THE EDITOR'S CORNER

Stationary Anchorage

There is no more important subject in orthodontics than anchorage. With every application of force, consideration must be given not only to its magnitude and direction, but also to its antagonist. For every action there is an equal and opposite reaction. Any time there is an imbalance of force over counterforce, unwanted tooth movement will occur. When anchorage is neglected in indiscriminate Class II mechanics, proclination of the lower anterior teeth results.

Sometimes tooth-to-tooth anchorage may suffice, as in pitting one tooth against a group of teeth. Sometimes extraoral anchorage provides a sufficient counterforce. And sometimes a Nance appliance offers satisfactory anchorage. Sometimes. But sometimes we may be dealing with a flat palate and the Nance appliance does not realize palatal anchorage, but is essentially seeking anchorage on the upper anterior teeth. Sometimes—often, in fact—there is little or no cooperation in wearing an extraoral appliance and therefore little or no anchorage from that source. Orthodontic anchorage should not be a sometime thing.

I am reminded of Tweed's habit of asking all his course participants what they hoped to get out of the course. My answer was one word: control. He liked that, because his mechanics were greatly concerned with analyzing and setting up anchorage to resist the undesirable effects of heavy Class II elastics. He was greatly concerned with control of tooth movement, as we all are. Now, a relatively recent development—stationary anchorage, skeletally based—eliminates one of the uncertainties of orthodontic tooth movement by offering absolute control over potentially undesirable countermovements.

To my knowledge, Dr. Tom Creekmore was the first orthodontist to conceive of and successfully use such a device clinically.[1] Since then, JCO has published a number of articles on skeletal anchorage using implants, onplants, and microscrews.[2-16] Of these, the microscrew is the simplest and perhaps the best, at least at present. Applications have run the gamut from Class II mechanics

to distal movement of upper posterior teeth, anterior and molar intrusion and extrusion, correction of bimaxillary protrusion, and molar uprighting. Most of these cases have or approach maximum anchorage requirements, for which the various devices provide anchorage that is neither toothborne nor compliance-dependent. Care must be given to selecting the site of screw insertion, and a simple surgical procedure may be needed for screw placement. The screws appear to have minimal problems, however, other than occasional tissue inflammation and occasional loosening. Patients and orthodontists alike should welcome the assurance of a more predictable treatment result.

There has been a growing interest in evidence-based orthodontic procedures—in other words, the best ways to achieve orthodontic tooth movement as established by valid clinical studies. Because of the number of independent variables that are involved in orthodontic treatment, it may never be possible to identify evidence-based optimum methods for all orthodontic procedures. But in skeletal anchorage, we have a sure bet. Although the gold standard of research is the randomized clinical trial, it is a virtual certainty what university research will show. Meanwhile, clinical orthodontists should move toward making the microscrew a standard part of their armamentarium. ELG

REFERENCES

1. Creekmore, T.D. and Eklund, M.K.: The possibility of skeletal anchorage, J. Clin. Orthod. 17:266-269, 1983.
2. Bousquet, F.; Bousquet, P.; Mauran, G.; and Parguel, P.: Use of an impacted post for anchorage, J. Clin. Orthod. 30:261-265, 1996.
3. Kanomi, R.: Mini-implant for orthodontic anchorage, J. Clin. Orthod. 31:763-767, 1997.
4. Melsen, B.; Petersen, J.K.; and Costa, A.: Zygomatic ligatures: An alternative form of maxillary anchorage, J. Clin. Orthod. 32:154-158, 1998.
5. Mazzocchi, A.R. and Bernini, S.: Osseointegrated implants for maximum orthodontic anchorage, J. Clin. Orthod. 32:412-415, 1998.
6. Mannchen, R.: A new supraconstruction for palatal orthodontic implants, J. Clin. Orthod. 33:373-380, 1999.
7. Celenza, F. and Hochman, M.N.: Absolute anchorage in orthodontics: Direct and indirect implant-assisted modalities, J. Clin. Orthod. 34:397-402, 2000.
8. Roberts, W.E.; Nelson, C.L.; and Goodacre, C.J.: Rigid implant anchorage to close a mandibular molar extraction site, J. Clin. Orthod. 28:693-704, 2000.
9. Gray, J.B. and Smith, R.: Transitional implants for orthodontic anchorage, J. Clin. Orthod. 34:659-664, 2000.
10. Park, H.S.; Bae, S.M.; Kyung, H.M.; and Sung, J.H.: Case Report: Micro-implant anchorage for treatment of skeletal Class II bialveolar protrusion, J. Clin. Orthod. 35:417-422, 2001.
11. Lee, J.S.; Park, H.S.; and Kyung, H.M.: Case Report: Micro-implant anchorage for lingual treatment of a skeletal Class II malocclusion, J. Clin. Orthod. 35:643-647, 2001.
12. Paik, C.H.; Woo, Y.J.; Kim, J.; and Park, J.U.: Use of mini-screws for intermaxillary fixation of lingual-orthodontic surgical patients, J. Clin. Orthod. 36:132-136, 2002.
13. Bae, S.M.; Park, H.S.; Kyung, H.M.; Kwon, O.W.; and Sung, J.H.: Clinical application of micro-implant anchorage, J. Clin. Orthod. 36:298-302, 2002.
14. Chung, K.R.; Kim, Y.S.; Linton, J.L.; and Lee, Y.J.: The miniplate with tube for skeletal anchorage, J. Clin. Orthod. 36:407-412, 2002.
15. Park, H.S.; Kyung, H.M.; and Sung, J.H.: A simple method of molar uprighting with micro-implant anchorage, J. Clin. Orthod. 36:592-596, 2002.
16. Kyung, S.H.; Hong, S.G.; and Park, Y.C.: Distalization of maxillary molars with a midpalatal miniscrew, J. Clin. Orthod., in press.

CORRECTION

In the article "Archwire Cinchback Made Easy" (JCO, August 2002), author Sameer Patil's degrees should have been listed as BDS, MDS. Dr. Patil is an Associate Professor, Department of Orthodontics and Dentofacial Orthopedics, Institute of Dental Sciences, Belgaum, India.