

What's New in Dentistry

Vincent Kokich, DDS, MSD

Randomized clinical trial shows stabilization splints highly effective for TMD. Occasionally, patients will present for orthodontic treatment with moderate to severe symptoms of TMD. Most orthodontists would be reluctant to place orthodontic appliances on these patients while they are symptomatic. Is an occlusal splint indicated for these patients? This question was answered in an article that was recently published in *Acta Odontologica Scandinavica* (60: 248–254, 2002). This investigation was a randomized, prospective clinical trial to determine the effectiveness of a flat-plane occlusal stabilization splint, compared to a control splint that simply consisted of palatal acrylic. A large sample of patients with TMD symptoms of pain, clicking, and limited opening were either assigned to the control or treatment group. Subjects were either given a stabilization or palatal splint. The subjects were asked to wear the appliances full-time for 10 weeks. At that time, the symptoms were re-evaluated. The results showed that the subjects with the stabilization splints showed a statistically significant improvement in facial pain and headache. Second, in addition, subjects with the stabilization showed improvement in the intensity of the pain in the joint area compared to a control splint. Finally, there was a decrease in the need for further TMD treatment with the use of a stabilization splint.

Older individuals have greater loss of nerve sensation after sagittal osteotomy. Sagittal osteotomy with or without genioplasty is a common surgical procedure for adult orthodontic patients with class II malocclusions. A typical complication after this surgical procedure is loss of nerve sensation for varying lengths of time. A study published in the *Journal of Oral and Maxillofacial Surgery* (60:1012–1017, 2002), evaluated whether patient age affected the incidence of neurosensory disturbance. The sample for this study consisted of 127 subjects who underwent sagittal osteotomy. The sample was divided into groups: with and without genioplasty, greater or less than 7 mm advancement, and <25 years of age, 25 to 35 years of age, and >35 years of age. Nerve sensation was evaluated before surgery, after surgery, and 2 years postoperatively. The results of this study showed that there is a significantly higher rate of neurosensory disturbance in older individuals. Also, if a genioplasty were added to the surgery, the incidence of losing nerve sensation was also greater. Finally, the amount of surgical advancement was not related to neurosensory disturbance after sagittal osteotomy.

Stress exacerbates periodontal disease. Many adults go through varying degrees of stress throughout their lifetimes. The ability to cope with stress is an important quality. A recent study published in the *Journal of Periodontology* (73:1343–1351, 2002), evaluated the effect of stress on the progression of periodontal disease in adults. The sample consisted of 89 patients with destructive periodontal disease. They were divided into either moderate or severe groups, depending on the extent of their alveolar bone loss. Then, psychological tests were given to all subjects, and their ability to cope with stress was determined by evaluating these questionnaires. Coping with stress was then related to the degree of the periodontal disease. The results showed that the stress coping behavior of periodontal patients differed from that of controls in regard to stress coping strategies. Patients with high clinical attachment loss differed significantly from patients with low and moderate clinical attachment loss regarding the application of their stress coping strategies. Patients with periodontal disease, who have inadequate stress coping behavior, will have a higher likelihood to develop worsening periodontal disease with time.

Individuals with untreated TMJ disk displacement show improvement in spontaneous chewing efficiency. Some individuals may develop a nonreducing disk displacement of their temporomandibular joint. This problem can effect an individual's chewing function. What if nothing is done to correct the disk displacement? Will chewing function continue to be affected, or will the patient accommodate the disk displacement? This question was answered in an article that was published in the *Journal of Oral and Maxillofacial Surgery* (60:867–872, 2002). The sample for this study consisted of 15 subjects with previously diagnosed anterior disk displacement. A group of 23 control subjects with no temporomandibular symptoms were used for comparison. A mandibular kinesiograph was used to evaluate the patients chewing function. Subjects were asked to chew gum on both sides, and the movement of the mandible was observed. The same observation was made after 21 months. No treatment was rendered for the disk displacement. The results of the study showed that in patients with nonreducing disk displacement of the temporomandibular joint, chewing movement initially showed deviation to the chewing side during chewing on the TMJ affected side, but no such deviation was noted during chewing on the

TMJ unaffected side. Over time, impaired chewing movement tended to improve in patients without any treatment of the disk displacement.

Periodontal disease transmitted from teeth to implants. Implants are often used to replace missing teeth in patients with periodontal disease. A study published in the *International Journal of Maxillofacial Implants* (17:696–702, 2002) evaluated whether or not pathogenic bacteria found on teeth could be transmitted to implant surfaces in the same mouth. The sample consisted of 15 subjects who had implants placed in sites where teeth had been lost due

to periodontitis. The average age of the sample was 51 years. In each subject, bacteria were harvested from around implants and teeth in the same mouth. The bacteria were identified using traditional laboratory means. The numbers of bacteria around implants and teeth were compared. The results showed that periodontal pathogens can migrate from a periodontal pocket into the saliva and thus be transmitted to the vicinity of an implant. All of the periodontal pathogens were found in varying quantities around implants and teeth. The present study has therefore supported the hypothesis that some periodontal pathogens colonizing implant sites can be transmitted from the natural teeth.