

What's New in Dentistry

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Retained asymptomatic third molars increase the risk of periodontal breakdown. Orthodontists often must make decisions regarding the fate of third molars after orthodontic treatment. If the third molar is partially or fully erupted and is asymptomatic, most clinicians would probably recommend leaving the third molar in position. However, a study published in the *Journal of Periodontology* (60:1241–1245, 2002), suggests that asymptomatic third molars could be undergoing irreversible periodontal breakdown, and that it may be possible to predict which individuals are at greatest risk. The sample for this investigation consisted of 329 subjects with asymptomatic third molars. The gingival crevicular fluid from the mesial of the first molars and distal of the second molars were evaluated to determine if inflammation was present in the sulci around these teeth. In addition, plaque samples were analyzed to determine the types of microorganisms that were present in each area. This study showed that 25% of the asymptomatic subjects were found to have incipient periodontitis and a pocket depth equal to or greater than 5 mm in the third molar region that was associated with periodontal attachment loss. In addition elevated levels of inflammatory enzymes were found in these same patients. These data suggest that by combining clinical measures of periodontal disease, and biochemical markers, clinicians may be able to predict which patients are at risk for periodontitis in the third molar region, before any symptoms or tissue destruction occurs.

Bleaching solutions with 16% Carbamide peroxide are safe for clinical use. Tooth bleaching is a common procedure after orthodontic treatment in many adolescent and adult patients. Generally, “at home” bleaching is safe and predictable provided that the patient follows the instructions provided by the manufacturer of the bleaching system. However, newer bleaching systems with higher concentrations of carbamide peroxide are now being marketed. The standard bleaching solution contains 10% carbamide peroxide, while the newer systems contain 16% carbamide peroxide. Is this harmful to patients? This question was answered in a study that was published in the *Journal of Esthetic and Restorative Dentistry* (14:358–367, 2002). The sample consisted of 20 female dental hygiene students who were enrolled in this randomized clinical trial. The treatment group randomly applied solutions to their teeth as prescribed by the manufacturer. These solutions either contained 16% or 10% carbamide peroxide, or a placebo

solution. The bleaching experiment was applied for 8 to 10 hours per night for two weeks. The authors evaluated gingival index, plaque index, and tooth vitality. The results showed that there were no statistically significant differences among the three groups at any time point with respect to gingival index, plaque index, or tooth vitality. Some of the participants using the 16% carbamide solution complained of areas of gingival irritation. In conclusion, there are no major differences between the responses to 10% or 16% solutions of carbamide peroxide used for tooth bleaching.

Arthrocentesis prevents recurrence of open-lock of the TMJ. Mandibular dislocation and “open lock” are two different problems of the temporomandibular joint. In mandibular dislocation, the mandibular condyle is displaced in front and superior to the articular eminence, resulting in the inability to close the mouth. Open lock occurs when the TMJ is locked in the open-mouth position and the condyle of the affected joint is located in front of the anterior band of the disc, thereby mechanically obstruction the posterior movement of the anteriorly displaced condyles. Recurrent mandibular dislocation requires surgical intervention, however, a study published in the *Journal of Oral and Maxillofacial Surgery* (60:506–511, 2002), evaluated whether arthrocentesis could obviate the need for open surgical correction of recurrent open-lock of the TMJ. The sample consisted of six subjects, who had recurrent open lock of the temporomandibular joint that did not respond to conservative treatment. Arthrocentesis was performed on all patients. This procedure consists of lavage of the upper compartment, which allows rehabilitation of the lubrication system (phospholipids and hyaluronic acid), enabling the disc to slide simultaneously with the condyle. Five of six responded favorably, and the recurrence of the open-lock was stopped without further surgery. In summary, simple lavage of the upper compartment can solve recurrent open lock of the temporomandibular joint.

Periodontal pathogens contribute to oral malodor. Halitosis or oral malodor is the result of volatile sulfur compounds, which are the by-product of the metabolic activity of certain oral bacteria. Three oral bacterial species that are highly associated with periodontal disease are among the most active volatile sulfur compound producers. Therefore, it would seem that patients with active periodontal disease should have greater problems with oral malodor. This hy-

pothesis was tested in a study that was published in the *Journal of Periodontology* (73:1338–1342, 2002). The sample consisted of two groups. One group of 21 subjects had a history of periodontal disease, with attachment loss, and several areas of pocket depths greater than 3 mm. The other group of 20 subjects had healthy gingiva and no pockets greater than 3 mm. The plaque index, bleeding index, identification of specific periodontal pathogens, and tests for volatile sulfur compounds were performed on both groups. The results showed that those individuals with periodontal disease had higher scores for plaque index, bleeding index, and greater amounts of volatile sulfur compounds than subjects with normal periodontal health. In summary, this study confirms that periodontal pathogens in the subgingival plaque are an important source of malodor production in the oral cavity, and that gingival inflammation contributes to the intensity of the halitosis.

Closed treatment of intracapsular condylar fractures yields poor results. Condylar fractures are typically treated with closed rather than open surgical procedures, and the

results confirm that this approach is vastly superior. However, when the trauma results in an intracapsular fracture of the condylar head, the situation is different. A study published in the *Journal of Oral and Maxillofacial Surgery* (60:784–791, 2002), evaluated the clinical, radiographic, and axiographic results of 40 patients with 50 intracapsular fractures of the mandibular condyle that were treated with a closed technique. These intracapsular fractures occurred either through the lateral pole, the medial pole, or in multiple sites through the condylar head. The closed technique included 10 days of maxillomandibular immobilization and functional follow-up for 5 to 8 weeks. The results of this retrospective follow-up revealed a reduction in condylar height by 30% for some intracapsular fractures. The rate of moderate and serious dysfunction was 33%. The authors believe that fractures through the lateral pole could probably be treated satisfactorily with a closed technique. However, intracapsular fractures through the medial pole, or multiple fractures should probably be treated with an open surgical approach.