverted labial bow with expansion screw was fitted correctly, making sure inverted labial bow to fit it loosely on the lower incisors. She was trained on wearing and removing the appliance several times, and instructions were given to her to use it all the time including nighttime. It will be removed only during eating and brushing. The cephalometric superimposition show that the anteroposterior relationship was improved (SNA 80°, ANB 2°), becomes skeletal Class I, inclination of lower incisors decrease (retroclination) and illustrated a small amount of vertical mandibular growth. From the soft tissue analysis, lower lip has moved backward and upper lip forward.

DISCUSSION

After nine months of treatment, patient presented skeletal Class I malocclusion with poor compliance, especially regarding the expander screw activation. Notwithstanding, significant improvement of the anterior crossbite was observed and facial esthetic was improved with normal overjet and overbite.

The inverted labial bow appliance is used as an alternative to correct an anterior crossbite in the first phase of treatment for Class III patient who are still growing.

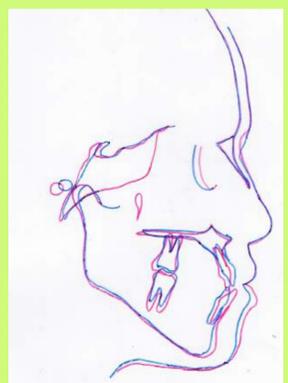


Figure 4. Pre and Post treatment cephalometric super imposition



Figure 1. Extraoral and intraoral photo before treatment



Figure 5. Extraoral and intraoral photo after treatment

Measurements	Mean	Pre-treatment	Post-treatment
Skeletal			
SNA°	82° ± 2	78° (<)	80° (N)
SNB°	80° ± 2	79° (N)	78° (N)
ANB°	2° ± 2	-1° (<)	+2° (N)
NAPog°	-8.5 s/d +10	-1° (N)	4° (N)
MP : SN°	32° ± 2	40° (>)	41° (>)
NSGα° (Y-axis)	65° ± 3	69° (>)	71° (>)
Pog : NB mm	2 mm ± 1	0 mm (<)	1 mm
SGo : NMe %	68% ± 4	60.3 % (<)	57.5% (<)
Wits appraisal	0 mm ± 2	-8 mm (<)	-4 mm (<)
FMA	22 - 28°	30.5° (>)	30.5° (>)
Dental			
UI : LI°	130° ± 2	126° (<)	131° (N)
UI : SN°	104° ± 2	102° (N)	104° (N)
LI : MP°	90° ± 2	94° (>)	84° (<)
UI : APog mm	4 mm ± 2	5 mm (N)	9 mm (>)
LI : NB mm	4 mm ± 2	9 mm (>)	7 mm (>)
Bidang E : LS mm	+1 mm	-4 mm (<)	1 mm (N)
Bidang E : LI mm	0 mm	3 mm (>)	0 mm (N)

Table 1. Cephalometric analysis before and after treatment

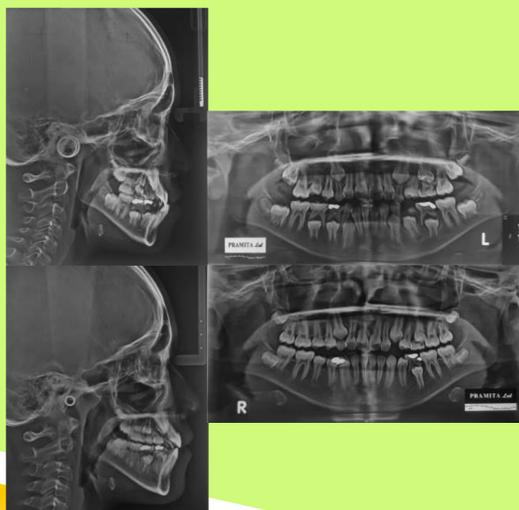


Figure 2. Radiograph pretreatment (above) and posttreatment (below)



Figure 3. Inverted labial bow with expansion screw in maxilla.

CONCLUSION

The case report shows that the stability of the correction of a skeletal Class III malocclusion with maxillary retrognathism by using inverted labial bow with expansion screw. Good facial improvement was seen at the end treatment.

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