Adult Orthodontics

Dr. Kishor A. Chougule
Professor, Dept. of Orthodontics,
Tatyasaheb Kore Dental College & Research Centre, New Pargaon, Kolhapur.

Introduction

A recent survey has shown that there is an increase in the orthodontic patients over 21 years of age. There is no definite age when the male or the female reaches physical maturity and it is therefore impractical to try to determine exactly when adulthood begins.

The rise in the adult patients seeking orthodontic treatment is increased in the recent past due to following few reasons :

1. Many patients who could not avail themselves of treatment two to three decades ago.
2. Innovations in the appliances[1] especially the advent of direct bonding (previously all the teeth used to be banded), ceramic brackets, and lingual orthodontics have caught the attention of many adults who would not otherwise seek orthodontic treatment.
3. Increased experience with adult orthodontic treatment and achievement of good results.
4. Increased public awareness of the possibilities of adult tratment[2].
5. Increased desire of patients and dentists for treatment of dental mutilation problems using tooth movement and fixed restorations rather than removable appliances.
6. Improved socio-economic standards.
7. Widened spectrum and treatment possibilities[3].
8. Awareness of problem made by the family dentist.

The basic difference between adolescent patients and adult patients is that in children, the orthodontist must concern himself with tooth movement plus growth whereas, in adults he is dealing strictly with tooth movement[4]. (Table 1)

Contra-indications for Adult Orthodontics

1. Severe skeletal discrepancies.
2. Advanced local or systemic disease.
3. Excessive alveolar bone loss.
4. Inability to obtain a result that the patient or doctor will perceive as satisfactory.
5. Poor stability prognosis.
6. Lack of patient motivation.

Bio-mechnical Considerations in Adult Orthodontics

Since adult patients who need orthodontic treatment may often have compromised periodontal status, the amount of bone support of each tooth is an important special consideration. When done has been lost, the periodontal ligament area decreases and the same force against the crown produces greater pressure in the Periodontal Ligament of a periodontally compromised tooth than a normally supported one. The absolute magnitude of force used to move the teeth must be reduced when periodontal support has been lost, to prevent damage to the Periodontal ligament, bone, cementum and root.

Mechanics And Treatment

In adults, all dental movements are considered to be possible. Of these, instrusion is difficult, root resorption is a frequent penalty. Extrusion is the least difficult. Tipping is not difficult but septal creastal bone loss may be a serious hazard. Rotation is simple and rapid but has the highest relapse factors.

Limitations In Adult Orthodontics

1. Adults exhibit decreasing blood flow and vascularity and insufficient source of progenitor cells at the site of tooth movement. Thus, there is a delay in initiation of tooth movement.
2. The cortical bone becomes more sense, while the spongeous bone reduces with age, hence the response to orthodontic force is somewhat slower in adults than in children.
3. Periodontal care should be undertaken as frequently as needed during orthodontic treatment to keep a check on periodontal inflammation. The force levels used should be lower than in children.
4. Orthodontic tooth movement is the result of a cellular reaction to a mechanical stimulus. The cellular response may vary with the health and age of the host.

Retention In Adult Orthodontics

Retention is critical and challenging aspect of adult orthodontics. It may include removable retainers, operative procedures like precisions, gingivectomy, gingivoplasty etc. and/or fixed retention.

In general, adults require greater period of retention and wearing of removable retainers for a longer period.

Summary

The etiology of adult malocclusion unlike that of malocclusion in the young presents us with psychological and physiologic factors that specifically affect treatment and dictate special diagnostic, planning and mechanical procedures. Careful diagnosis and treatment planning on a multidiscipline basis will result in satisfactory resolution of most adult malocclusions.

References

1. Goldstein M.C., Bruno M. H., Yurfest P : Esthetic orthodontic appliances for adult, DCNA 33 (2) : 183-193, 1989.
2. Miller G., Vanarsdall R. : Initial preparation for periodontal therapy. In Goldman, HM, Cohen DW, editors : Periodontal therapy, ed. 6, St Louis, 1980, Mosby.
3. Ingber J. S. : Forced eruption : Alteration of soft tissue cosmetic deformities, I. J. periodont Res. 9 : 6, 416-425, 1989.
4. Vanarsdall & Musich : Orthodontics current principles and techniques, 2nd edition; Mosby; Philadephia; Adult orthodontics : diagnosis and treatment; 1999 : 750-834.

Table-1: Difference Between Child And Adult Patient

NO	CRITERIA	ADULT	CHILD
1	• Basic difference	• No growth	• Tooth movement possible along with presence of growth
2	• Appearance of appliance	• Often of great concern	• Usually of little concern
3	• Appliance tolerance	• Find appliance much more uncomfortable. Appliances must be well made and carefully adjusted	• Will tolerate most appliances readily
4	• Speech	• Adjustment more difficult	• Will usually adjust quickly
5	• Periodontal disease	• May be a complicating factor and must be eliminated before starting orthodontic treatment.	• Usually none or not too severe
6	• General health	• Must consider more carefully prior to treatment.	• Usually to little concern
7	• Co-operation	• Patients are usually well motivated and co-operation is excellent	• Ranges from poor to excellent
8	• Treatment appreciation	• Usually very appreciative	• Not very appreciative