

Interactivity key to success of online journals

David L. Turpin, DDS, MSD

The Internet has recently spawned two new online magazines, *Slate* and *Pointcast*, published by Microsoft and Time-Warner, respectively. After scanning these publications, I believe some of us will eventually change our reading habits. Reading has always been one-to-one communication, but the flow of information is all in one direction, from author to reader. As the reader, you have no way of interacting with the writer. You have no opportunity to ask questions or propose alternative ideas. It seems clear to me that as our technical capacity improves, the online publication of scientific material will become commonplace only with a departure from the traditional format of journals.

Imagine this scenario. You receive your *Angle Orthodontist* online six weeks before it is actually printed. You turn first to the clinical section and note the presentation of a complex case report involving a multidisciplinary approach to treatment. Extensive diagnostic records are available to be downloaded into your computer. After studying the pretreatment records at your own work station, you propose a treatment plan. This option can then be compared with the alternative plans and the discussion of other clinicians reviewed...all at your leisure. When you have fully explored all avenues of treatment and are ready to proceed, all posttreatment records can be downloaded in time for a discussion of retention needs. Comparing the rationale for various types of retention with colleagues from all over the world might just be the most fun you'll have

while reading this issue of the journal. Believe me, studying a case report interactively will be a great learning experience compared to the passive review you now experience.

Upon returning to your online journal, you discover an original research topic of special interest. Within minutes of reading the full text of the paper you will be able to explore other links to the same subject by reviewing a wide range of additional resources. Collaborative interaction with other researchers will save time and provide access to new material.

Before shutting down the computer, you glance at the Editorial and decide to send an e-mail message, taking issue with one of the Editor's main points. This comment is combined with others to form a readers' response, which is published with the Editorial when the hardcopy is produced a month later.

These are but a few of the ways that the online publication of scientific material will not only succeed but lead to new heights in learning for the busy professional. By becoming truly interactive, the electronic publication of research findings will expand the world of science for the clinician. Simply trying to remain the same, with traditional white space and bold typeface, will not suffice on the fast lane of the Internet.

To those of you who value interactive learning experiences, I'm interested in your thoughts on this subject. You can reach me, via the Internet, at DLTurpin@aol.com.

Letters

Case Report

Orthodontics in dental reconstruction can be an adjunct or a participating discipline in comprehensive oral rehabilitation. The goal of broadening the treatment avenues of orthodontics in conjunction with implantology helps improve the quality of treatment. Consequently, we were excited to read the case report by Drs. Shellhart, Moawad, and Lake (Implants as anchorage for molar uprighting and intrusion. *Angle Orthod* 1996;66(3):169-172).

The use of implants to replace missing teeth and provide anchorage sites in compromised orthodontic patients is an important example of the powerful combination of orthodontics and implantology. Osseointegrated implants can be used to recreate a dentition that is esthetic, functional, and comfortable. The disadvantages are the number of surgical procedures involved and the amount of time required to complete treatment. A careful treatment sequence must be developed to use time effectively.

The decision to upright molars by distal tipping or by mesial root movement may be crucial in treatment planning of these cases. Wise and Kramer demonstrated how changes to the alveolar crest that result from molar uprighting can be predicted. Consequently, distal crown movement is generally more effective for correcting these types of abnormalities. Theoretically, mesial root movement and intrusion have the potential for increasing pocket depth.

Molar uprighting accompanied by proper implant placement requires a comprehensive treatment plan. Implant placement should be directed by the restorative or prosthetic plan. The postorthodontic position of the teeth must be known prior to tooth movement in order to determine the optimal position for each implant.

In the Department of Orthodontics at New York University College of Dentistry, we have been able to evaluate, from a preorthodontic perspective, considerations in postorthodontic stabilization. The new area of postorthodontic

stabilization was introduced by Celenza, Mantzikos, and Shamus. Initial variations of dentoalveolar relationships in the sagittal (length of edentulous span), vertical, and transverse (buccolingual) dimensions affect the final prosthetically driven result. In other words, if the molars are involved in significant lingual collapse in addition to mesial tipping, the treatment necessitates the inclusion of a transverse force application to upright the lower second molar in both the buccal and distal directions. Retention of the orthodontic treatment result requires that the molar abutment be stabilized in both sagittal (mesiodistal) and transverse (buccolingual) dimensions. An implant-borne prosthesis would not normally accomplish this.

We have developed a classification scheme to assist the clinician who faces a decision in interdisciplinary treatment. Factors that directly affect the decision include differences in angulation of the long axes of teeth measured in the sagittal dimension, the mesiodistal length of the edentulous span, and the presence of a mesial angular crest, commonly associated with tipped posterior teeth.

With new techniques and an increased focus on combining different treatment modalities, orthodontic treatment has become more creative and no longer remains a prisoner of consistency. Patients, therefore, receive the benefit of improved treatment options and superior esthetic results.

Theo Mantzikos, DMD
Ilan Shamus, DDS

Correction

Our attribution for a letter to the editor in the last issue of the *Angle Orthodontist* was incorrect. It should have read:

Michael Alpern, DDS, MS
Adjunct Professor of Orthodontics
College of Dentistry
Marquette University

The letter was submitted via regular mail, not the Electronic Study Club.

What's new in dentistry

As orthodontists, we are often unaware of the technical and methodological advances in other dental specialties. However, many of these new experimental developments may ultimately become accepted dental therapy and influence the diagnosis and treatment of our orthodontic patients. Therefore, as part of the dental community, we must keep abreast of current information in all areas of dentistry. The purpose of this section of The Angle Orthodontist is to provide a brief summary of what's new in dentistry.

METALLIC SCALERS DAMAGE IMPLANTS—

Most orthodontists have treated a patient who has had or will have a single tooth implant to replace a missing tooth. In some of these situations, the implant is placed before the orthodontic treatment is completed, and a titanium abutment and crown may protrude through the gingiva during the finishing stages. How should the implant surface be cleaned? If the orthodontist must remove plaque, calculus, or cement from the implant surface, what type of instrument should be used? That question was addressed in a recent article published in the *International Journal of Oral and Maxillofacial Implants* (1996;11:96-100). Researchers compared the effects of metallic, non-metallic, and sonic instrumentation on titanium abutment surfaces. Seven different types of instruments were used. The same number of strokes and the same amount of cleaning time was applied to each of the implant surfaces. The titanium surfaces were evaluated using scanning electron microscopy, and the results showed that metallic instruments created deep scratches. Plaque could accumulate in these areas and cause chronic gingival inflammation and potential bone loss. The best instruments to clean titanium were plastic curettes, especially Implicare and Implant Support Scaler. Avoid the use of metallic instruments when cleaning around titanium implant surfaces. Instead, use plastic curettes because they will not damage the titanium.

SHORT-TERM STATUS OF SINGLE-TOOTH IMPLANTS LOOKS PROMISING—

The use of Maryland Bridges to replace congenitally missing lateral incisors is decreasing. The average life of a Maryland Bridge is about 8 years. Restorative dentists are now recommending single tooth implants to replace missing lateral incisors. But how long will an implant last? Is its life expectancy better than that of a resin-bonded or conventional bridge? Now that implants have been placed for several years, new data is being published regarding the longevity of single tooth implants. A study published in the *International Journal of Oral and Maxillofacial Implants* (1996;11:311-321) looks at the stability of implants up to 8 years after placement. The sample consisted of 41 patients who had single tooth implants inserted and restored. The average age of the sample was 33 years. All implants were placed in two stages. After 8 years, mobility and bone level recordings were made. At the long-term follow-up, none of the implants showed mobility. Radiographic evaluation showed that bone loss was less than 0.5 mm during the first year. Annually thereafter, the average amount of bone loss was about 0.10 mm. However, this is still short-term data. Since these implants are often placed in young individuals, we need to know if will last for 20, 30, or 40 years. It will be interesting to look at this sample in another 15 years to determine the ultimate stability of single tooth implants.

ARTHROSCOPY VERSUS ARTHROCENTESIS: WHICH IS BETTER?

Surgery to ameliorate temporomandibular joint disorders has progressed significantly in recent years. In the past, surgical procedures involved opening the joint and capsule to remove adhesions and repair problems with the disc. In recent years, arthroscopic techniques have altered the way surgeons operate on the temporomandibular joint. Two surgical techniques are possible: arthroscopy and arthrocentesis. Arthroscopy involves lysis of adhesions and lavage or rinsing of the joint space. Arthrocentesis consists of hydraulic distention of the superior joint space. Which is better? That question was addressed in a study published in the *Journal of Oral and Maxillofacial Surgery* (1996;54:816-820). In this study, 19 subjects who had anterior disc displacement and who had previously received unsuccessful conservative treatment for their temporomandibular disorders were randomly divided into two groups: arthroscopy and arthrocentesis. Before and after the surgery, the subjects rated their symptoms using a visual analog scale. They scored the amount of opening, pain upon opening, locking of the joint, and other potential symptoms. After 6 months, the groups were compared. The results were equivocal: There were no significant differences between the surgical techniques. However, the authors may be misinterpreting their data: It is possible, in fact probable, that other factors in addition to the surgical procedure contributed to the TMJ symptoms. In addition, 6 months is a short postoperative interval. It will be interesting to compare these techniques after 5 to 10 years.

LOW DOSE ANTIBIOTICS TO TREAT PERIODONTAL DISEASE

Periodontal researchers know the cause of periodontal disease: the accumulation of specific types of bacteria within subgingival dental plaque. If these bacteria are present, and if the patient is not resistant to these strains of organisms, breakdown of the supporting structures of the periodontium can occur. In the past, antibiotics were used to combat the destruction of periodontal disease. Researchers believed that the antibiotics were only bactericidal. A study published in the *Journal of Periodontology* (1996;67:506-514) now shows that low doses

of Doxycycline have another beneficial effect in combating periodontal destruction. The sample consisted of 14 individuals who were divided into control and treatment groups. Doxycycline was given in low doses to the treatment group and the controls received a placebo. After 6 months, the treated and placebo groups had the same amount of gingival inflammation and similar plaque scores. However, sulcular depth decreased in the antibiotic group. These researchers determined that the low dose of Doxycycline was not only bactericidal, but it prevented collagenase formation as well. Collagenase is necessary to break down collagen. So, researchers have found that antibiotics have an extra beneficial effect of minimizing the breakdown of soft tissue due to build-up of plaque and bacteria. This gives periodontists another means of combating periodontal disease, especially in orthodontic patients who may be susceptible to periodontal destruction.

BITE-FORCE INCREASES AFTER JAW SURGERY

LeFort osteotomy with superior positioning of the maxilla is a common surgical procedure for patients with long facial height and lip incompetence. Prior to any orthodontic treatment, researchers have shown that patients with long facial heights have reduced masticatory abilities. Does surgery that shortens the facial height improve jaw function? That question was answered in a study published in the *Journal of Oral and Maxillofacial Surgery* (1996;54:828-837). In this study, a prospective sample of 15 female patients with vertical maxillary excess and mandibular retrognathia underwent combined maxillary and mandibular surgery. The maxilla was positioned superiorly and the mandible was lengthened. Prior to and 3 years after surgery, mandibular function was assessed. The range of mandibular motion did not change significantly. However, maximum bite force increased significantly. After surgery to shorten the face, patients had significantly stronger maximum bite force. Actually, bite force was equivalent to control patients who had normal facial heights. In conclusion, maximum bite force increases substantially after surgery that shortens facial height. Other measurements of jaw function were unchanged.