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.*

PERIOSTEAL GRAFTS EFFECTIVE FOR GUIDED TISSUE REGENERATION—The repair of periodontal defects with guided tissue regeneration has become popular in recent years. Today, periodontists use various types of synthetic membranes to prevent epithelial migration into periodontal defects and allow reattachment and development of bone in former osseous defects. Although in the past, membranes had to be removed, new products have been developed that are bioabsorbable. However, these are still synthetic. A recent report in the *Journal of Periodontology* (1998;69:1203-1209) describes the use of periosteal grafts for guided tissue regeneration. In this study, 22 patients with paired periodontal defects were used as the sample. Each defect was opened and debrided. Then one was sutured and allowed to heal, while the other was covered with a periosteal graft harvested from the palate. The patients were allowed to heal for 6 months. After that time, each osseous defect was reentered and the bone level measured. The results showed that the periosteal grafts resulted in greater bone regeneration and attachment gain. In the future, perhaps researchers will compare the effectiveness of periosteal grafts and synthetic bioabsorbable grafts in the same patient.

EARLY CONTAMINATION WITH WATER WEAKENS GLASS IONOMER CEMENTS—Many orthodontists use glass ionomer cement to lute bands to teeth. This type of cement has proven very effective at creating a bond with the enamel. However, a recent study published in the *Journal of Prosthetic Dentistry* (1998;80:474-478) shows that early water contact with the setting cement may cause dissolution of the marginal portion of the exposed cement. In this laboratory study, wafers made of Fuji I and Ketac-Cem were tested by placing them in water at varying intervals (from 2 to 9 minutes) after the mixing process had started. The amount of dissolution of the wafers was compared after storage in water for 2 to 3 hours. Based on the results of these experiments, the authors concluded that glass ionomer cements do dissolve if they are exposed to water too quickly after mixing. When the cement was isolated for up to 6 minutes after initial mixing, dissolution was significantly reduced. Dissolution of Fuji I cement was more prevalent than that of Ketac-Cem. The results of this study suggest that orthodontists should try to isolate the marginal area of the band for at least 2 to 4 minutes after cementing to avoid dissolution, which could cause plaque accumulation and eventual decalcification in patients with poor oral hygiene.

QUESTIONABLE EFFECT OF LOCAL ANTIBIOTIC THERAPY ON PERIODONTAL DISEASE—The traditional means of treating patients with periodontal defects is root planing and curettage. Regular debridement of plaque and calculus from periodontal defects eliminates the nidus for inflammation. Recently, periodontists have experimented with the use of local antibiotics to enhance healing in deep periodontal defects. A recent study published in the *Journal of Periodontology* (1998;69:8819-827) shows that these measures are equivocal. In this experiment, root planing and curettage was performed in 18 patients with pocket depths greater than 5 mm. In each patient, either metronidazole or tetracycline was given locally after the initial therapy. The patients were reevaluated at 3 to 6 months to determine the effectiveness of the antibiotics compared with root planing and curettage alone. The results show that adjunctive use of antibiotics does not enhance the effectiveness of root planing and curettage in patients with advanced periodontitis. Researchers in this experiment believe that antibiotic therapy is not a substitute for root planing and curettage in patients with deep periodontal defects.

Moving moments

"Moving moments in orthodontics" was a challenging editorial and I thank Dr. Rubin for it. (Rubin RM. Moving moments in orthodontics. Angle Orthod 1998; 68(6):483.) I have given lectures on therapeutic diagnosis and the shortcomings of our statistical interpretations and our ability to predict response to treatment.

Rather than viewing treatment plans as a rigid statement that can be defined before banding and followed to the letter, I regard treatment as an opportunity to differentiate my skills and experience in reading response to treatment, then feeding that back into my treatment objectives. Some patients do respond like an average patient and confirm the plan, but others have a greater or lesser response; these patients benefit from a more "fuzzy" approach.

Our use of statistics and norms in a simplified form often inhibits us from developing a much broader conceptual approach to the orthodontic condition and the range of patient response to treatment. One hopes that papers such as this editorial encourage more sophistication in our understanding of orthodontics.

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Correction

The correct citation for an article in Volume 68, Issue 2 of the *Angle Orthodontist* is as follows: Richter DD, Nanda RS, Sinha PK, Smith DW, Currier GF. Effect of behavior modification on patient compliance in orthodontics. Angle Orthod 1998;68(2):123-132.

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STABILITY OF MAXILLARY SURGERY VS. A TWO-JAW PROCEDURE EQUIVOCAL—Surgical correction of Class III malocclusions can be accomplished with either maxillary surgery, mandibular surgery, or a combination of surgery in both jaws. In some patients, it is relatively easy to diagnose the malrelationship and prescribe the appropriate surgery. In others, however, the maxilla may be slightly retrognathic and the mandible slightly prognathic. In these patients, either isolated maxillary surgery or a combination of two-jaw surgery could seem appropriate. One reason for choosing one procedure over the other would be greater stability after healing. A study published in the *Journal of Oral and Maxillofacial Surgery* (1998;56:1029-1033) evaluated and compared the stability of isolated maxillary surgery and two-jaw surgery to correct Class III malrelationships. The sample consisted of 53 patients. Of these, 22 had maxillary surgery and 31 had bimaxillary surgery. Cephalometric radiographs were taken before, immediately after, and 6 months following surgery. The amount of relapse was compared between the two groups. The results of the study showed that both patients treated with isolated maxillary advancement and those treated with bimaxillary surgery experienced some relapse, and there was no difference between the two approaches. Some of the patients had rigid fixation following surgery while others had wire fixation, but in evaluating the data, that did not seem to affect the outcome, either. In conclusion, there were no significant differences in the amount of relapse between patients who had isolated maxillary surgery and those who had bimaxillary surgery to correct Class III malrelationships.