

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 is new in dentistry.

Estrogen reduces attachment loss in postmenopausal women. Many women aged 65 years suffer from osteoporosis. This problem is directly related to the lack of estrogen production in these women. Theoretically, if estrogen were given supplementally, it should reduce the amount of bone loss. But would this reduction in osteoporosis have a positive effect on periodontal attachment in these late middle-aged women? The answers to these questions were published in the *Journal of Periodontology* (1999;70:823–828). The sample for this study consisted of 59 women with moderate to advanced periodontitis. A sample of 16 control subjects with no periodontal defects was chosen for comparison. The authors compared the periodontal health of those women taking estrogen with those who were not taking any supplements. The results of this study showed conclusively that the periodontal health of those individuals taking estrogen was better than those who did not have estrogen supplements. This study has shown that estrogen supplements have a positive beneficial effect on reducing periodontitis from osteoporosis.

Surprising Results From Untreated Mucogingival Defects. Adult orthodontic patients often present for treatment with inadequate attached gingiva on the labial surfaces of the mandibular incisors. In the past, many of these patients would have had free gingival grafts placed before orthodontic therapy. But what if these defects had never been treated? Would recession inevitably occur over time? Do these individuals require grafting before orthodontic therapy? These questions were addressed in an article published in the *Journal of Periodontology* (1999;70:1174–1176). In this investigation, the original sample population consisted of 17 dental students whose periodontal health was assessed while they were in dental school. These same individuals were evaluated again 18 years later to determine if attachment loss occurred in areas with reduce attached gingiva. The results show that 19 of these sites actually showed a slight increase in the width of keratinized gingiva after 18 years. Only 7 areas showed a slight decrease, and the other 35 sites had a stable width of gingiva over time. In conclu-

sion, if a tooth will not move significantly labially during orthodontics, gingival grafting is not indicated to maintain an adequate width of gingiva.

Long-Term Studies Show That Single-Tooth Implants Are Highly Successful. Today, single-tooth implants are routinely considered to replace congenitally missing teeth in orthodontic patients. Many of these individuals are young adults, and therefore the implant must endure for many years. But are these tooth replacements successful? After all, single-tooth implants have only been used for about 10 years. A prospective study published in the *International Journal of Oral and Maxillofacial Implants* (1999;41:639–645) sheds new light on this subject. The sample for this study consisted of 461 implants placed in 127 subjects. These fixtures were placed between 1985 and 1987. They were placed in 5 different centers around the world using the same protocol. The implant survival rate, bone level, and gingival health were reassessed after 10 years. The results show that the survival rate for the maxilla is 90.2% and 93.7% for the mandible. The average bone loss over 10 years was 0.7 mm. The gingival health of the implants was excellent. In conclusion, this prospective study shows that single-tooth implants are highly successful up to 10 years after placement.

Bovine Bone Used to Regenerate Periodontal Defects in Periodontal Patients. The buzzword in periodontal therapy today is regeneration. Periodontists use either membrane or bone grafts to regenerate attachment and bone levels in patients with periodontal bone loss. The autogenous bone grafts are harvested from either the ramus, chin, calvaria, or hip of the patient; freeze-dried cadaver bone may be used as the graft material. However, an article published in the *Journal of Periodontology* (1999;70:1000–1007) reports the use of bovine bone as a grafting material in humans. The sample consisted of 25 paired bony defects in a group of patients with periodontal disease. After initial debridement of the defects, they were randomly divided into 2 groups. In one group, the control defect was covered with a membrane. In the other group, the defect was first filled

with bovine bone and then covered with a membrane. After 6 months, these areas were reevaluated. The results show that both groups had equal amounts of bone. In the future, bovine bone could be considered as a substitute for autogenous or cadaver bone in periodontal defects that require a bone graft. Further human studies will be needed to verify the results of this study.

Electric Toothbrushes Are Superior to Manual Brushing. Orthodontic bands and brackets make plaque removal more difficult. If adequate oral hygiene is not maintained during orthodontic treatment, decalcification, caries, or both may occur. Today, however, electric toothbrushes are available to assist the tooth cleaning process. Each year, new types of brushes are produced that claim to provide superior re-

sults. But are these claims true? An article in the *Journal of Periodontology* (1999;70:840–847) compared the efficacy of 2 powered toothbrushes, Rowenta and Braun. The sample for this study consisted of 60 volunteer subjects of varying ages. They were divided into 2 subgroups. One group used the Rowenta and the other used the Braun powered toothbrush. Their baseline plaque and gingival indices were measured at the start of the experiment and after 1 month. The results show that both toothbrushes produced significant decreases in the preexperimental plaque and gingival indices in both samples. There were no significant differences between the 2 powered brushes. In conclusion, this study has shown that either powered toothbrush will improve the oral hygiene of patients previously using manual toothbrushes.