

EDITOR

Robert G. Keim, DDS, EdD, PhD

SENIOR EDITOR

Eugene L. Gottlieb, DDS

ASSOCIATE EDITORS

Birte Melsen, DDS, DO

Ravindra Nanda, BDS, MDS, PhD

John J. Sheridan, DDS, MSD

Peter M. Sinclair, DDS, MSD

Bjorn U. Zachrisson, DDS, MSD, PhD

TECHNOLOGY EDITOR

W. Ronald Redmond, DDS, MS

CONTRIBUTING EDITORS

R.G. Alexander, DDS, MSD

S. Jay Bowman, DMD, MSD

Robert L. Boyd, DDS, ME

John W. Graham, DDS, MD

Robert S. Haeger, DDS, MS

Warren Hamula, DDS, MSD

James J. Hilgers, DDS, MS

James Mah, DDS, MS, DMS

Melvin Mayerson, DDS, MSD

Richard P. McLaughlin, DDS

James A. McNamara, DDS, PhD

Elliott M. Moskowitz, DDS, MS

Michael L. Swartz, DDS

Jeff Berger, BDS, DO (Canada)

Vittorio Cacciafesta, DDS, MSC, PhD (Italy)

José Carrière, DDS, MD, PhD (Spain)

Jorge Fastlicht, DDS, MS (Mexico)

Masatada Koga, DDS, PhD (Japan)

Jonathan Sandler, BDS, MSC, FDS RCPS,

MOrth RCS (England)

Georges L.S. Skinazi, DDS, DSO, DCD

(France)

MANAGING EDITOR

David S. Vogels III

ASSISTANT EDITOR

Wendy L. Osterman

BUSINESS MANAGER

Lynn M. Bollinger

CIRCULATION MANAGER

Carol S. Varsos

GRAPHIC DESIGNER

Jennifer Johnson

The material in each issue of JCO is protected by copyright. Instructions and fees for copying articles from JCO are available from the Copyright Clearance Center, (978) 750-8400; www.copyright.com.

Address all other communications to *Journal of Clinical Orthodontics*, 1828 Pearl St., Boulder, CO 80302. Phone: (303) 443-1720; fax: (303) 443-9356; e-mail: info@jco-online.com. Subscription rates: INDIVIDUALS—U.S.A.: \$220 for one year, \$390 for two years; Canada: \$260 for one year, \$465 for two years; all other countries: \$315 for one year, \$545 for two years. INSTITUTIONS—U.S.A.: \$310 for one year, \$540 for two years; Canada: \$345 for one year, \$620 for two years; all other countries: \$390 for one year, \$705 for two years. STUDENTS—U.S.A.: \$110 for one year. SINGLE COPY—\$21 U.S.A.; \$28 all other countries. All orders must be accompanied by payment in full, in U.S. Funds drawn on a major U.S. bank only.

THE EDITOR'S CORNER

Surgery-First Orthognathics

Some of the most challenging, and yet rewarding, cases that orthodontists face are those in which the only way to achieve a suitable outcome is through a combination of orthodontic treatment and orthognathic surgery. In such a case, the discrepancy between the maxilla and the mandible is so great that it cannot be overcome through mechanical approaches such as headgear, function regulators, or mandibular propulsor appliances. Efforts to treat the malocclusion through a “camouflage” approach involving selective extractions and overretraction or -protraction of the anterior dentition generally result in a compromised profile. The occlusion may be acceptable, but the patient's appearance will leave much to be desired. In my practice, once or twice a year, an adult patient comes to me seeking profile improvement after having been treated for a severe Class II or Class III as an adolescent. The only remedy is a presurgical phase of orthodontics in which the main goal is to undo the camouflage treatment that was intentionally performed 10-15 years earlier. Such a case is extraordinarily difficult, and the extent of the surgery required is significantly greater than if the case had been treated surgically in the first place. An augmentation genioplasty or similar procedure is often needed to provide the patient with an acceptable profile.

Generally speaking, a case is treated by camouflage techniques rather than surgical-orthodontics because the patient does not want surgery. The reasons for this are obvious and understandable. Nobody really *wants* to undergo a potentially life-threatening surgery under general anesthesia, followed by a painful recovery period that could last several months. And with more and more insurance companies declining to cover orthognathic surgery, many patients simply cannot afford the procedures. Orthodontists are genuinely caring doctors who want to help their patients as best they can. Saying “no” when a patient asks to be treated without surgery can be extremely difficult. Over the years, however, I have learned that if surgery is really indicated, either it should be done or the case should not be treated. It took me quite a while, but I final-

ly learned to say “no” to even the most persistent patients. As a result, I have been treating an increasing number of cases surgically compared to my early years in practice. It can still be troublesome, and potentially dangerous, when a patient initially agrees to a presurgical phase of orthodontics, then backs out as the date of the surgery approaches. At that point, a suitable outcome is almost impossible to achieve. I've committed the better part of two years to decompensating the dentition and setting up the occlusion, and the resulting tooth positions are usually far from where they would have been if the original treatment plan had been nonsurgical.

Traditional surgical-orthodontic treatment has involved a presurgical orthodontic phase in which the teeth are positioned appropriately relative to their own arches. Crowding can be addressed through extractions or reproximation as indicated. Vertically, the teeth are leveled to a flat occlusal plane, again relative to their own arches; it is not uncommon for presurgical cases to have two occlusal planes, one maxillary and one mandibular. Malrotations and malalignments are addressed so that when the surgeon corrects the underlying skeletal base, the resulting occlusion facilitates proper positioning of the jaws, and the surgeon can use that occlusion as an index prior to intermaxillary fixation. Following surgery, only minor orthodontic finishing is needed to idealize the occlusion and esthetic appearance.

Many cases have been treated successfully with this approach, but when a patient refuses surgery after all the preparations have been made, the results can be catastrophic. The orthodontist is left in a precarious position: do we stop treatment and remove the braces even though the final occlusion is wrong, or do we try to move the

teeth back to their original positions? Under the first choice, the patient has straight teeth, but an entirely unacceptable occlusion and function. With the second option, the patient will need another two or three years of “round-tripping”, which more often than not results in external apical root resorption. How do we overcome this dilemma?

The “surgery first” approach has been proposed by a number of orthodontists and oral surgeons over the years—in fact, there was a heated debate over the sequence of treatment in the early years of orthognathic surgery. The vast majority of orthognathic teams have settled on the orthodontics-first approach, primarily because of the ability to achieve a close approximation of the final occlusion in the presurgical phase. There is no good solution for the patient who backs out of surgery at the last minute. But that situation may be about to change.

In this issue of JCO, Drs. Nagasaka, Sugawara, Kawamura, and Nanda present a convincing surgery-first method that has been made possible by the development of temporary anchorage devices. Careful model surgery and fabrication of intra- and post-operative occlusal splints based on these models eliminate the need for direct dental indexing. The results shown by these authors demonstrate entirely acceptable occlusal and esthetic outcomes, while completely eliminating the possibility of a patient refusing surgery following presurgical orthodontic preparation. The authors document a number of other decisive advantages of the surgery-first approach. The technique they present may well represent a paradigm shift in surgical-orthodontic treatment.

RGK