©2013 JCO, Inc.
May not be distributed without permission.
www.jco-online.com

EDITOR
Robert G. Keim, DDS, EdD, PhD

SENIOR EDITOR
Eugene L. Gottlieb, DDS

ASSOCIATE EDITORS
Birte Melsen, DDS, DO (Aarhus, Denmark)
Ravindra Nanda, BDS, MDS, PhD (Farmington, CT)
John J. Sheridan, DDS, MSD (Jacksonville, FL)
Peter M. Sinclair, DDS, MSD (Los Angeles, CA)
Bjorn U. Zachrisson, DDS, MSD, PhD (Oslo, Norway)

TECHNOLOGY EDITOR
W. Ronald Redmond, DDS, MS (San Clemente, CA)

CONTRIBUTING EDITORS
R.G. Alexander, DDS, MSD (Arlington, TX)
Jeff Berger, BDS, DO (Windsor, Canada)
S. Jay Bowman, DMD, MSD (Portage, MI)
Robert L. Boyd, DDS, MEd (San Francisco, CA)
Vittorio Cacciafesta, DDS, MSC, PhD (Milan, Italy)
José Carrière, DDS, MD, PhD (Barcelona, Spain)
Jorge Fastlicht, DDS, MS (Mexico City, Mexico)
John W. Graham, DDS, MD (Litchfield Park, AZ)
Robert S. Haeger, DDS, MS (Kent, WA)
Warren Hamula, DDS, MSD (Monument, CO)
Masatada Koga, DDS, PhD (Tokyo, Japan)
Neal D. Kravitz, DMD, MS (South Riding, VA)
Björn Ludwig, DMD, MSD (Traben-Trarbach, Germany)
James Mah, DDS, MS, DMS (Los Angeles, CA)
Richard P. McLaughlin, DDS (San Diego, CA)
James A. McNamara, DDS, PhD (Ann Arbor, MI)
Elliott M. Moskowitz, DDS, MS (New York, NY)
Jonathan Sandler, BDS, MSC, FDS RCPS, MOrth RCS (Chesterfield, United Kingdom)
Sarah C. Shoaf, DDS, MEd, MS (Winston-Salem, NC)
Georges L.S. Skinazi, DDS, DSO, DCD (Paris, France)
Michael L. Swartz, DDS (Encino, CA)
Flavio Uribe, DDS, MDS (Farmington, CT)

EXECUTIVE EDITOR
David S. Vogels III

MANAGING EDITOR
Wendy L. Osterman

EDITORIAL ASSISTANT
Heidi Reese

BUSINESS MANAGER
Lynn M. Bollinger

CIRCULATION MANAGER
Carol S. Varsos

GRAPHIC DESIGNER
Jennifer Johnson

Address all 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. See our website at www.jco-online.com.

THE EDITOR'S CORNER

The Challenge of Asymmetry

Malocclusions are typically considered with respect to a particular facial plane—sagittal, frontal (vertical), or transverse. The Angle classification, for example, refers strictly to the sagittal plane. "High"- or "low"-angle designations are related to the vertical dimension. Crossbites are generally regarded as transverse problems. But though any malocclusion is undoubtedly an aberration from normal development in all three planes of space, none presents so dramatic a set of problems as facial asymmetry does.

Facial asymmetry significantly affects the patient's masticatory efficiency, frequently resulting in bilaterally unequal stress distribution on the TMJs with potentially debilitating consequences. The lack of symmetry in both masticatory mechanics and terminal occlusion generally induces unequal wear on the occlusal surfaces, as manifested in severe wear facets and traumatic occlusion. If the condition is left untreated, the patient can almost count on at least one round of expensive and uncomfortable full-mouth restorative occlusal rehabilitation as an adult. In addition, facial impairment resulting from asymmetry can range from mild midline discrepancies detectable only by the trained eye to severe, socially crippling deformities.

The specific etiology of facial asymmetry is difficult to determine. Unless the asymmetry results from a traumatic event such as a car accident, the condition is usually described as "developmental". Among other possible factors, intrauterine molding has been recognized for centuries as a cause of asymmetrical facial deformities, some of which are rather dramatic. The Milwaukee brace, an orthopedic device used to treat spinal scoliosis by means of a pad pushing against the chin, has long been implicated in certain malocclusions that manifest primarily as asymmetries. Based on an extensive systematic review of the literature, a team of Italian authors concluded that "there is plausible evidence for an increased prevalence of unilateral Angle Class II malocclusions associated with scoliosis, and an increased risk of lateral crossbite [and] midline deviation in children affected by scoliosis. Also, documentation of associations between reduced range of lateral

© 2013 JCO, Inc.

movements and scoliosis seem convincing."*

Regardless of the etiology, treatment of facial asymmetry remains a formidable challenge for the orthodontist. In cases with little remaining facial growth, options for treating all but the most minor asymmetries are limited to orthodontics in conjunction with at least one orthognathic surgery and, not infrequently, several surgical interventions. The orthodontist has many more alternatives in growing patients, and this is where functional appliances come into their own. Bite blocks can be applied differentially to effect asymmetrical intrusion of specific quadrants for correction of unilateral vertical deformities and their resultant midline discrepancies and gonial deviations. I remember being rather skeptical when this approach was presented in my specialty training program—and being even more surprised to see just how effective the asymmetrical bite-block therapy turned out to be. Similarly, vestibular screens, such as those on Fränkel appliances and differential activators, and asymmetrical mandibular-propulsion devices like a unilateral Herbst can be applied to correct asymmetrical growth patterns. Once the underlying skeletal deformity has been addressed through differential growth, comprehensive orthodontic treatment can be used to finalize the occlusion.

In this issue of JCO, Drs. Dolly Patel, Amit Bhattacharya, and Ramesh Goyal present an interesting case in which a moderate-to-severe facial asymmetry and compound malocclusion is treated non-surgically using a sequence of Twin Blocks and full fixed appliances with bite blocks. Considering that no surgery was involved, the facial and occlusal outcomes are remarkable.

RGK

*Saccucci, M.; Tettamanti, L.: Mummolo, S.; Polimeni, A.; Festa, F.; Salini, V.; and Tecco, S.: Scoliosis and dental occlusion: A review of the literature, Scoliosis 6:15, 2011.

The **2013 JCO Orthodontic Practice Study** will be the first in which U.S. orthodontists will be able to enter their responses, securely and anonymously, via an online questionnaire. It will not only be easier to complete, but faster and more accurate to analyze. Watch your inbox and mailbox in the spring for instructions on how to complete the online form (or how to print out and mail a paper questionnaire); a link will also be provided on the JCO homepage at www.jco-online.com. Results will be published, as usual, in a series of JCO articles in the fall.