

Orthodontic Treatment

Robert L. Boyd, DDS, MEd



This issue of the *Journal of the California Dental Association* is dedicated to current issues, controversies, new treatment approaches and the future of orthodontic diagnosis and treatment. We are fortunate at the University of the Pacific Arthur A. Dugoni School of Dentistry to have several ongoing clinical and research efforts among our faculty in these various areas, which are covered from our perspective in this special issue.

The first article is about one of the most exciting new appliances to appear in the past 30 years, the Invisalign appliance. At Pacific, we were fortunate to be asked to do the first study of this new appliance in 1997, which was made available for clinical trials in 1998. Based on the positive results of this early study, Invisalign was introduced to all dentists in 2000. Since that time, almost half a million patients have been treated with the Invisalign appliance, and other companies are now making competing products. In this article authored by myself, Drs. HeeSoo Oh, Mohamed Fallah, and Victoria Vlaskalic, we discuss some of the advantages and limitations of this new approach. The most obvious advantages are improved esthetics, comfort, and hygiene as compared with



Guest editor / Robert L. Boyd, DDS, MEd, is a professor and the Frederick T. West Endowment Chair in Orthodontics, Department of Orthodontics, University of the Pacific Arthur A. Dugoni School of Dentistry.

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fixed appliances. Another advantage is the increased number of patients who had previously not sought treatment with conventional appliances, are now accepting treatment with Invisalign. However, since it is still early in the evolution of this appliance, it is important that dentists who wish to use it in their practice learn many new concepts before using this innovative approach.

In the article by Drs. Steven Dugoni and Maryse Aubert, the age at which children should start orthodontic treatment is discussed. This subject has been debated amongst orthodontists for many decades. Orthodontists can agree on what is a quality orthodontic result, but they disagree as to how and when to best obtain this result. Some orthodontists would prefer to begin in the early or late mixed dentition. Still others would rather postpone treatment until the permanent dentition at approximately 12 years old. This article evaluates the pros and cons of initiating treatment at different ages.

At the University of the Pacific our primary approach to early treatment of moderate to severe malocclusions is a two-phase approach. The first phase begins in the early mixed dentition at approximately age 8, and the second phase starts in the permanent dentition at approximately age 12. Results from studies of the two-phase method at Pacific show that early mixed dentition treatment with phase I orthodontic care can reduce or eliminate the need for full-banded phase II orthodontic treatment at a later age. These findings are in contrast to other studies that do not show any advantages of the two-phase approach and advocate that treatment

should begin in the permanent dentition, which could shorten the treatment time and lessen the costs to the patient.

In addition to the disputes regarding when the appropriate time is to start treatment, this article discusses the disagreement within the profession on what types of problems should be treated at what age. Some orthodontists would like to treat crowding problems in the mixed dentition, believing that in doing so they will have a better opportunity to develop the arches and avoid extract of premolars. The investigators summarize their recommendations for successful early treatment by emphasizing thorough and accurate diagnosis, comprehensive treatment planning, and continued care during supervision until the eruption of the permanent dentition.

The article on craniofacial anomalies authored by Dr. Marie Tolarová and her team is focused on finding causes and prevention of cleft lip and palate. The authors present some of the new and promising developments now being tested on various dietary recommendations and genetic counseling techniques of these serious congenital malformations affecting so many children in the world today. This article also describes how the Pacific Orthodontic Department collaborates with Rotaplast International, Inc. participating on cleft lip and palate medical missions around the world. Our orthodontic faculty and residents travel to many different countries to help these unfortunate children with existing deformities through treatment, and perhaps just as important, to counsel families about genetic and

dietary influences that could greatly increase the mother's chances of having a child with one or more of these severe birth defects.

With all of the attention being focused on restorative implants in dentistry today, Dr. Heon Jae Cho, one of the world's leading experts in the area of microimplants, has written a very interesting article on this technique. These devices are smaller versions of restorative implants that are used as temporary orthodontic anchorage devices to solve many of the problems that have plagued orthodontists, namely, unwanted, reciprocal movements of other teeth being used as anchorage.

The final article is by one of the foremost clinical orthodontic researchers in the world today, Dr. Sheldon Baumrind. In this article, Dr. Baumrind focuses on the concept of evidence-based treatment. He points out that thus far our profession has accumulated very little evidence with which to test currently available treatments. He further states that because the primary purpose of all clinical research in orthodontics is to improve the delivery of orthodontic treatment, the main tasks of clinical orthodontic research in the next two decades should include the study of: 1) how expert orthodontists make clinical judgments; 2) how good those judgments are; and 3) how we can develop strategies and tools such as 3-D technologies for making better clinical judgments.

All of the authors certainly hope you will enjoy reading this special issue about orthodontic treatment from our perspective at the Arthur A. Dugoni School of Dentistry. ■■■■