

Adjunctive Orthodontic and Its Vital Role in Aesthetic Restorations: A Review

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Abstract

Adjunctive orthodontic treatment for adults is, by definition, tooth movement carried out to facilitate other dental procedures necessary to control disease restore function and/or enhance appearance. The adult orthodontics is a complex treatment involving several dental disciplines, as increase in awareness among the patients is more. However, the first visit to the orthodontist may result in a number of conflicts, which may develop between the orthodontist, general dentist and the patient. Hence, it is about interdependence of all the specialties in dentistry to rule out the possible etiological factor for the excellence in patient general dental care and esthetics. This article emphasizes on treatment principle for well defined treatment goal with combined ortho-perio-endo-prostho-and surgery specialties.

KEYWORDS: Adult Orthodontics, Treatment planning, Interdisciplinary Treatment.

Introduction:

Adjunctive orthodontic treatment for adults is, by definition, tooth movement carried out to facilitate other dental procedures necessary to control disease restore function and/or enhance appearance^{1,2}. Almost always, it involves only a part of the dentition, and the primary goal usually is to make it easier or more effective to replace missing or damaged teeth. Making it easier for the patient to control periodontal problems is a frequent secondary goal, and sometimes is the primary goal^{1,2,3}

The contents of the problem list depend upon the knowledge of the clinician. A general dentist may well overlook a malocclusion and the orthodontist may likewise underestimate the periodontal problems of the patient^{2,3,4}. Therefore, in adult patient treatment planning, the goal is wisdom, not scientific truth–judgment is required, interaction with the patient and involving them in the final treatment plan is necessary⁵.

Patients seek to pursue orthodontic treatment for esthetic improvement. These patients mostly present with mal-alignment of the anterior teeth. The positive effects of orthodontic treatment on their appearance and self-esteem are easy to envision^{6,7}

It is first devoted entirely to the integration of the various treatment procedures and dental specialty contributions for complete health service of adult patients. This review of article deals with the principles and practice of orthodontics, endodontics, prosthodontics, periodontics, and oral surgery^{6,7,8}

Review of literature:-

Anne-Marie Bollen et al (2008)¹ conducted a study on Effects of Malocclusions and Orthodontics on Periodontal Health: Evidence from a Systematic Review. This study stressed on the presence of a malocclusion and periodontal disease. Subjects with greater malocclusion have more severe periodontal disease. This may be dependent on oral health status. The study concludes by stating that the existing low-quality evidence suggests that orthodontic therapy results in small detrimental effects to the periodontium. Euloir Passanezi, et al (2007)³ conducted a study on 17 year young girl with localized juvenile periodontitis and a Class II malocclusion with interdisciplinary approach .the study concluded reporting that is it possible to achieve good esthetics and occlusion with conventional orthodontic treatment.

K. Clocheret, C. et al (2003)⁶ conducted a study in patient suffering from Idiopathic gingival hyperplasia. The case was treated with interdisciplinary approach, study was concluded reporting that orthodontic treatment was most effective.

Sonil Kalia et al (2001)^{2 A} study was conducted on how to approach for interdisciplinary orthodontic adult treatment, however, this study was concluded by stating that how to establish a treatment plan under interdisciplinary cases.

David R. Steiner et al (1997)⁷ A study was conducted on Orthodontic-Endodontic Treatment Planning of Traumatized Teeth; the patient was treated interdisciplinary approach to traumatized maxillary anterior teeth. Study reported that even with the increased chance of fracturing, these teeth should not be arbitrarily extracted. They help to preserve the developing alveolar ridge, act as a space maintainer, and preserve the natural appearance of the site. If the tooth eventually fractures after the completion of facial growth, a permanent replacement can be more favorably placed.

Thomas E. Miller, et al (1995)⁵ A study was conducted on Orthodontic and restorative procedures for retained deciduous teeth in the adult, with complex treatment planning such as (1) tooth-to-arch dimensional discrepancies, (2) teeth tilted from the vertical midline, (3) teeth overlapped with root contact, (4) horizontal loss of arch dimension from retained deciduous teeth, (5) an impacted adult canine tooth, and (6) peg lateral incisors. Prolonged retention of deciduous teeth, a congenitally missing tooth, desired an improved appearance and decided to have orthodontic and prosthodontic treatment.

Discussion:-

A standard problem list should be followed with same sequence parameters, which may vary between different clinicians. The major advantage of following the same sequence helps the clinician not to overlook certain not so obvious, but important problems^{2,3,4,5,6,7,8,9,10}.

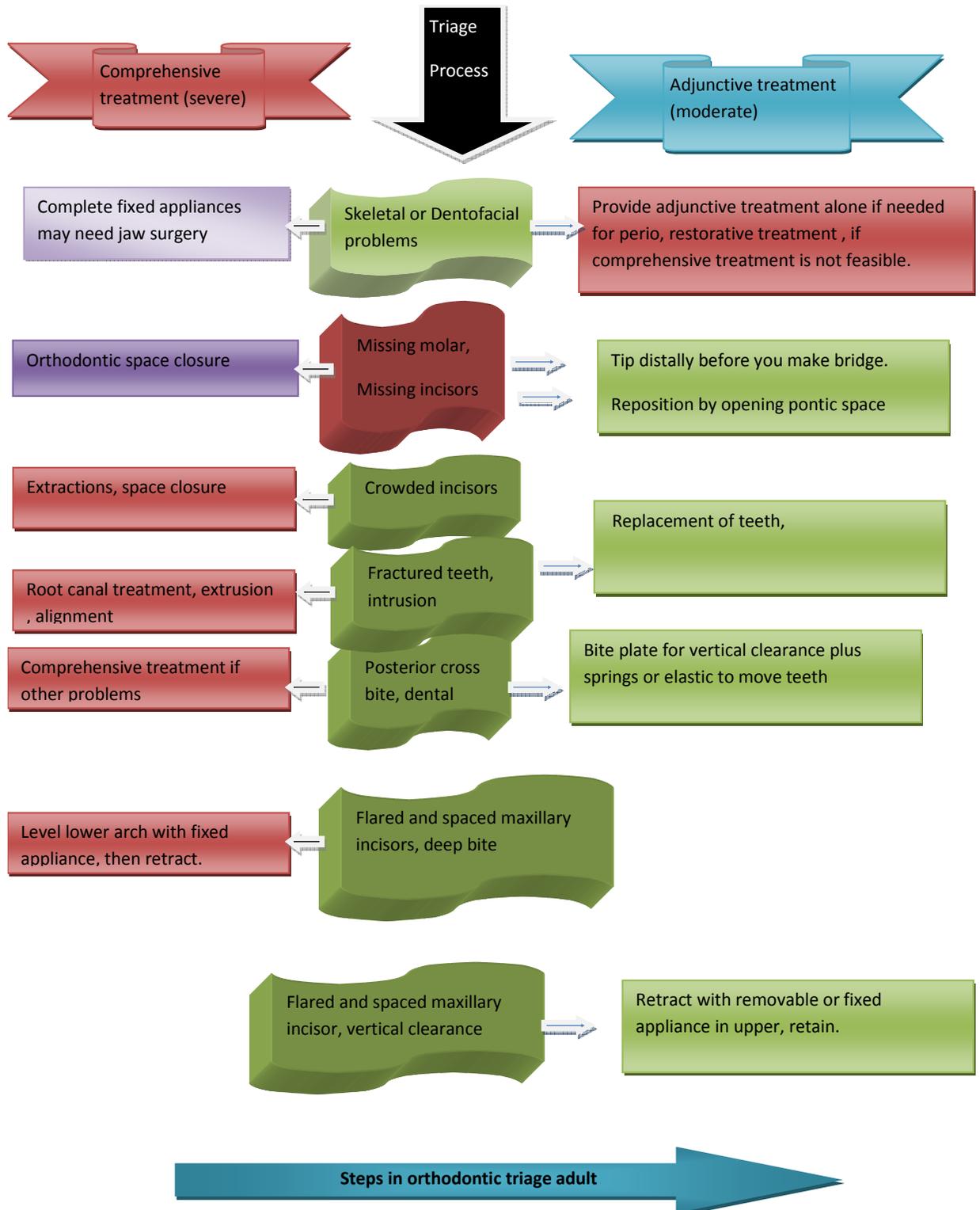
Based on the problem list, the orthodontist can consider possible ways of solving each problem and how these solutions interact with each other, a problem list is necessary before orthodontic treatment is considered^{11,12,13}.

One should note that before and during treatment, general dental health should be maintained. Thus, summarizing the problem list and prepare three dimensional treatment goal, at the end of treatment the achieved tooth movements should be compared with the goal, whereby the effect of the treatment can be evaluated^{12,13,14,15,16}.

When a traumatized tooth is treated, the orthodontist may have clinical questions regarding the effect of trauma on the developing dentoalveolar complex and the success of endodontic treatment in a specific site. Answers to these questions are crucial in preparing the broader orthodontic treatment plan^{17,18}. Trauma can cause many different types of injuries to the teeth and alveolar bone of a young patient. Two common injuries are tooth avulsion and pulpal necrosis. Reimplanted ankylosed tooth may cause discrepancies in alveolar ridge development hence its important to know the history of trauma to the teeth^{19,20}.

Hypodontia of permanent teeth, third molars excluded, has a prevalence of about 8%, with an almost equal sex distribution In a recently published study a rate of 0.16% with six or more missing teeth was reported, oligodontia are often different positional changes of the existing teeth, their morphology and size^{4,7,8,12,21,22,23,24}.

Localized juvenile periodontitis (LJP) is a rapidly progressing form of periodontitis that affects the permanent dentition during the pubertal stage, resulting in loss of attachment of 4 mm or more in at least two first permanent molars and incisors, however today, it is possible that, despite bone loss, teeth can be orthodontically moved if the remaining bone and the periodontium can be brought to healthy states.^{22,23,24,25,26,27,28,29}



Conclusion:-

The practice of orthodontics some times requires a multidisciplinary approach that integrates the knowledge, skills, and experience of all the disciplines of dentistry into a comprehensive treatment plan of the adult patient which could stop deterioration of the

dental general health and helps in the maintenance of success rate in adult orthodontic treatment.

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