What's New in Dentistry

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Bruxism and attrition are not related to alveolar dehiscences. Dehiscences are labial or lingual vertical bony defects that extend apically from the alveolar crest. Dehiscences are the precursor of gingival recession. Without a bony dehiscence, gingival recession could not occur. So dehiscences must precede recession. But what causes dehiscences? Are they related to oral hygiene, bacteria, thickness of bone, path of eruption, or possibly parafunctional occlusal habits? Some believe that malocclusion or occlusal habits such as bruxism will cause labial bone loss, resulting in dehiscences. But is this association true? This question was addressed in a study published in the *Journal of Periodontology* (2001;72:722–729). The purpose of this retrospective study was to determine the prevalence of dehiscences in modern American skulls. The sample consisted of 140 modern American skulls that were collected between 1920 and 1950. A total of more than 3000 teeth in these skulls were evaluated. The authors found that either dehiscences or fenestrations occurred in about 15% of all teeth that were examined. Dehiscences were more common in the mandible, and fenestrations were more common in the maxilla. The authors found no association between wear or attrition of the teeth and loss of buccal bone around the roots of the teeth. In fact, the only accurate predictor of dehiscences was lack of attrition. In conclusion, bruxism cannot be blamed for creating dehiscences on the buccal or surfaces of the alveolar crest.

Occlusal adjustment has limited value in treating temporomandibular disorders. At one time, occlusal adjustment of the dentition was a routine first step in the treatment of temporomandibular disorders such as headache, neck ache, facial pain, and popping or crepitus of the temporomandibular joint. In more recent years, this mode of treatment has been discussed less and less as a viable therapy for these disorders. Is this justified? Does occlusal adjustment play any role in resolving temporomandibular disorders? A study published in the *Journal of Prosthetic Dentistry* (2001;86:57–66) provides an overview of 10 excellent published research experiments that evaluated the effectiveness of occlusal adjustment on bruxism, temporomandibular disorders, headaches, and neck pain. All studies were randomized clinical trials that compared occlusal adjustment and mock occlusal adjustment in groups of patients with and without temporomandibular disorders. Then the authors compared these studies to determine if occlusal adjustment can be relied on as a treatment for temporomandibular disorders. These research projects involved more than 400 subjects who were evaluated in comparison to controls. The data did not demonstrate that occlusal adjustment was an effective means of treating bruxism, headaches, neck pain, or temporomandibular disorders. The authors believe that occlusal adjustment is appropriate for relieving localized occlusal trauma of a single tooth, or a tooth with extreme mobility. However, the authors found no benefit in using occlusal adjustment to ameliorate temporomandibular disorders in general.

Five-year follow-up shows discectomy is effective in treating disk derangement. For nearly 100 years, discectomy has been used to treat painful temporomandibular joint internal derangement that does not respond to nonsurgical treatment. This technique has nearly been abandoned in the United States, because follow-up studies have indicated significant morbidity among patients who undergo this surgery. However, the authors of a European study whose results were published in the *Journal of Oral and Maxillofacial Surgery* (2001;59:750–758) present a much more enthusiastic interpretation of this type of surgery. The sample for this prospective study consisted of 64 consecutive patients treated with unilateral discectomy. A total of 56 patients had disk displacement without reduction, and 8 patients had disk displacement with reduction. In all patients, the disk was removed unilaterally. No attempt was made to remove any of the synovial tissue. When these patients were reevaluated after 5 years, only 5% of the 64 patients had been reoperated on because of recurrent pain and severe limitation of opening. About 96% of the patients had no or only mild pain at rest 5 years after unilateral discectomy. On chewing, 90% of these patients were pain free or had only mild pain. Discectomy also had a positive effect on mandibular movements. Maximal mouth opening improved, and there were increases in laterotrusion and protrusion. In conclusion, this study has shown an 85% success rate after unilateral discectomy for painful internal derangement, with a reoperation frequency of 5% over 5 years.

Stress is highly correlated with temporomandibular disorders. Orthodontic patients often ask whether or not their temporomandibular symptoms, such as popping, clicking, headache, and neck pain, will be eliminated or alleviated with orthodontic therapy. Although it is tempting to believe that creating a normal Angle Class I occlusion will cure temporomandibular problems, what about other etiologies, eg, stress or depression? Do they play a major or minor role in temporomandibular disorders? The authors of a study published in the *Journal of Oral and Maxillofacial Surgery* (2001;59:628–633) carefully analyzed this question. The purpose of the study was to determine what percent of patients who present with temporomandibular

symptoms have underlying psychological disturbances as the basis for these problems. The authors evaluated 250 patients who presented for treatment at a university-based temporomandibular joint clinic. All patients were seeking treatment for temporomandibular disorders. Before receiving any treatment, the individuals were given a series of 3 tests. One evaluated depression, the second evaluated pain, and the third test evaluated stress. When the authors analyzed the results, they found a strong association between those patients with muscle symptoms and their scores on the depression, pain, and stress examinations. That is, patients whose primary symptom was muscle pain, not temporomandibular joint pain, had the highest scores on depression and pain indexes. After treatment, the greatest decreases in pain occurred in those patients with predominant muscle pain, not intra-articular pain. These patients had the highest levels of stress. In conclusion, the authors were able to use pain as a good predictor of success. Patients with muscle pain were much more likely to experience pain relief after treatment than were patients with intra-articular pain.

Closed reduction shows high success rate after severe condylar fracture. Previous studies have shown that treatment of condylar fractures in children and adolescents should involve closed and not open (surgical) reduction of the fracture. But what if the condylar fragment is totally dislocated from the glenoid fossa? Should the patient have surgical repositioning of the displaced condylar fragment to ensure the likelihood of a successful outcome? The authors of a study published in the *Journal of Oral and Maxillofacial Surgery* (2001;59:768–773) evaluated the effectiveness of closed reduction in a consecutively treated sample of 130 patients with severely displaced condylar fractures. About 25% of the patients had a totally dislocated fracture. These individuals were treated with closed reduction and then evaluated about 9 years later. At the follow-up visit, the researchers evaluated the patients' temporomandibular joint symptoms, took radiographs of the condyle to evaluate the anatomy, and determined the impact on the patients. The researchers found frequent aberrations of the condylar neck and temporomandibular joint area on the radiographs. However, when the individual patient's symptoms were assessed, about 75% of the time there were mild to no symptoms, whereas significant symptoms occurred only about 25% of the time. The most common symptom was joint sounds. The authors also found that intermaxillary fixation immediately after the trauma had no effect on the presence or absence of symptoms. In conclusion, this study has again emphasized the body's high propensity for healing, even with severe dislocation of condylar fractures. Thus, the recommended method for dealing with nearly any condylar fracture is still closed reduction.