

# 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.*

**Vincent Kokich, DDS, MSD**

## **BIOABSORBABLE MEMBRANE PROMOTES BONE REGENERATION**

Regenerative therapy is a common way of gaining bone deposition in patients with periodontal disease. This is accomplished by placing a polytetrafluoroethylene membrane over a periodontal defect and burying it under the gingiva. The membrane blocks the epithelium from entering the bony defect and results in regeneration of bone. However, the membrane must be removed later. Now, researchers are experimenting with biodegradable membranes. A recent study published in the Journal of Oral and Maxillofacial Surgery (1993;51:1106-1114) shows that these bioabsorbable membranes have potential. This study was carried out in animals. Bony defects were created in the mandible and either a bioabsorbable or nonabsorbable membrane was placed over the defects. The soft tissues were repositioned and the areas were allowed to heal. Histologic evaluation 12 weeks later showed that the bioabsorbable membranes had disappeared and significant bone had filled the defects in the mandible. When compared to the nonabsorbable membranes, the response was slightly better with the bioabsorbable materials. Now that these materials have been tested in animals, future studies will determine their success in human patients with periodontal defects.

**HARD TOOTHBRUSHES PROMOTE RECESS-  
SION** — Toothbrushes generally come in three varieties: soft, medium, and hard. Although most

patients use a brush with medium bristles, some believe hard bristles clean better. But do hard bristles damage the gingiva? This question was answered in a study published in the Journal of Periodontology (1993;64:900-905). A sample of 180 subjects between 18 and 65 years old was evaluated. Each patient was examined and questioned about the type of brush used and the frequency of brushing. Exhaustive statistical correlations were used to determine the significance of the results. The study showed that recession occurred in the majority of older patients and that the average percentage of receded surfaces increased when subjects used a brush with hard bristles three or more times a day. When a softer brush was used, the percentage of receded surfaces was not affected by the frequency of brushing. In conclusion, patients who use a hard bristle brush will have greater gingival recession as they grow older.

## **EARLY CONDYLAR FRACTURES DON'T CAUSE TMD**

— When a child falls and lands on his or her chin, a condylar fracture is often the result. The neck of the condyle is narrow in children. In most cases, the only treatment is observation and monitoring; many of these fractures will heal themselves. But what happens to these children when they reach adulthood? Will they have a higher incidence of temporomandibular disorders? This question was addressed in a study published in the Journal of Oral and Maxillofacial Surgery (1993;51:1302-1310). The sample included 55

individuals ranging in age from 2 to 20 years. Each patient had previously experienced a condylar fracture. The researchers evaluated each individual's temporomandibular function. The results show that patients who experience a condylar fracture before 10 years of age have less severe symptoms of TM dysfunction. Patients who were over 17 years old when their fractures occurred showed more common problems with mandibular function. Locking of the TMJ was rare, but it did occur in those patients who had fractured their condyles between 17 and 19 years of age. In conclusion, if a condylar fracture occurs at an early age, conservative or nonsurgical reduction of the fracture will most likely result in minimal temporomandibular dysfunction at a later age.

#### **PREOPERATIVE DRUGS REDUCE ORTHOGNATHIC SURGICAL SWELLING**

— A common complaint of patients who undergo orthognathic surgery is the tremendous facial swelling that occurs. Many clinicians recommend the use of ice bags to minimize swelling. Some studies have shown that medication will reduce edema following surgery. However, the timing of administration of these drugs is not clear. A study published in the *Journal of Oral and Maxillofacial Surgery* (1994;52:35-39) compared preoperative and postoperative administration of dexamethasone for reducing postoperative edema. The sample consisted of 23 patients who had undergone sagittal split osteotomies. The study was a random double-blind protocol so that neither the subjects nor the investigators knew which patients were receiving the therapy. Selected patients received an injection

of a placebo or the dexamethasone either preoperatively or postoperatively. The results of the study showed that dexamethasone given preoperatively produced a significant reduction in the severity of postoperative swelling. However, there were no statistically significant differences between any of the groups when the steroids or saline were administered postoperatively. In conclusion, presurgical administration of dexamethasone seems to be the best protocol for reducing swelling after orthognathic surgery.

#### **PERIODONTAL DISEASE PASSED FROM PARENT TO CHILD**

— How do you get periodontal disease? Researchers know that certain bacteria are responsible for the majority of periodontal disease. One of the key bacteria involved is called *Actinobacillus actinomycetemcomitans*. But children are born without this bacteria, so how is it eventually acquired? This interesting question was answered in the *Journal of Periodontology* (1994;65:2-7). Researchers evaluated parents with significant periodontal disease and their children to determine if the children had the same intraoral bacteria as their parents. Bacteria were sampled, cultured, and identified from 15 adults and 47 offspring. This study clearly suggests that the child acquires the bacteria from parents. Children in a family where a parent suffers from adult periodontal disease most often have the same bacteria as one, or occasionally both, their parents. In conclusion, this very interesting study illustrates that periodontal disease is actually an infectious disease that can be passed from parent to child.