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<th>Factors affecting the chance of post-operative sensitivity in indirect porcelain onlays</th>
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<td>Wat, PYP; Cheung, GSP</td>
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2057 Factors affecting the chance of post-operative sensitivity in indirect porcelain crowns. P.Y.P. VAT and G.S.P. CHEUNG* (Department of Conservative Dentistry, The University of Hong Kong, Hong Kong)

The aim of this clinical study was to evaluate the effect of two luting cements and a glass ionomer cement on post-operative sensitivity in indirect porcelain crowns. The patients were randomly allocated to receive one of the three luting cements. The results showed that post-operative sensitivity occurred in 26% of the patients. A logistic regression model showed that the degree of luting and the use of a glass ionomer cement were significant factors in reducing the risk of post-operative sensitivity. The use of a glass ionomer cement was found to be associated with a decrease in the incidence of post-operative sensitivity.

2058 Clinical Evaluation of Ceramic Inlays and Onlays After Four Years. H. AAVAKI, V. AAVAKIAN, S. KOCH, A. WIEBOSCH (Department of Operative Dentistry and Periodontology, University of Dusseldorf, Dusseldorf, Germany)

Instead of amalgam and other metallic restorations ceramic fillings are used as aesthetic and suitable alternatives to restore unrestored, restored and partially restored teeth. In this clinical evaluation of ceramic inlays and onlays after four years the materials were evaluated according to the International Dental Federation (FDI) criteria for ceramic restorations. The results showed that the ceramic inlays and onlays were well tolerated by the patients and had an acceptable long-term performance. The ceramic materials used for inlays and onlays were tested under standardized conditions to ensure their durability and predictability.

2059 In Vitro Accuracy and Fit of Milled Natural Inlays. H. MOSCOWITZ, M.H. CREUCHAR and R.A.M. DE KANTER (University of Nijmegen, Nijmegen, Netherlands)

The recent development of computer-aided design and computer-aided manufacture (CAD/CAM) technology has increased the accuracy and fit of dental inlays. In this study, the accuracy and fit of milled natural inlays were evaluated using a 3D scanning system. The results showed that the accuracy and fit of milled natural inlays were comparable to that of hand-cut inlays. The use of CAD/CAM technology can significantly improve the accuracy and fit of dental inlays.

2060 One Year Clinical Evaluation of Bonded Porcelain Onlays and Inlays. N. BARDUGI, T. R. GIBBY and D.C. HAM (Department of Operative Dentistry, The University of Texas Health Science Center at San Antonio, TX 78284-7900, USA)

Porcelain bonded to cement restorations (porcelain veneers) have demonstrated predictable clinical results with low incidence of debonding, fracture, microleakage and marginal discrepancy. A small number of excised porcelain surfaces have been bonded to porcelain samples and debonded in vitro to assess the bond strength. The results showed that the bond strength of porcelain to porcelain samples was significantly higher than that of porcelain to cement samples. The use of porcelains bonded to cement restorations can improve the durability and esthetics of porcelain restorations.

2061 Effect Of Thermal And Mechanical Fatigue On Microleakage Of Inlays, Onlays And Porcelain Veneers. N. CHEUNG, Y. ABDULMOHAMMED, Y.M. ELBAGATY, R.R. BERNSTEIN (University of U Tokyo, Tokyo, Japan; and The Ohio State University-Columbus, OH, USA)

Thermal and mechanical changes may induce tensile and compressive forces which may cause microleakage. In this study, the effect of thermal and mechanical fatigue on microleakage was evaluated. The results showed that the microleakage scores were significantly higher in the groups that underwent thermal and mechanical fatigue. The use of thermal and mechanical fatigue can significantly increase the microleakage scores.

2062 Thermal Cycling Effects on the Strength of Optimal Porcelain Ceramic. W.A. LYZAK* (Department of Restorative Dentistry, University of Illinois at Chicago)

The purpose of this study was to examine the thermal fatigue stress of zirconia ceramic. Two types of zirconia ceramic samples were tested to determine the effects of thermal cycling on the mechanical properties. The results showed that the thermal cycling significantly decreased the strength of the zirconia ceramic samples. The use of thermal cycling can significantly reduce the strength of zirconia ceramic samples.

2063 Thermal Coefficient of Expansion of Optimal Porcelain Ceramic. M. MIYAHARA, S.D. CAMPBELL and Z. WEN (Department of Restorative Dentistry, University of Illinois at Chicago)

Dental ceramic restorations provide an aesthetic alternative in traditional ceramic restorations. However, some dental ceramics have been developed to achieve thermal resistance. In this study, the thermal coefficient of expansion (TCE) of these materials was measured. The results showed that the thermal expansion coefficients of these materials were significantly higher than those of traditional ceramic materials. The use of materials with high thermal expansion coefficients can significantly improve the durability of ceramic restorations.

2064 Effects of Pressure Programs on Optimal Porcelain Ceramic. S. T. ABBAS, W.A. LYZAK*, S.D. CAMPBELL and Z. WEN (Department of Operative Dentistry, University of Illinois at Chicago)

Following thermal and surface analysis of Optimal Porcelain Ceramic (OPC), the characteristic surface core was identified as the origin of the core ceramic. The purpose of this study was to examine the effects of pressure programs on the surface characteristics of OPC. The results showed that the pressure programs significantly altered the surface characteristics of OPC. The use of pressure programs can significantly improve the surface characteristics of OPC.

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