

Orthodontic management of a case of Class II Div 1 malocclusion (incisor based) with crowding in both anterior segment & multiple supernumerary teeth: A case report

Haque IE¹, Hossain MZ², Faruk SMO³, Mondal S⁴, Biswas G⁵

Abstract

We describe the treatment of an adolescent boy age 10 years, with Class II div-1 malocclusion with crowding due to multiple supernumerary teeth. Treatment consisted mainly of extraction of supernumerary teeth, leveling and alignment of malposed tooth with edgewise fixed appliances by multiloop technique. Due to patient good cooperation, treatment time reduced to 24 months. However the treatment resulted in Class I molar occlusion with proper alignment of upper & lower anterior segment, an ideal overjet, overbite and incisor angulations.

Key Words: Class II div-1 malocclusion, supernumerary teeth, malposition of tooth, edgewise orthodontic therapy.

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Introduction:

According to incisor classification which was adopted by the British Standards' Institute in 1983 is considered simpler & more relevant than Angle's classification, the Class II malocclusion defined as the mandibular incisor edges lie posterior to the cingulum plateau of the maxillary central incisors. Class II malocclusion has two subdivisions : div-1 & div-2. It is called Class II div-1 when the maxillary central incisors are proclined or of average inclination & there is an increased overjet.

Class II is the most common & difficult to treat malocclusion as compared to other malocclusions, due to its wide ranging varieties & interplay of various types of etiological factors.

It is important for every orthodontist to have adequate knowledge & correct understanding of the various types of Class II malocclusions before instituting a treatment plan. There is no universal method of managing the condition. It is essential to have an adequate knowledge

of normal growth pattern & various cephalometric analysis for proper diagnosis & treatment planning.

Case Report:

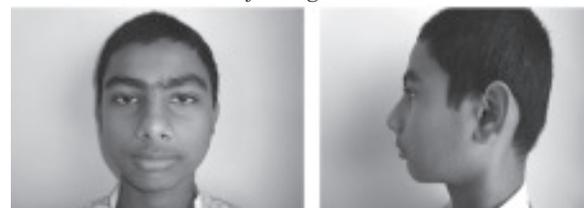
Case history:

Md. Nur Alom, age 10years, came to the Department of Orthodontics & Dentofacial Orthopedics at Dhaka Dental College & Hospital for treatment. He had Class II div-1 malocclusion with malposed teeth in upper anterior arch due to several supernumerary teeth. Patient's major reason for seeking treatment was to improve his dental esthetics and function. He complained of his ugly look during smile and difficulties to bite with his teeth.

Clinical examination



Profile-Right side



Facial photo-Frontal view

Profile-Left side

Fig.-1: Pre-treatment extra-oral facial photographs

1. Dr. Intiaz Ershadul Haque, BDS, FCPS (Orthodontics), Astd. Professor, Dept. of Orthodontics and Dentofacial Orthopedics, Dhaka Dental College.
2. Prof. Md. Zakir Hossain BDS, PhD, Professor & Head, Dept of Orthodontics & Dentofacial Orthopedics, Dhaka Dental College.
3. Dr. S.M. Omar Faruk, Assistant Professor, Dental Unit, Barisal Medical College, Barisal.
4. Dr. Sonali Mondal, Dental Surgeon, Elite Dental Care, Dhaka.
5. Dr. Gonopati Biswas, BDS, DDS, Associate Professor, Dental Unit, Faridpur Medical College, Faridpur.

Address of Correspondence: Dr. Intiaz Ershadul Haque, BDS, FCPS (Orthodontics), Astd. Professor, Dept. of Orthodontics and Dentofacial Orthopedics, Dhaka Dental College, Mirpur-14, Dhaka-1206, Mobile: +8801712277956.

Shape of the head	: Mesocephalic
Profile Analysis	: Convex
Shape of the face	: Oval
Facial symmetry	: Symmetrical
Lips	: Potentially competent
Upper lip line	: Normal
Lower lip line	: Normal
Naso-labial angle	: Obtuse
Labio-mental depress	: Shallow
Temporo-Mandibular joint	: Normal path of closure
Breathing	: Nasal
Deglutition	: Normal.

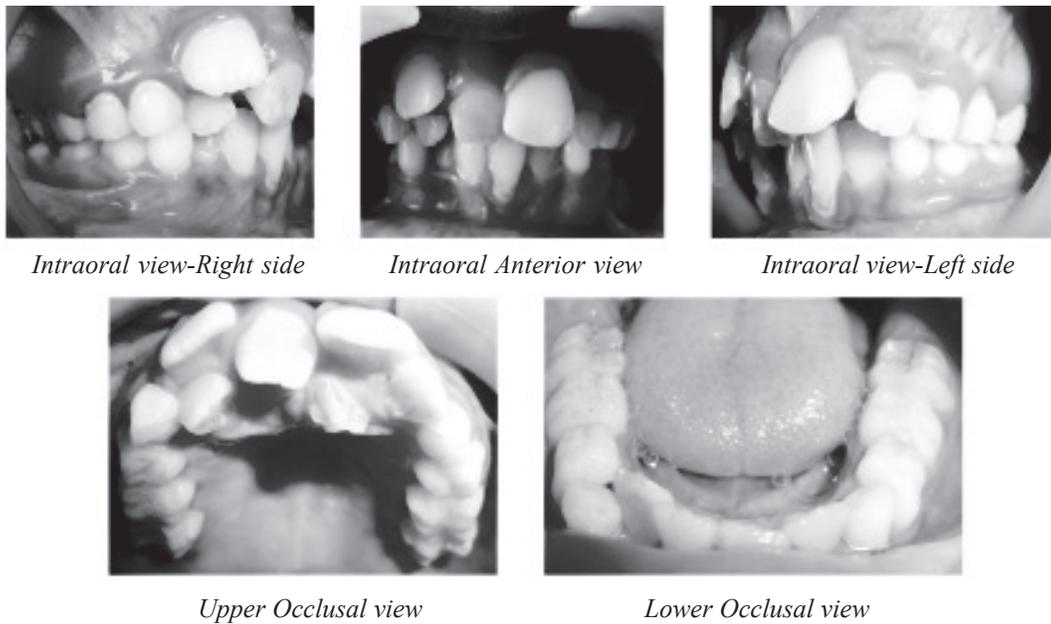


Fig.-2: Pre-treatment intra-oral photographs

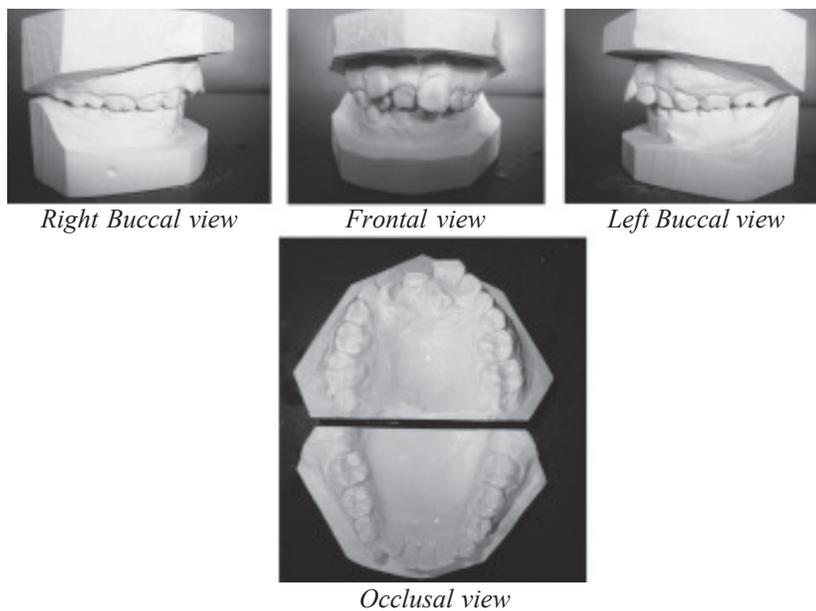


Fig.-3: Pre-treatment intra-oral photographs of models

The patient was in the mixed dentition. He presented with an overjet of 10 mm, and the overbite was 3mm. Molar relationships were Class II on both sides & Incisor relationship was Class-II div-1. His oral hygiene was poor.

Radiographic examination:



Fig.-4: pre-treatment OPG.

Permanent teeth are seen erupting. 3 supernumerary teeth present in upper jaw.

Lateral Cephalometric Radiograph:



Fig-5: Pre-treatment lateral cephalogram and tracing

Table-I

Pre-treatment lateral cephalometric tracing results

Parameter	Reference Measurement ⁵ ($\pm 2^\circ$)	Patient's Measurement
SNA (angle)	82°	88°
SNB (angle)	80°	77°
ANB (angle)	2°	11°
Inter incisal angle	131°	124°

The analysis of lateral cephalogram revealed that the patient had a Class II div-1 dental relation on Class II skeletal base relationship. The maxillary incisors were proclined but mandibular incisors were of average inclination.

Treatment Objectives:

- Establishment of normal overbite & overjet.
- Correction of crowding.
- Correction of inter incisal angle.
- Improvement of functional demand by correcting better occlusal interdigitation.

Treatment plan:

- Extraction of all 3 supernumerary teeth.
- Extraction of all deciduous canines and molars.
- Alignment and leveling of upper anterior teeth.
- Approximation of upper central incisors.
- Further reassessment of the case.
- Retention by Hawley retainer.

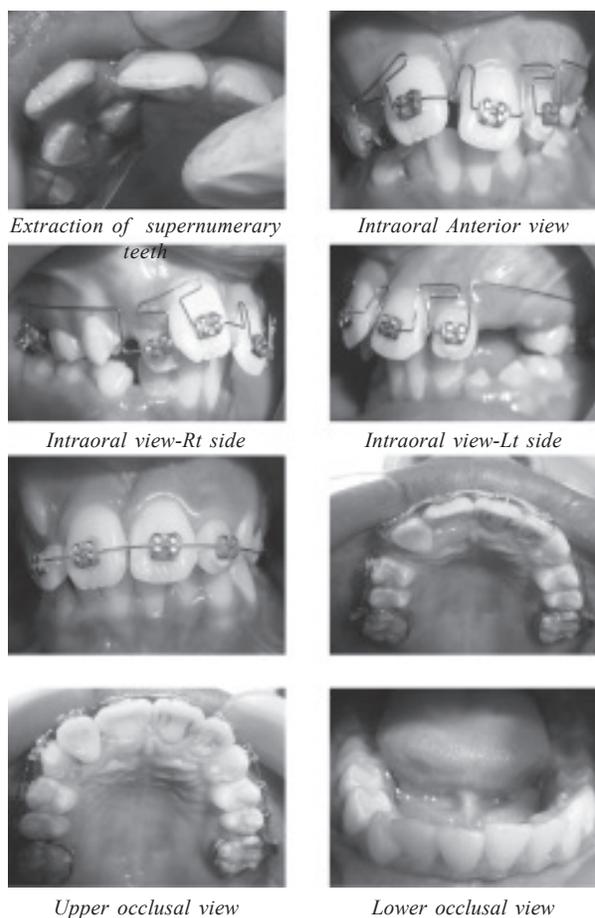


Fig-6: During treatment photographs

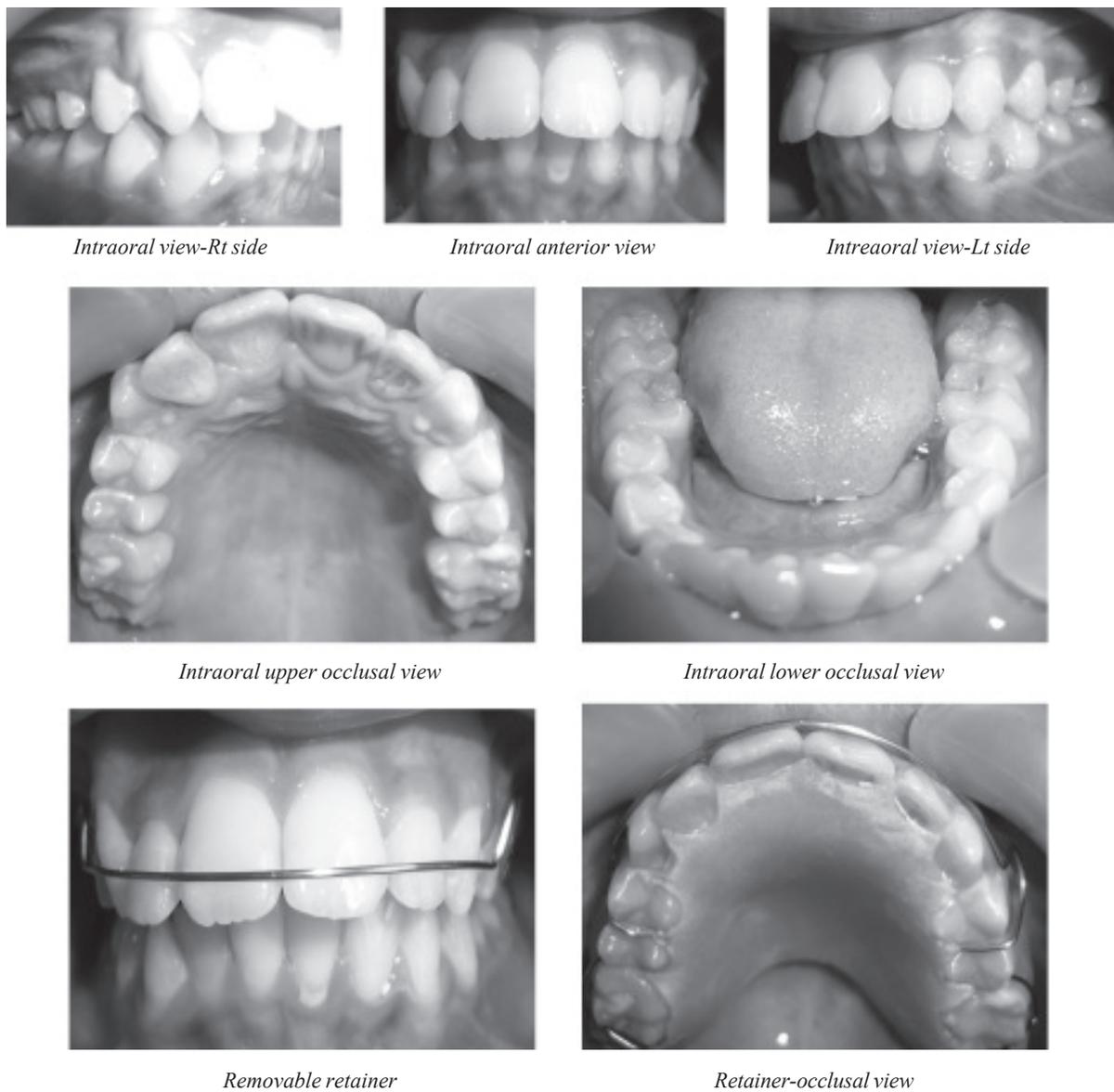


Fig.-7: Post-treatment intra-oral photographs

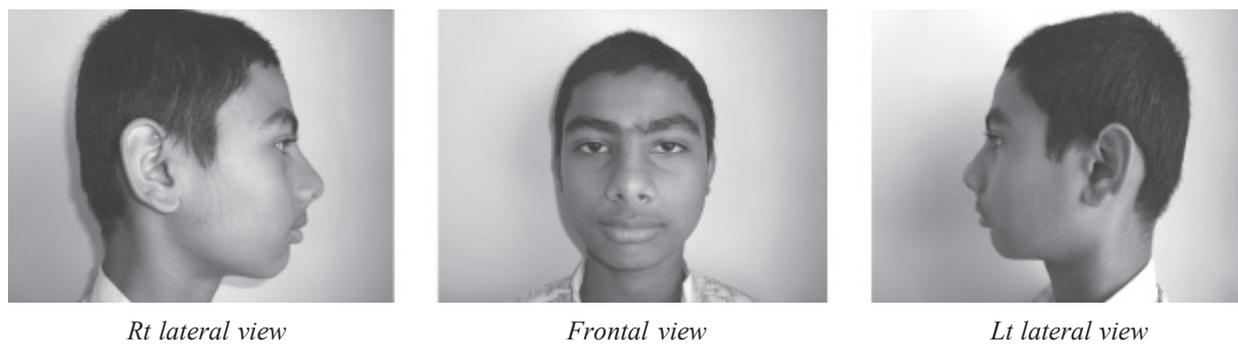


Fig.-8: Post-treatment extra-oral photographs

Discussion:

One of the most common problems in orthodontics today is Class II div-1 malocclusion. Treatment is more complicated when excess tooth material is present. This patient was treated with extraction of supernumerary teeth, deciduous teeth and light edgewise forces to produce a result that was pleasing to the patient and satisfying to the orthodontists in two years period. We did not go for lower arch treatment because the arch seemed to become normal just by extracting deciduous teeth.

Conclusion:

Analysis of final records indicated that all treatment objectives were achieved. The teeth were placed in good alignment, over bite, over jet became normal & good occlusion was maintained. A satisfactory esthetic result

had been achieved. The parent & patient's psychological satisfaction was also achieved.

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