

Proceeding



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Adjunctive Orthodontic Treatment Of Patient With Periodontal Disease (Case Report)

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ABSTRACT

Orthodontic treatment is ideally performed on healthy hard and soft tissue supporting the teeth. Patients with severe periodontal disease do orthodontic treatment if the health of the periodontal tissues are well controlled before beginning orthodontic treatment. Case report describe two cases of malocclusion orthodontic treatment in patients with severe periodontal disease. Orthodontic treatment using fixed appliance in patients with severe periodontal disease, related to the initial examination, biomechanics, effect of orthodontic treatment to the periodontal support and the treatment sequence. Orthodontic treatment in malocclusion patients with severe periodontal disease could be corrected properly so that the patients allows for better in cleaning their teeth. Orthodontic treatment in patient with severe periodontal disease could be successfull if the treatment done with adequate procedures and good patient cooperation.

Keywords: *Orthodontic treatment, periodontal disease*

INTRODUCTION

Adjunctive orthodontic treatment is orthodontic treatment which the tooth movement is carried out to correct malocclusion and restore function and aesthetic especially for anterior teeth. The goals of adjunctive orthodontic treatment in the patient who just had treatment for severe periodontal disease is to make it easier for patient to control periodontal problem by eliminating plaque accumulation, improve periodontal health, improve contour of alveolar ridge adjacent to the teeth, establish favorable crown to root ratio, position and transmitocclusal forces along axes of the teeth, and replace missing teeth or damage teeth. There are two steps of procedures in adjunctive orthodontic treatment for patients who just had treatment of severe periodontal diseases: the first is adequate diagnosis data base, and the second is list of the patient problems¹

In adjunctive orthodontic treatment of patient who just had treatment for severe periodontal disease, the diagnosis and treatment need special attention. The interview and clinical examination are the same with other orthodontic treatments without periodontal

problems, but the diagnosis records for patients who just had treatment for severe periodontal disease are different compared to orthodontic treatment of patients without periodontal disease.

For adjunctive orthodontic treatment of patient who just had treatment for severe periodontal disease, the evaluation of patients' oral health status should be followed by oral hygiene levels, periodontal probing, bleeding on probing, and proper radiographs because panoramic radiographs do not give sufficient details.¹ Biomechanical of adjunctive orthodontic treatment in patient after treatment of severe orthodontic disease using fixed orthodontic appliance is different with orthodontic treatment in healthy periodontal condition. In adjunctive orthodontic treatment of patient after treatment of severe periodontal disease, the forces must be minimum and periodontal condition should be well under controlled.¹

CASE REPORT

A 36 years old male patient was referred from periodontist to have an orthodontic treatment in anterior teeth after periodontal treatment of severe periodontal disease. Chief complains from patient werespacing and longer upper anterior teeth and crowding at the lower incisor teeth.



Figure 1: Smile of patient after treatment of severe periodontal disease and before orthodontic treatment

Aim of Treatment

The aim of orthodontic treatment in this case was to correct the extrusion and protrusion of upper anterior central incisors, the diastema between upper central and lateral incisor, and the crowding of lower anterior teeth.

Treatment Procedures

Orthodontic treatment was done using fixed appliance MBT prescription slot .022. The priority of the treatment was on the maxillary anterior teeth, and in the lower anterior teeth to eliminate of mild crowding. Bracket placement on the posterior teeth was placed at normal position, while at the anterior teeth, was place 1 mm lower from the normal. The treatment objectives were to level and align of central incisor the teeth, close the upper anterior diastema, correct the extrusion of upper central incisors.



Figure 2: Extrusion of upper central incisors, upper central and lateral incisors diastema, gingival recession of upper central incisors and black triangle between central incisors



Figure 3: Panorex Before Orthodontic Treatment

Panorex before orthodontic treatment shows there was vertical resorption of alveolar bone of upper anterior teeth. This panorex was taken after finished of severe periodontal treatment and before orthodontic treatment, which is four anterior teeth was fixed using ligature, supporting bone especially of central upper incisor only one quarter apically, and also one quarter at the mesial of lateral incisors.

Treatment progress

The occlusion of posterior teeth was not changed too much, but the malocclusion at the upper anterior teeth was corrected and black triangle between central incisors teeth was not yet corrected. During orthodontic treatment, patient must be controlled to periodontist in 3 or 4 months interval.

Treatment Result

Treatment result shows that crowding and extruded of upper central incisors anterior teeth was corrected, diastema of upper central and lateral incisors was corrected and the relations of upper canine right and left were class II, the relations of upper first molar left and right were class II. The black triangle between upper central incisors was corrected by stripping at the mesial contact point of central incisors, and the black triangle still showed because of gingival recession.

Before treatment

During Treatment

After treatment

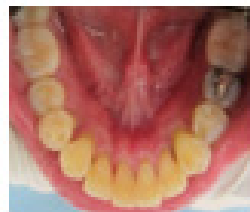
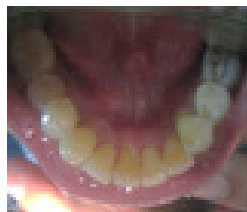
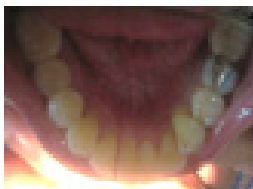
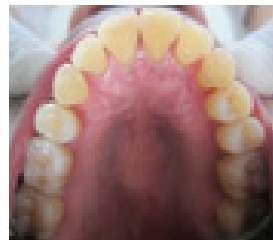
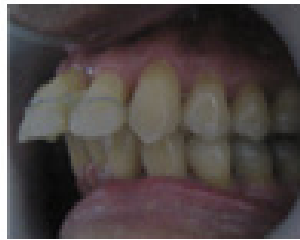
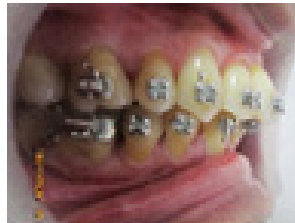


Figure 4: A.Before orthodontic treatment, B. Progress of the treatment, C. After treatment



Figure 5: After Orthodontic Treatment Before Debonding

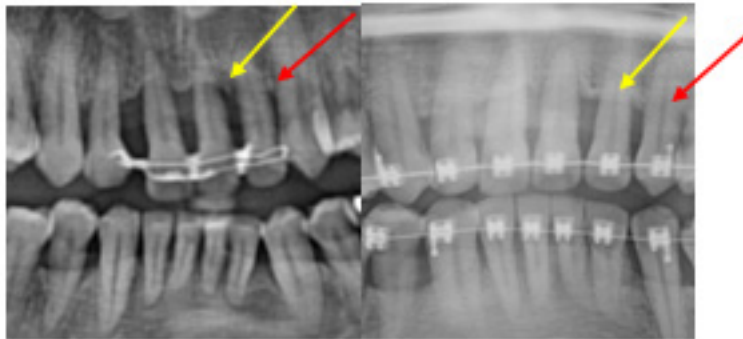


Figure 6: Radiograph from panorex, especially four anterior teeth shows osteogenic formation of alveolar bone (red and yellow arrows) Before Treatment. B. After Treatment before debonding

In this case the goal of the treatment was to correct anterior teeth that suffer of periodontal disease. Esthetically of upper anterior teeth was corrected and patient was satisfied with the result. The mobility of upper anterior teeth was reduced in less of grade one.

DISCUSSION

Severe periodontal disease is characterized by severe breakdown of the periodontal attachment leading to teeth loss unless treated. Symptoms of malocclusion in patients with severe periodontal disease may result increase of overjet and deep bite, flaring of upper incisors, or extrusion of the teeth.² Before starting orthodontic treatment in the patients who just had treatment for severe periodontal disease, periodontal disease should be well controlled, the forces must be keep in minimum, good oral hygiene must be maintained.³The amount of bone supports on each tooth must have special consideration before orthodontic treatment, when the periodontal support has been reduced, the magnitude of forces to move the teeth must be reduced.

Bracket placements in ideal position are only on the teeth to be moved and for other tooth which is not to be moved, the bracket was put in the position where the arch wire is straight, so the tooth will not move. In this case, because posterior teeth were not involved in periodontal disease, the bracket was placed on normal position and in the intruded upper anterior teeth, the bracket was put 1mm to the incisal edge.⁵

In this case, patient has suffered from periodontal disease since 4 years ago, starting with mobility of anterior teeth, the disease keeps getting worst and after completing the periodontal treatment, patient wanted to correct his anterior teeth. Orthodontic treatment was undertaken for nearly one year, followed by orthodontic retention.

CONCLUSION

Adjunctive orthodontic treatment is an orthodontic treatment which the tooth movement is carried out only in the involved part of dentition, with the goal is to restore the function, enhance the appearance, make it easier to eliminate plaque accumulation and orthodontic forces depend on the resorption of alveolar bone.

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