What's new in dentistry

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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.*

PERIODONTAL STATUS WORSE IN PATIENTS WITH CLEFT LIP DEFORMITIES—The incidence of cleft lip and palate deformities in the United States is about 7% of all live births. The cleft may occur bilaterally or unilaterally, and involve only the palate or extend through the alveolus and lip. These individuals generally have malocclusions requiring extensive orthodontic treatment and bone grafting. In spite of orthodontic correction, some of the teeth adjacent to the cleft may be periodontally compromised. A study published in the *Journal of Periodontology* (1990; 70:171-178) compared the periodontal health of patients with isolated cleft palate and those with complete unilateral and bilateral clefts of the palate, lip, and alveolus. The sample consisted of 30 individuals with cleft palate, 30 with complete unilateral clefts, and 20 with complete bilateral clefts of the lip, palate, and alveolus. All subjects were treated similarly during childhood and adolescence, with closure of the lip and soft palate shortly after birth, closure of the hard palate at about 6 years of age, and alveolar bone grafting at 10 years. All individuals received orthodontic therapy, and periodontal health was evaluated 1 year after debanding. The results showed that the gingival index, plaque index, mobility, and probing pocket depth around teeth adjacent to unilateral and bilateral clefts were much more compromised than in patients with isolated cleft palates. Although the authors did not give a reason for the difference, it is likely due to alterations in the anatomy of the anterior alveolus.

AGE NOT A FACTOR IN SUCCESS OF TREATING TMD—Many individuals have temporomandibular disorders that require treatment. These disorders may range from anteriorly displaced disks to osteoarthritis. These disorders may occur at any age. It seems reasonable to believe that the treatment of tempormandibular disorders would be more successful if accomplished while the patient is younger, rather than at an older age. This hypothesis was tested in a study that was published in the *Journal of Prosthetic Dentistry* (1999;81:312-317). The sample for this study consisted of 93 individuals between 20 and 30 years at age and 58 patients between 50 and 57 years of age. Both groups had temporomandibular disorders and had been treated using conservative therapies, including biofeedback, occlusal adjustment, orthodontic treatment, and occlusal splint therapy. The results were equivocal. The only difference was at the outset, with the younger group showing more pain as their initial symptom. However, the outcome of the treatment in both the younger and older populations was similar. Age did not make a difference in the treatment of TMD.

EXTENDED ANTIBIOTIC COVERAGE GREATLY REDUCES INFECTION FOLLOWING ORTHOGNATHIC SURGERY—The prophylactic use of antibiotic therapy after most general surgical procedures is well-accepted. However, the administration of antibiotics after orthognathic surgery is controversial. Some studies have shown beneficial effects with postoperative antibiotics, while other investigations question the need for routine administration of antibiotics. A recent study published in the *Journal of Oral and Maxillofacial Surgery* (1999; 57:226-230) provides new information about this controversial topic. This was a prospective, randomized, double-blind, clinical trial using a placebo. The overall sample consisted of 30 individuals. All were healthy and were undergoing orthodontic treatment prior to orthognathic surgery. In each of these patients, antibiotics were given be-

fore surgery, as an IV drip during surgery, and in another injection immediately after the surgery. Then, during the five days immediately after the surgery, 15 of the individuals received IV and intramuscular antibiotic injections. The other 15 subjects received a placebo injection. The results showed that only one person in the experimental group developed an infection after surgery. However, 60% of the individuals in the placebo group developed infections postoperatively. In conclusion, it seems that prolonged administration of antibiotics after orthognathic surgery greatly helps to reduce postoperative infection.

MEMBRANES AND SUBEPITHELIAL GRAFTS EQUIVOCAL FOR TREATING RECESSION - Occasionally, after nonextraction orthodontic treatment in some adult patients with thin gingiva, the patient may develop a dehiscence over the root of a proclined tooth. This is usually due to inadequate attached gingiva and an underlying dehiscence. Ten years ago, it was difficult to cover these roots once recession had occurred. However, today two options are available for grafting tissue over denuded roots. One procedure involves harvesting a connective tissue graft from the palate and placing it over the root. This is a highly predictable procedure, but requires two surgical sites. Another option is to place a resorbable membrane over the exposed root to avoid palatal surgery. But are the results from both procedures the same? A study published in the *Journal of Periodontology* (1999; 70:123-130) compared these two modes of root coverage. The sample consisted of 14 individuals with at least two sites that required grafting. A split-mouth design was used, and one defect was grafted with connective tissue while the other was grafted with a resorbable membrane. The sites were compared 6 months postoperatively. The results showed no differences in the amount of root coverage between these two procedures. The only difference was greater width of keratinized gingiva using connective tissue grafts. Therefore, the techniques were equivocal, and either can be used to cover denuded roots after gingival recession.

XYLITOL CHEWING GUM HAS LONG-LASTING CARIES-PREVENTING EFFECTS - Studies in the past have shown that chewing gum containing xylitol has a decay-preventing benefit. However, it had been thought that the caries-reducing effect only occurred during the time the gum was in the oral cavity. A study published in the *Journal of Dental Research* (1999; 78:797-803) shows that the effect lasts much longer than expected. In this study, 510 children with a mean age of 6 years were divided into three groups. Each group was assigned a gum with a different sweetener: sorbitol, xylitol-sorbitol mixture, and xylitol. The children were asked to chew the gum on a regular basis for 2 years. At the end of this time, the greatest caries-reducing effect was with the xylitol gum. Then, 5 years after the termination of the habitual chewing, the children were reexamined. The study showed that teeth that erupted after 1 year of gum-chewing or 2 years of habitual gum use had long-term caries risk reductions of 93% and 88%, respectively. Teeth that erupted before the gum-chewing started were not significantly affected. The authors concluded that for the greatest decay-preventing benefit, habitual xylitol gum-chewing should be started at least 1 year before permanent teeth erupt.