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THE EDITOR'S CORNER

Orthodontic Megatrends

The AAO annual session is always one of the highlights of my year. Outside of Christmas and Thanksgiving, no other event generates as much anticipation for me as the Big Meeting every spring. The venues are always enjoyable—Honolulu, Orlando, and San Francisco all come to mind—but I do believe I would be just as excited no matter where the meeting was held. The technical exhibits, the scientific presentations, the tours, the staff activities, the social events—even the political happenings—are all a draw for me. The common thread that ties it all together is the opportunity to meet face-to-face with old friends and colleagues, dating back to my days in dental school.

It would be difficult for me to pick my favorite aspect of the annual session, but if I had to, I would probably settle on the opportunity it provides to keep up with what is new and happening in the profession. Of course, there are always the discussions of vertical dimension, orthodontic faculty shortages, effective staff communication, and the evils of relapse, but in each annual session, certain megatrends (to borrow the title of the book by John Naisbitt) come to the fore. This year in San Francisco, it seemed to me that there were three major topics boding change for the future: three-dimensional imaging, endosseous skeletal anchorage, and self-ligation.

Although 3-D imaging has been on the scene for awhile, it has now developed to the point that we can expect it to replace two-dimensional cephalometry in the next few years. In the past, there have been several impediments to the acceptance of 3-D technology. The first has been cost: The machines represent capital investments in the hundreds of thousands of dollars, with minimal expectation for an immediate return on investment. Now, however, several manufacturers have entered the market, and we can expect that the competition will drive prices down and make the imaging devices affordable for many practitioners. Even more likely is that regional imaging centers owned by syndicates of doctors or commercial outfits will spread the capital investment out by charging fees to

multiple users. The second roadblock has been the time and personnel costs involved in converting the digital data into readable, measurable, clinically useful images that will be of some diagnostic benefit to the referring orthodontist. With imminent improvements in both hardware and software, we seem to be on the verge of realistic, time-saving solutions. The last big impediment has been the age-old problem of resistance to change. Orthodontists are used to looking at two-dimensional cephs and panos, and they have become expert diagnosticians with those radiographs. Why spend the time and money to learn a new technology? The answer is simple: 3-D is better. It provides a more accurate representation of the anatomical reality in each patient. We all spend hours in dental school learning about radiographic distortion, magnification, and parallax. Three-dimensional imaging eliminates those problems. One of the silliest questions that came up in a discussion at the annual meeting concerned how to go about compressing a 3-D image into an old-fashioned, two-dimensional ceph. That's forcing conventional logic on technological advancement. Instead, we need to be establishing normative three-dimensional data bases. As an old dog myself, I can appreciate the reluctance of many others to learn new tricks—but the time has come.

Endosseous anchorage has been a frequent subject in this journal over the last five years. Many new devices and applications were presented at the annual session, and it finally appears that mini-implants are becoming solutions in search of problems, rather than the other way around. One especially promising technique that I saw was the placement of three or more mini-screws high in the buccal vestibule, one on each

side and one in the area of the anterior nasal spine. A heavy round wire is ligated circumferentially around the upper arch, near the cemento-enamel junction, and inserted into headgear tubes at each distal end. Elastics are then applied to this base wire, and the clinical result is an intrusion of the entire maxillary complex. It virtually eliminates the need for Le Fort I osteotomies for maxillary impaction in the treatment of vertical excess. I hope to receive one or more articles on this method in the near future. In addition, there were applications that addressed just about every anchorage problem that has plagued orthodontists since the inception of the specialty. Like three-dimensional imaging, endosseous anchorage is in need of scientific standardization; once that has been accomplished, and the inevitable resistance to change has been overcome, we can expect it to become a useful addition to our armamentarium.

The last megatrend has been with us for a while, but keeps resurfacing in different guises. Self-ligating brackets are now being manufactured by a number of companies, in variations ranging from compressible nickel titanium gates to C-clips. To hear some speakers, using any particular self-ligating bracket can change your practice life forever. Now, I've always been a little skeptical of claims of life-altering experiences, but the self-ligating systems I have actually tried seem to work quite well. As with 3-D imaging and endosseous anchorage, however, we need a good scientific basis for the manufacturers' claims before we accept them at face value. Again, the future is ripe with possibility.

My thanks to everyone involved in planning this year's annual session. I'm already looking forward to next year in New Orleans. RGK