AAO brings it to Philly

Hot educational topics and a wide array of ortho offerings keeps annual meeting interesting

By Sierra Rendon, Managing Editor

Thousands of orthodontists and orthodontic team members traveled to Philadelphia in early May to take part in the various educational and social offerings at the American Association of Orthodontists 113th annual meeting.

The week’s session offered an extensive list of clinical and practice management sessions, feature speaker sessions, oral research abstract presentations, table clinics and much more to fulfill attendees’ educational needs.

*See AAO, page 10*
Relapse of mandibular anterior crowding occurs in many well-treated cases, where they had bicuspid extraction, non-extraction treatment, third molar removal, non-removal or agenesis. Why?

Is it related to (a) form and function, (b) tooth-mass issues, (c) occlusion, (d) temporal mandibular relationship, (e) arch length discrepancy, (f) heredity, (g) orofacial musculature, (h) intra-oral forces, (i) extraoral forces or (j) oral habits? Or is it a combination of all the above?

The literature is filled with quality research studies attempting to discover answers to why relapse occurs, and despite decades of research, lower anterior crowding is still unpredictable (p. 91).

Form and function certainly underlie growth and development in the craniofacial skeleton and the role that the biological environment plays. According to Carlson (1999), the "form-function" principle of craniofacial biology in general was attractive but primarily to account for the factors that may have influenced broad morphological variation and change associated with the evolution of the whole complex. Carlson added that the form-function principle is much less effective in explaining variations of craniofacial form, growth and treatment outcomes associated with causes of skeletal disarrangements and misclusions.

So where does the discussion of lower incisor crowding end? Is the problem multifactorial, a product of improper orthodontic treatment modalities (or techniques), form vs. function, or does genetics play a large part in creating or solving the problem?

We can go on and on discussing virtues of the many possibilities and causative factors involved with postretention relapse of lower incisor crowding, but here we are in the 21st century and cannot provide an absolute answer to the riddle of posttreatment stability. It is still an important objective but also still a scar of orthodontics.

Answers may never be absolutely identified, which, of course, begs consideration for some form of indefinite retribution in almost all cases. However, we shouldn't feel totally alone with regard to our knowledge (or lack of knowledge) for an absolute answer to why relapse of postretention tooth movement occurs because, according to our medical colleagues at the Mayo Clinic (n.d.), even years later, we have found that extraction therapy with the removal of four first premolars as a product of multifactorial, a product of improper orthodontic treatment modalities (or techniques), form vs. function, or does genetics play a large part in creating or solving the problem?

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A look at the causes of malocclusion

By Dr. Rohan Wijey, BOralH, Grad Dip Dent (Griffith)

Debate on the causes of malocclusion has been raging since the genesis of the orthodontic science, but has the answer already been found?

Various factions in the orthodontic tradition have declared the influence of both environmental and genetic determinants in malocclusion. Common consensus regards tooth position to be more environmentally influenced and skeletal development more genetically.

Genetic factors
Lauc et al (2003) claim that genetic factors are significant in malocclusion, citing a number of studies of twins. However, sibling genetic correlations are intrinsically fallacious in that they do not consider the influence of shared environments, which Garn et al (1979) have termed the “co-habitational effect.”

Nonetheless, certain traits do seem to be characteristic among family members, and a possible explanation is that all animals seem to inherit certain muscular functions; Wiley (1962) describes the mating ritual of the three-spined stickleback, stating “the pattern and sequence of these movements is just as much a part of the genetic make-up of the fish as its body shape.”

Epidemiological studies of malocclusion show it does not follow Mendelian laws of inheritance. Mew (1986) cites the example of sickle cell anaemia, which provides near immunity to malaria. It has become endemic in populations where it is an asset for survival, and it displays a progressive familial and geographic spread.

Malocclusion, however, has shown no type of progressive spread, with every permutation found in every corner of the globe. An evolutionary change of this magnitude would also require millions of years, not one generation, and furthermore what genetic advantage has malocclusion provided for this supposed evolutionary change to materialize?

The weight of the evidence, be it from the genetic or environmental school, seems to rest with muscle dysfunction being the cause of malocclusion.

Environmental factors
Evidence for environmental causes is formidable. Weiland et al (1997) compared skulls from 19th century Austrian males with their contemporaries, finding that change in diet ensured the latter displayed significantly higher malocclusion scores.

Corruccini and Lee (1984) reported that malocclusion was significantly worse in Chinese children born in the United Kingdom compared to their immigrant parents, raised in less developed areas. Because genetic factors remained unchanged, the malocclusion in the offspring was attributed to diet, premature deciduous tooth loss from caries and oral respiration.

Corruccini and Beecher (1981, 1983, 1984) have also shown that a soft diet significantly increases dental and skeletal malocclusions in rats, macaques and primates. This is most likely because of less toxicity in muscles of mastication, resulting in compensatory overactivity in muscles of facial expression.

Perhaps most telling has been Harvold’s series of experiments on primates in which induced oral respiration caused a range of malocclusions but all included increased face height, steeper mandibular plane and larger gonial angle — in short, skeletal and dental discrepancies. Harvold’s summation was that oral respiration was the trigger factor, but it is “deviant muscle recruitment” that directly causes maldevelopment.

The weight of the evidence, be it from the genetic or environmental school, seems to rest with muscle dysfunction being the cause of malocclusion.

Texture and nutritional value of diet has been shown to have an impact on toxicity of facial muscles, oral respiration causes “deviant muscle recruitment” and even from the genetic standpoint, the animal kingdom shows a marked tendency for muscle function (and dysfunction) to be inherited.

Although Begg believed that this environmental factor caused dental crowding...
ing his theory was predicated on the belief that skeletal form is inherited and unmalleable.

Curruccini (1990), however, discredited this research and recognized that Begg’s own figures render his theory redundant because both crowding and attrition increase with age.

Despite being roundly refuted, Begg’s assertion still serves as the rationale and justification for orthodontists to shorten dental arches via extractions to this day.

Case study
This 13-year-old girl’s profile (Figs. 1a–1d) shows a severely underdeveloped mandible, with a subsequent overbite. The strain of the mentalis muscle also betrays a “reverse swallow” with mentalis activity, which is the cause of this skeletal malocclusion.

After six months of myofunctional appliance use and myofunctional therapy, the release of muscle tension has allowed the mandible to translate anteriorly, with seemingly spontaneous lower dental alignment also a happy bonus (Figs. 2a–2d).

In spite of the evidence, the industry holds the concept of muscular causes of malocclusion at arm’s length. Because when it is acknowledged, then the moral imperative for big changes will be inescapable.

That time is now.

References

About the author
Dr. Rohan Wijey works for Myofunctional Research Company (MRC) on the Gold Coast, Australia. He practices myofunctional orthodontics at its clinical arm, MRC Clinics, and teaches dentists and orthodontists from around the world about early intervention and the MRC myofunctional orthodontic appliances.

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Boston’s Yankee Dental Congress expands on team-development day

28,000 expected at 2014 gathering

Organizers of the 2014 Yankee Dental Congress invite dental professionals to join 28,000 fellow professionals from Jan. 29 to Feb. 2 at the Boston Convention & Exhibition Center. With a general theme centered on the concept of overall health starting with oral health, the YDC meeting offers the chance to explore and discover best practices, products and resources to improve your practice, increase your knowledge and better serve your patients.

Organizers describe Yankee Dental Congress 2014 as being the best opportunity in New England for every member of the dental practice to participate in a wide variety of programs. YDC 2014 highlights include:

• **The Ritz-Carlton Leadership Center** — Back by popular demand, this program promotes performance and practice excellence by developing your leadership skills and creating the best possible service for your patients. Courses include “The Fire Within — Igniting Passion for Ritz-Carlton Performance Excellence,” and “Legendary Service with a Smile,” both presented by Jennifer Blackmon.

• **Hands-on cadaver programs** — This unique opportunity enables participants to attend hands-on courses using cadavers while exploring topics that cover areas such as anesthesia, crown lengthening and anatomy.

• **“Evolutionary Dentistry”** — Hear about the research and activities at the Manot Cave Dig in Israel and discuss the relationship of evolutionary biology to modern dental problems in a session led by Mark Hans, DDS, and Bruce Latimer, PhD.

• **The Pankey Institute: Update 2014** — Discover new techniques and innovative approaches in treatment planning that will have a valuable impact on your practice. The series includes three courses featuring speakers Greggory Di Lauri, DDS, Matthew Messina, DDS, and Kenneth Myers, DDS.

• **“Master the Skills of Marketing Your Practice in One Day”** — A one-day symposium designed to help expand your practice with the power of marketing. Courses include “High Energy Marketing to Explode Your New Patient Numbers,” “Secrets of Social Media Success and Online Marketing,” “Get Noticed, Get Booked, and Grow Your Practice” and “Best Practices for Leveraging Social Media to Engage Patients.”

• **Dental Team Playbook: Strategies for Success (an expansion on the popular team-development day)** — Your entire dental team can benefit from this one-day program with courses tailored to dental assistants, hygienists and office personnel. Team members can learn from experts in their respective fields. Presenters include Lois Banta, Amy Kirsch, RDH, Shannon Pace Brinker, CDA, Diane Peterson, RDH, and Anastasia Turchetta, RDH.

• **Social media hot spot** — Learn how effectively utilizing social media such as Facebook, Instagram, LinkedIn and Twitter can help improve practice performance by drawing new patients in and keeping current patients connected to your dental practice.

For more information, please visit www.yankeedental.com.

(Source: Yankee Dental Congress)
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To spice things up, the AAO offered social activities each day, such as a Fun Run & Walk or an AAO Foundation Breakfast to give honor to key volunteers for their work within the AAO.


Staff sessions included a range of topics from orthodontic digital photography, staff training, risk management, infection prevention, fee collection and more.

The AAO also had its popular featured speaker series, which included a session by best-selling author Dr. Barry Sears. Sears’ presentation, “Why We Gain Weight, Get Sick and Age Faster,” explored the changes in the American diet in the last 40 years that have turned on ancient inflammatory genes that are the underlying cause of our obesity and health-care crisis.

He said the insidious aspect of this increased inflammation is that it is below the perception of pain, which means you ignore its presence until there is enough organ damage that we call it chronic disease. Only by understanding the dietary causes of this epidemic can you then establish a dietary program to reverse the inflammatory damage being caused by seemingly minor changes in the human diet, he explained.

For orthodontists or team members who came to the show looking to stock up on supplies or looking for fun new products to bring home to the office, the exhibit hall was brimming with new technology and other treats.

Here is a sampling of the hundreds of unique products, free samples and fun treats that were available at AAO attendees in the exhibit hall:

• BracketEars are a fun way to match your braces to your earrings. They are little earrings shaped like a bracket, and with multi-colored elastic packs, you can match them to the color in your mouth! This brand new accessory is also available at Amazon.com.

• To spice up the day, attendees could stop by the circus-like booth from OrthoBanc where folks were “getting silly in Philly!” The booth had complimentary scone-cones and cotton candy for attendees to enjoy while they let OrthoBanc explain how it can simplify your account management.

• Want to help your patients floss more often? Let them try FlossFish! FlossFish uses regular dental floss and goes under the wire and between the brackets so that users can floss with braces on without the fuss of using floss threaders.

• For clinicians who have a few patients playing on sports teams, the TotalGard booth was displaying its new swirl-colored mouthguards. TotalGard offers sports mouthguards, Class II activating appliance mouthguards and StressGard II, a comfortable easy-fit night guard for TMI pain, teeth clenching and grinding.

• Orthodontists who have been considering clear aligners could visit the ClearCorrect booth to hear more about its many options. Dr. Willis Pumphrey, founder of ClearCorrect, said he introduced ClearCorrect to keep clear aligner therapy simply, friendly and affordable, and he said you’ll save about 40 percent by using his company’s product.

• Another fun way to help your patients show off their style is with Braced-lets. These colorful bracelets — made with actual braces — were created and designed by orthodontists Dr. Marc Lemchen and Dr. Jennifer Salzer along with jewelry designer Lisa Salzer of Lulu Frost.

Next year’s AAO annual meeting will take place April 25–29 in New Orleans.
Henry Schein introduces new line of Acclean Orthodontic Toothbrushes

Brushes offer ‘thorough hygiene experience’

Henry Schein introduces a new line of double-ended Acclean® orthodontic toothbrushes with an interdental brush that removes debris between braces, teeth and hard-to-reach areas. The V-shaped, oval-trimmed brush head provides better access to posterior teeth with the help of soft, easy-to-hold handle grips. The rounded, diamond-polished bristles made of soft DuPont™ Tynex® natural filament offer gentle, effective cleaning around bands, wires, brackets, implants, and gingivae. Acclean Orthodontic toothbrushes come in assorted colors and are available in a 12-count box.

Henry Schein is the exclusive distributor of Henry Schein Brand products. For additional information, please contact Henry Schein Dental at (800) 372-4346 (from 8 a.m. to 9 a.m. EDT) or visit the website at www.henryscheindental.com.

New technology helps improve 3-D images

Gendex introduces Scatter Reduction Technology to deliver a new level of clarity and details

Gendex introduces SRT™, Scatter Reduction Technology, to its award-winning GXDP-700™ cone-beam 3-D system. This new feature allows clinicians to reduce artifacts caused by metal or radio-opaque objects, such as restorations, endodontic filling materials and implant posts. The use of SRT image optimization technology delivers 3-D scans with higher clarity and detail around scatter-generating material. SRT represents a significant aid when 3-D scans are required for a variety of procedures, from endodontic to restorative and the post-surgical assessment of implant sites.

“We continue to make significant investments in research and development to bring new, meaningful innovations to the market,” says Mike Bosha, senior product manager for Gendex. “Our proprietary SRT technology further enhances the diagnostic capabilities of the modular GXDP-700 Series.”

The introduction of SRT to the GXDP-700 platform aligns with the Gendex design philosophy focused on delivering innovations with clinicians and patients in mind.

The activation of SRT is simple. When a scan is prescribed near a known area of scatter-generating material, the user needs only to select the SRT button from the GXDP-700 touchscreen interface.

About Gendex Dental Systems

Gendex offers a wide variety of comprehensive digital imaging solutions for both general dentists and specialists. The company’s history in continuing innovation, along with a dedication to delivering products that exceed the needs of dental professionals, has earned Gendex recognition as a global leader, according to the company.

Learn more about the full line of Gendex products at www.gendex.com.

Ormco unveils ‘Damon Smile’

Ormco Corp., a leading manufacturer and provider of advanced orthodontic technology and services, has introduced Damon® Smile, the new consumer-facing name for the company’s flagship product, the Damon® System.

The rebranding approach is part of Ormco’s mission to help orthodontists achieve their clinical and practice management objectives, as the new name enhances the consumer appeal of the Damon System and aids with increasing patient starts.

“Ormco is committed to driving more patients into our customers’ doors. The new Damon Smile branding further advances our efforts to elevate consumer awareness around the remarkable advantages of orthodontic treatment with the same clinically-proven Damon System,” said Vicente Reynal, president of Ormco.

“The word ‘smile’ is not only relatable, it builds an emotional connection among patients and we’re confident our doctors will be able to capitalize on this connection when integrating the Damon Smile brand into their consultation and practice marketing strategies.”

The Damon System is an orthodontic treatment that uses low-friction passive self-ligating brackets, high-tech light-force archwires and minimally invasive protocols for patient results. Damon Clear™ is a virtually invisible option — ideal for today’s image-conscious adults and teens — that offers clear brackets for the upper and lower arches.

More than 3 million patients have received orthodontic treatment with the Damon System.

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