

## ADJUNCTIVE ORTHODONTICS: A SYMBIOTIC APPROACH WITH PERIODONTICS: A CASE REPORT

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### ABSTRACT:

It is an undisputed fact that sound and strong periodontal health is a must in patients seeking orthodontic treatment. In this present era, when a significant number of patients seeking orthodontic treatment are adults, importance of multidisciplinary treatment approach cannot be overemphasized. Need of the hour is to have an integrated approach where in periodontal treatment precedes orthodontic treatment to restore periodontal health. Higher susceptibility of plaque accumulation in patients undergoing orthodontic treatment makes involvement of periodontist almost unavoidable. Also, orthodontic treatment frequently results in undesirable periodontal changes which require immediate attention. More recently, orthodontics has been used as an adjunct to periodontics to increase connective tissue support and alveolar bone height. The purpose of this article is to discuss the mutually beneficial relationship shared between the two specialties to enhance periodontal health as well as dentofacial esthetics.

**Key Words:** Adjunctive orthodontics, multidisciplinary approach, orthodontic intervention, adult orthodontics.



### INTRODUCTION

Multidisciplinary approach is often necessary to treat complex dental problems in patients seeking orthodontic treatment and there cannot be a better example than ortho perio interaction. The term synergy refers to two or more distinct influences or agents acting together to create an effect greater than that predicted by knowing only the separate effects of the individual agents. This definition is applicable to the classic relationship between orthodontic and periodontics specialties in treating patients. Understanding the biologic basis of periodontal surgical procedures, recent advancements in tissue engineering and

research development can yield more productive clinical endpoints than ever before. Making the most of what these two specialties offer each other begins with the identification of periodontal problems that could become more complicated during orthodontic therapy and, conversely, those that could benefit from orthodontic therapy.<sup>[1]</sup>

Reasons for adults seeking orthodontic treatment were enlisted by Perregaard.<sup>[2]</sup> According to him, although 50% of adults seeking orthodontic treatment report with the chief complaint of untreated malocclusion, a significant percentage of patients (12%) seek orthodontic

treatment to prevent occurrence or progression of periodontal diseases. Better compliance offered by adult patients compensate for the slower tissue response.

Orthodontic patients can be classified into three categories: (1) Patients with good oral health; (2) Patients with periodontal disease and/or loss of permanent teeth; and (3) Patients with severe skeletal discrepancies.<sup>[3]</sup> A multidisciplinary approach involving an orthodontist and a periodontist is required to treat patients belonging to the second category. While treating such patients, both specialists should be involved in treatment planning, and the treatment progress should be evaluated and shared.

A Case report discussed here describe the benefits of using adjunctive orthodontic therapy, for unaesthetic appearance due to extruded anterior teeth as a result of severe periodontal damage .The treatment outcome revealed a reduction in clinical crown length and better bone support of intruded teeth & good esthetics.

## CASE DETAIL

A female aged 45 years, complained of compromised esthetics due to proclined upper & lower front teeth along with spacing and mobility since few years. On examination, the patient was in good health and had no history of any medical problems. On clinical examination generalised gingival recession was seen in relation to all teeth.

On Periodontal examination, the maxillary and mandibular central incisors were extruded and found to have grade II gingival recession and grade I mobility. Apart from that upper and lower first molars found to have deep pockets mesially and distally. There was no evident pus discharge, though bleeding on probing was present.

Radiographic examination revealed generalised bone resorption and Pdl widening with increased severity in anterior segment.

## Treatment Phases:

**Pre orthodontic phase:** The first phase of treatment always involves a thorough periodontal work-up. Initially the patient was sent to periodontic department for management of generalized periodontitis. Scaling, root planing followed by flap surgery was done.

**Orthodontic phase:** The orthodontic phase was started after 6 months of periodontal stage which was carried out with 0.022 X 0.028” Pre-adjusted Edgewise fixed Appliance therapy.

**Retention phase:** Following active orthodontic phase, bonded lingual retainers were fixed in the upper and lower arches from canine to canine.

## DISCUSSION

Important rationale for performing orthodontic treatment is to promote the health of the periodontium, thereby enhancing longevity of the dentition. It is therefore assumed that adults with untreated malocclusion would be subject

to a greater prevalence of periodontal disease than if their malocclusion had been corrected orthodontically. The relationship between malocclusion and periodontal disease has received much attention in the literature, with little support for such a relationship. So, with effective plaque and disease control, teeth with reduced periodontal support can undergo successful tooth movement without further compromising their periodontal health. Treatment undertaken in the presence of inflammatory disease can accelerate attachment loss and predisposes to acute inflammatory episodes. During treatment it is essential that oral hygiene maintenance is excellent. Orthodontics should not be restricted only to children, because malocclusion remains one, whether it is in child or in an adult. Ngom and co-workers<sup>[4]</sup> found significant correlations between malocclusions and periodontal condition and suggested that malocclusions are risk markers for periodontal diseases. Nelson & Artun (1997) found a close relation between age & cumulative loss of attachment. Adult Orthodontic patients are more likely to present with periodontal pockets than adolescents.<sup>[5]</sup>

As teeth in adults cannot withstand the same stress on supporting tissues as teeth of children; due to root length and configuration, the quantity of bone support, the point of application of force, and center of rotation, any force beyond the resistance and reparative ability of periodontal tissues would pose greater risk of more attachment loss and hence

orthodontic treatment mechanics was applied with very light forces.<sup>[6]</sup> Thus Adjunctive Orthodontic treatment with the periodontal therapy resulted in well aligned teeth along with comparatively healthy periodontium.

The primary goal of orthodontics is to improve the dental occlusion and to remove malocclusion as an etiologic factor of periodontal disease. Also the aesthetic improvement by orthodontic treatment enhances an individual sense of self and most gratifying. Hence, interdisciplinary treatment is a must to achieve optimum function, health and aesthetic results.

## CONCLUSION

Adjunctive and comprehensive orthodontic treatment is feasible for adults of all ages. Correction of malocclusion makes it possible to improve the quality of periodontal treatment outcomes & vice versa, in addition to providing psychosocial benefits.<sup>[7]</sup>

There are many benefits of integrating orthodontics and periodontics in the management of patient with underlying periodontal defects. The treatment of adult patients is often just one component of a more complex treatment involving several disciplines. Not all periodontal problems are treated in the same way, but comprehensive management of adult patients with both periodontal and orthodontic problems have been shown to improve the condition of periodontium and re-establish a healthy and well functioning long lasting dentition, if oral

hygiene is maintained. In some instances the orthodontist acts as a co ordinate when inter disciplinary treatment is required.

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