What's New in Dentistry

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Half-mouth examination sufficient for detecting periodontal disease. In most orthodontic practices, the number of adult patients has been increasing steadily over the past 10 to 15 years. Although adults are very cooperative, they present a new set of problems for the orthodontist. One of the most common confounding factors is preorthodontic periodontal disease. If periodontal defects are not recognized and treated prior to orthodontic treatment, they could jeopardize the survival of some of the teeth. Therefore, the orthodontist must perform a thorough periodontal examination prior to beginning bracket placement. Part of this examination should include the evaluation of the sulcus depths (probing) of the teeth. But is it necessary to probe all teeth? A study published in the Journal of Periodontology (2002;73:975-981), shows that fewer teeth can be probed and still produce an accurate assessment of the periodontal health of the individual. In this study, 292 subjects were evaluated. The entire mouth was assessed, using the typical periodontal tests, including pocket depth, gingival index, plaque index, and clinical attachment loss. Then, the authors tested an abbreviated method for evaluating the periodontal health of these subjects. The authors compared a half-mouth diagonal assessment with the data from the full mouth examination. The authors concluded that evaluating the maxillary right and mandibular left quadrants, or the maxillary left and mandibular right quadrants would produce the same assessment of the subject's periodontal health as a full mouth assessment. This abbreviated examination would reduce the amount of time involved, but not compromise the accuracy of the periodontal examination.

Sleep quality is a cofactor in temporomandibular disorders. TMD affects a portion of the patients treated by orthodontists. Although orthodontic therapy will not predictably ameliorate temporomandibular disorders, it is important to understand the pathology of TMD, and how it could affect or be affected by tooth movement. A recent study published in the *Journal of Orofacial Pain* (2002;16: 221–228), evaluated the quality of sleep as a participating factor in TMD. The sample for this study consisted of 137 consecutive subjects who had presented for evaluation at a university-based temporomandibular clinic. These individuals had a variety of problems, but all had varying degrees of craniomandibular pain and dysfunction. Before rendering any treatment, each subject was asked to complete three questionnaires. The first evaluated their quality of sleep, the second determined the subject's level of psychological stress, and the third evaluated the degree of craniomandibular pain. From this data, the subjects were divided into two groups—good sleepers and poor sleepers. Then, the level of psychological stress and the degree of pain were compared between the two groups. The authors found that poor sleepers typically had higher psychological stress, higher pain, and less perceived life control. Furthermore, the authors determined that the quality of sleep could be predicted by the intensity of pain and the degree of psychological stress in patients with TMD. As a result, the authors concluded that sleep quality is a cofactor in many subjects with temporomandibular disorders.

Third molar extraction at time of sagittal osteotomy causes complications in young patients. Occasionally, sagittal split ramus osteotomy is a necessary treatment adjunct for orthodontic patients who require orthognathic surgery. If the surgery will be performed during the late teenage years, the mandibular third molars may still be present. Should the third molars be extracted prior to or during the sagittal osteotomy in young individuals? A study published in the Journal of Oral and Maxillofacial Surgery (2002:60: 654-659), evaluated a sample of 70 subjects who previously had sagittal split ramus osteotomy. Unerupted third molars were present in 46% and absent in 56% of the sample. The mean age of the sample with unerupted third molars was 18.5 years. The authors compared difficulty of extraction, incidence of fracture during sagittal split osteotomy, and nerve damage in these two groups. The results showed that young patients with unerupted third molars had significantly more complications than older patients with third molars absent. In this sample, four fractures of the mandible occurred during the sagittal split, and all four occurred in young patients who had third molars removed at the time of the surgery. The authors conclude that the outcome of sagittal split ramus osteotomy in young subjects is much more predictable if the third molars are extracted prior to the osteotomy.

Lower storage temperature produces less root resorption of dry replanted teeth. Orthodontists are occasionally consulted immediately after trauma that results in avulsion of a maxillary central incisor. Although replantation of the tooth can be predictable, it could fail resulting in ankylosis and resorption of the root of the replanted tooth. A study published in *Dental Traumatology* (2002;18:190–195), evaluated the storage medium and time on the eventual outcome of tooth replantation in monkeys. Mandibular lateral incisors were extracted, and stored in either saliva, saline, or kept dry. The temperature of storage varied between 37, 22, 4, and -18° C. The storage times were either 60 or 120 minutes. Then the teeth were replanted, and after 8 weeks, the roots were evaluated histologically to determine the amount of root resorption and the incidence of ankylosis with these different protocols. The results showed that the best method for storing the teeth is either in saline or saliva at any temperature above 0°C. Storage temperatures below this level caused cell death and extensive destruction. If the teeth were stored dry, then a lower storage temperature of 4°C produced the least root destruction, probably because the lower temperature prevented desiccation of the periodontal ligament. The authors concluded that the best method of storing avulsed teeth before replantation is in saliva or saline at any temperature above 0°C.

Immediate loading of premolar implants shows high success rate. Many orthodontic patients are congenitally missing their mandibular second premolars. Although extraction of maxillary premolars and closure of the extraction spaces is desirable in these patients, it is not always

possible, because of the patients' profile or a lack of arch length deficiency. Therefore, implants have become a popular solution for replacing congenitally missing premolars in orthodontic patients when the space must be maintained. How soon after placement can these implants be restored? Traditionally, a period of 6 months was recommended in order to allow for osseointegration of the implant. However, today, surgeons and restorative dentists are restoring and loading implants immediately. A study published in the International Journal of Oral and Maxillofacial Implants (2002;17:567–572), evaluated a sample of 10 consecutively treated patients who had maxillary premolar implants placed and provisionally restored immediately after placement. Six months later, a permanent crown was placed on the implants. During the intervening period, the subjects' sulcus depth, bone level, implant mobility, and gingival index were evaluated and compared to other teeth in the mouth. The results of this study showed that all of these periodontal parameters were comparable to previous studies that evaluated delayed restoration of implants. The authors found no undesirable effects of immediate loading of any of the premolar implants. Although the sample was small, the authors suggest that single premolar implants can be provisionalized immediately after placement with little chance of compromising the outcome of the implant.