What's New in Dentistry

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Costochondral grafts successful at treating TMJ ankylosis. Occasionally, children may fall and severly damage their temporomandibular joint, resulting in irreparable ankylosis of the head of the condyle and the glenoid fossa. If this happens, the child can not function properly, and the ankylosis will produce a significant facial asymmetry as facial growth continues. However, a recent study published in the Journal of Oral and Maxillofacial Surgery (1999;57: 789-798) has shown that early intervention with a costochondral graft will recreate more normal development of facial symmetry. This investigation reviewed the long-term effects of costochondral grafting of ankylosed condyles in 10 consecutively treated children at 7 years of age. Either the fourth, fifth, or sixth rib was used. After the condyle was removed, the rib was secured to the body of the mandible using rigid fixation. The children were followed until facial growth was completed. Cephalometric radiographs were used to document the effects of the grafts over time. The results showed that, in every case, the costochondral grafts produced accelerated growth on the affected side, which, in most cases, caught up with the growth on the normal side. No re-ankylosis occurred in this sample. Finally, the typical dental deformities that occur when a condyle is ankylosed did not appear in this sample. The authors believe that the key was to perform the graft early during the child's development.

Two-year results of posterior composite restorations looks promising. Restoration of posterior teeth has undergone a major change in recent years. In the past, amalgam was the resotrative material of choice in children and adolescents. However, today many patients are concerned about esthetics and request "tooth-colored" restorations. Although porcelain inlays or onlays are possible, direct or indirect composite restorations are used predominantly. A study published in the Journal of Prosthetic Dentistry (82: 391-397) evaluated the marginal integrity and success rate of direct and indirect composite restorations in mandibular premolars and molars. This was an in vivo study. The restorations were placed in a total of 45 patients. In each individual, 2 composite restorations were placed. One tooth was restored with a direct composite approach, and the other was restored with an indirect or inlay-type composite. The subjects were monitored at 1- and 2-year intervals to determine the success and marginal integrity of these restorations. The results of this study show that the success rate for the indirect or inlay-type restorations was over 93%, and the success rate of the direct composite restorations was about 90%. The marginal integrity was rated excellent. Very little leakage was noted at 2 years. In conclusion, over the short-term, composite restorations hold-up well. But how about long-term? Will these restorations last as long as the traditional amalgam restorations? Only time and longer-term studies will give us the answer.

Implants are successful in periodontally-compromised patients. Implants are used to replace missing teeth in adults. One of the predominant causes of tooth loss in adults is extraction due to periodontal disease. If implants are eventually placed adjacent to periodontally involved teeth, will this jeopardize the potential longevity of the implants? Will implants undergo the same type of periodontal bone loss as seen around teeth? These questions were addressed in an article that was published in the Journal of Periodontology (70:1322–1329). The purpose of this study was to evaluate a sample of 25 patients who had prior periodontal breakdown and in whom single-tooth implants were placed adjacent to periodontally involved teeth. All individuals had undergone periodontal therapy with curettage and some minor surgery prior to implant placement. The implants were restored and the pocket depth, clinical attachment loss, and plaque indices were evaluated in this sample of patients over a 3-year period. The types of bacteria that colonize teeth and implants were compared. The study showed that the bacteria around implants and teeth are the generally the same, but certain types of bacteria will colonize teeth and not implants. The pocket depth around implants was slightly increased, but it was not significantly different than pocket depth changes around teeth. Finally, the amount of clinical attachment loss around teeth and implants in the same subject was similar. In conclusion, placing implants in individuals who have lost teeth because of periodontal disease does not predispose the implants to future failure.

Open reduction of condylar fractures produces better results in adults. If a child fractures his or her condyle, the standard treatment of choice is closed reduction allowing the condyle to heal. If the trauma occurs at an early age, the condyle may regenerate, and normal growth of the affected ramus is likely. However, in adults the treatment of condylar fractures is controversial. Some surgeons prefer open reduction to reposition and fix the condyle in its proper position. Other surgeons manage adults in the same manner as children, and simply allow the condyle to heal with no attempt to reposition or fixate the fractured condyle. Is there any difference in outcome with these 2 approaches? That question was answered in a study published in the Journal of Oral and Maxillofacial Surgery (57:764–775). In this investigation, 130 adults were randomly assigned to 1 of 2 possible treatments after condylar fracture. One treatment consisted of open reduction with surgical repositioning of the condyle and placement of plates across the fracture site. In the other group, no surgical repositioning was accomplished. The authors evaluated jaw movement and function after several years. The results show that the shortterm results are equivocal. That is, either open or closed reduction of the fractured condyle produced the same result during the first 6 weeks. However, after 6 weeks, the authors noted that those individuals who had open reduction with repositioning of the condylar had much better mandibular movement and function than those who had closed reduction.

No association between working and non working occulsion and temporomandibular disorders. Orthodontists generally attempt to produce a finished occlusion that has maximum intercuspation with canine disclusion and no cross-arch or balancing interferences. However, in some patients, these goals are not entirely achievable. If patents lack proper working and nonworking occlusion, will they be predisposed to temporomandibular dysfunction (TMD)? That question was explored in a study that was published in the Journal of Prosthetic Dentistry (82:410-415). The purpose of this investigation was to compare the prevalence of molar relationship, occlusal guidance, and balancing side contacts in both symptomatic patients with TMD and asymptomatic volunteers. The sample consisted of 250 symptomatic patients who had been seen consecutively at a major TMJ clinic. They were compared to 80 asymptomatic volunteers. The occlusion, including the type of lateral contacts on both working and nonworking sides was evaluated. The authors wanted to determine if canine guidance or group function were predominant in either sample. In addition, the authors divided their sample into asymptomatic and symptomatic patients who had displaced disks and normal condyle-to-disk relationships. The results showed a higher incidence of canine guidance in patients whose temporomandibular joints were symptomatic. The most common type of relationship in asymptomatic patients was group function with a high incidence of nonworking or balancing interferences. Based upon the results of this study the authors conclude that the presence of group function and balancing interferences does not predispose an individual to temporomandibular joint problems.