

The nonsurgical Orthodontic correction of a Class III malocclusion Case report

Islam MS¹BDS and Hossain MZ² BDS, PhD

ABSTRACT

This is a case report of a patient with a skeletal Class III malocclusion and maxillary arch deficiency. The patient was treated without extraction or surgery by increasing the maxillary arch length. Protraction of the maxillary complex and A point was the result. Favorable growth of both the maxilla and the mandible resulted in a functional Class I occlusion and an improved skeletal relationship.

Key Words: **Class I malocclusion, crowding, edgewise orthodontic therapy** (Bangladesh Journal of Orthodontics and Dentofacial Orthopedics, October 2012, Vol. 3, No. 1, p 38-41).

CASE PRESENTATION:

A 14 years old male patient reported to the the Department of Orthodontics & Dentofacial Orthopedics at Dhaka Dental College & Hospital, Dhaka with the chief complaint of

unpleasant aesthetic look due to crooked teeth in the upper jaw as well as forward position of mandible. The cause of class III malocclusion was unknown. Patients father reported that there were no hereditary class III problem in his family.



Figure 1. Pretreatment extra oral photographs



Figure 2. Pretreatment intraoral photographs



Figure 3. Pretreatment cephalogram and panoramic radiograph

DIAGNOSIS AND ETIOLOGY

The patient was diagnosed with a skeletal and dental class III malocclusion. (Figure 2) The cast analysis revealed class III molar relationship (Figure 2).

The maxillary central and lateral incisors were in lingual crossbite with the mandibular incisors.

The mandible appeared to be slightly protrusive, but did not show evidence of a true prognathism. Patient has a permanent dentition with 4mm upper arch length deficiency.

Cephalometric analysis revealed ANB angle -2° . The maxillary and mandibular incisors were slightly proclined. The vertical dimension for this patient was within normal limits. Temporomandibular joint function was normal.

The cause of the Class III malocclusion was unknown. There was no positive family history

TREATMENT OBJECTIVES

1. Expansion of upper arch.
2. Leveling and alignment of upper arch by the use of fixed edgewise appliances and incorporation of open coil spring to create space for alignment of both upper lateral incisors.
3. Establishment of ideal overbite and overjet.
4. Improvement of facial esthetics.

TREATMENT PROGRESS

As the arch length discrepancy was found in the upper arch, so we started the case with URA with expansion screw over 3 months. Then 0.018 edgewise appliances were placed for levelling and alignment of upper arch and incorporation of open coil spring to create space for alignment of both upper lateral incisors. Because of favorable growth, the anterior cross bite and class III molar relationships were corrected without the use of face mask therapy or a bite plane. After satisfactory over jet and over bite and incisor angulation and interdigitation were achieved, the fixed appliances were removed. Then upper Howley retainer were placed. The active treatment time was 12 months.



Figure 4. Progress intraoral photographs



Figure 5. Post treatment intraoral photographs



Figure 6. Post treatment Retainer

RESULTS ACHIEVED

A functional Class I occlusion with good overbite and overjet was achieved (fig-4). The anterior crossbite was corrected. Temporomandibular joint function continued to be normal.

Cephalometri analysis showed protraction of the maxillary

complex, including the maxillary incisors and point A. The posttreatment ANB angle was 2° (fig-10). The angulation of the maxillary and mandibular incisors remained relatively unchanged. Both groups of teeth continued to be slightly proclined in relation to their skeletal components. Mandibular growth appeared to be minimal and proportionate to maxillary growth.

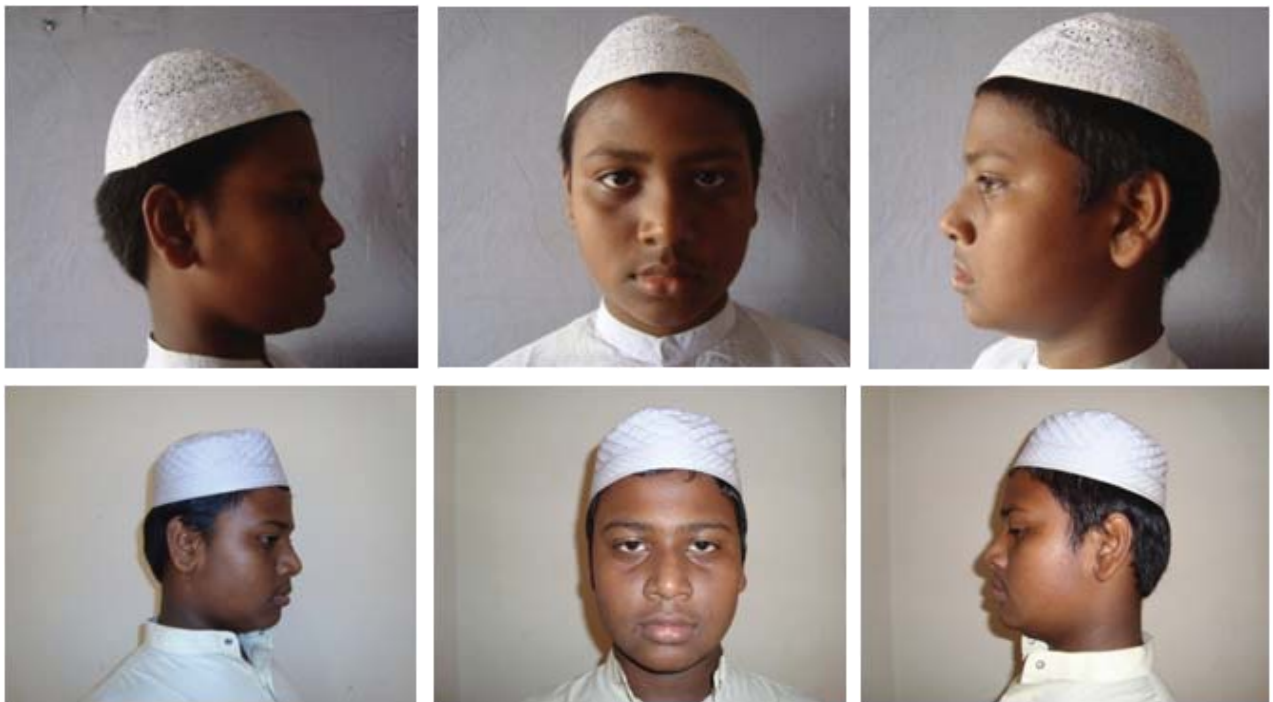


Fig-7. Pretreatment and post treatment extraoral photographs



Fig-8. Pretreatment and post treatment intraoral photographs

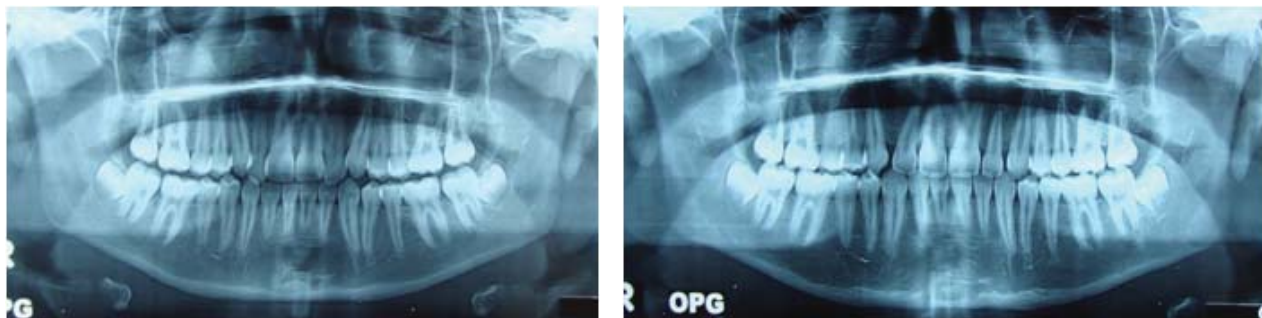


Fig-9. Pretreatment and post treatment OPG



Fig-10. Pretreatment and post treatment cephalogram

FINAL EVALUATION

This Class III malocclusion was successfully corrected with a nonsurgical treatment plan. Good tooth relationship were achieved and a normal overbite and overjet relationship was obtained. The resultant facial profile was acceptable. A successful treatment result was obtained because of favorable growth amounts and direction.

REFERENCES:

1. Graber LW. Chin cup therapy for mandibular prognathism. *AM J Orthod* 1977;72:23-41.
2. Sakamoto T, Iwase I, Nakamura S. A roengeno- cephalometric study of skeletal changes during and after chin cup treatment. *Am J Orthod* 1984;85:341-50.

Correspondence

Dr. Md. Sayeedul Islam, BDS
FCPS-II Trainee
Dept. of Orthodontics and Dentofacial Orthopedic
Dhaka Dental College and Hospital
Mirpur-14, Dhaka-1206
E-mail : s.islamd30@yahoo.com
Cell : +8801819277432