

Location: Exhibit Hall D (Miami Beach Convention Center)

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Objectives: Polymer nanocomposites(PNCs) are a new class of materials consisting of nanoparticles at very small quantities dispersed within a polymer matrix. The extent of nanoparticle dispersion in the matrix is an important property. Depending on several factors such as the type of nanomaterial, the interaction between the nanoparticle and the matrix and the physical methods used for dispersion, the nanoparticle may be exfoliated (ie. fully dispersed at a nano-scale), intercalated (partially dispersed), or remain aggregated. Exfoliated nanocomposite usually results in substantially enhanced physical properties; dimensional stability, stiffness, mechanical and thermal properties and improved drug elution characteristics. This study investigates the use of PNCs as potentially useful materials in Endodontic surgery and to determine qualitatively the degree of dispersion of various nanoparticles namely, organoclays(OC), carbon nanotubes(CNT), and Graphene in a dental monomer matrix using Transmission Electron Microscopy.

Methods: Nanoparticles were mixed with Bis-GMA/TEGDMA/HEMA monomer resins to study the degree of dispersion (intercalation or exfoliation). Samples were photo-polymerized and sectioned by ultra-microtome. Nanoparticle dispersion in samples was examined by TEM.

Results: TEM micrographs reveal that smaller mass fractions of OC (0.5% and 1.0%) in the Bis-

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Objective: To compare pre-treatment case complexity and treatment outcomes using the Discrepancy Index (DI) and American Board of Orthodontics Grading System (ABOGS) respectively. Materials and Methods: Corresponding pre- and post-treatment dental casts were assessed using DI and ABOGS to evaluate case complexity and quality of outcomes, from a sample drawn from 1960-2005. Information gathered included, but was not limited to, duration of treatment, mandibular canine and first molar width, and extractions. A total of 655 randomly selected cases (148 from 1960's, 194 from 1970's, 215 from 1980's, and 98 from 2000's) were evaluated by a single, self-calibrated operator. Results: Reliability tests (intraclass correlations) revealed good reliability with values of 0.987(DI) and 0.781(ABOGS). Individually, the evaluating scores showed statistical significance as a total ($p=0.00$) and between 1960's, 1970's, and 1980's compared to the 2000's ($p=0.00$). DI had mean scores of 14.36 ± 5.98 , 14.56 ± 7.98 , 12.39 ± 7.06 , 9.714 ± 5.82 , respectively to the progressing decades. Variables of significance included overjet ($p=0.00$), overbite ($p=0.003$), and occlusion ($p=0.002$). ABOGS had means of 14.59 ± 7.53 , 17.65 ± 8.56 , 14.64 ± 6.69 , 8.586 ± 5.92 , respectively, to consecutive decades. Almost all variables within the ABOGS showed statistical significance ($p<0.005$) except Bucco-lingual (BL) inclination. Discussion: Orthodontic post-treatment results illustrated an improvement between the decades with the 2000's having the lowest scores indicating the best results. A similar decrease in pre-treatment scores suggested that cases were less complex over the decades studied. For ABOGS, BL inclination was not significant possibly suggesting that occlusal relationship and occlusal contacts are more representative of occlusal correction. Conclusions: A directly proportional improvement in DI and ABOGS throughout the decades indicated that a more functional outcome was achieved with less complex cases.

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Endodontic surgery aims to treat periradicular pathology and to seal the apical portion of the resected root to prevent further infection. Although a number of materials have been used to seal the root, none has been demonstrated to reach an ideal standard. Polymer organoclay/clay nanocomposites are a new class of dental materials consisting of exfoliated organoclay nanoparticles within a polymer matrix. The organoclays are usually obtained by modifying Sodium montmorillonite (Na-MMT) with organic surfactants. An important property of nanocomposites is the degree of exfoliation (dispersion at a nanoscale) of the organoclays, which usually corresponds to enhanced physical properties such as dimensional stability, stiffness, mechanical and thermal properties and drug elution characteristics.

Objectives: To quantitatively characterize the exfoliation of two different types of organoclays within a specific polymer-monomer matrix using X-ray Diffraction. Methods: Two different species of organoclays were incorporated into a dental monomer matrix in concentrations of .5%, 1%, 1.5%, 2%, and 2.5% by weight. The matrix was composed of bisphenol A glycidyl ether (1 glycerol/phenol) dimethacrylate (Bis-GMA), triethylene-glycol-dimethacrylate (TEGDMA), and 2-hydroxyethyl methacrylate (HEMA). A film with thickness of .5 mm was prepared of the sample for x-ray diffraction, with data being analyzed for patterns associated with exfoliation and compared to known patterns found in Na-MMT. Results: As evidenced by the XRD results, exfoliation was obtained in all samples with an organoclay concentration of 2% or less. The findings also need to be verified by alternative analytical techniques such as TEM. Co

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Objective: This retrospective cohort study assessed the 9 months to 3-years outcome of endodontic treatment following nonsurgical root canal therapy. Methods: Data were abstracted from a random sample of 200 charts in a post graduate endodontic program at a teaching institution including both clinical and radiographic evaluations. The outcome was dichotomized as 'success' (no apical periodontitis, no signs or symptoms) or 'failure' and recorded by two independent observers. The preoperative factors included medical history and pretreatment diagnosis. Data analysis was carried out by Statistical Package for Social

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Objectives: To determine provider and office characteristics that patients identify as important in deciding to stay with their current dentist or practice.

Methods: Adult patients in 8 general dental offices within the CROWN research-network were invited to complete a 44-item anonymous questionnaire in the waiting room. Patients rated the importance of dentist and office characteristics to returning to the office on a 5-point Likert scale. Patient characteristics, patient satisfaction, and five questions about electronic communication were included. Principal components analysis was used to reduce the number of items and explore factors related to retention.

Results: Seventy-four respondents were predominantly female (54%), college graduates (54%), 49.8 (±17.3) years old and a patient in that office for 10 years (range 0-42). Patients ranked 'accepts my insurance', 'minimal pain', 'answers questions', and 'involves me in treatment plan' as the 4 most important factors in returning to an office. The three latter items demonstrated strong correlation with patient satisfaction. Among 17 statements, 74% and 69% of patients rated 'appropriate infection control' and 'dentist care and attention' as very important, respectively. 'Dentist age' and 'dentist offers praise' were rated as not important by 76% and 51% of respondents, respectively. Factor analysis identified 6 factors that accounted for 72% of variance in retention. Half (52%) of respondents indicated that email reminders would be very useful, while 37% and 41% thought online appointment scheduling and electronic records, respectively, would be very useful; those interested in electronic communication were younger than other respondents.

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Objectives: Oral hyperpigmentation (OHP) is a widely-recognized mucocutaneous manifestation of HIV-1 infection. Previous studies have only noted the presence of OHP. The objective of this study was to determine the location and intensity of OHP observed in an HIV-1 infected cohort to better understand its association with immunologic data.

Methods: The mouth was separated into five distinct areas (buccal mucosa, labial mucosa, tongue, hard palate, and soft palate). Each area was rated from zero to four, with zero representing OHP not present and four representing a defined and distinct presentation of OHP. Two independent raters retrospectively analyzed intra-oral photographs of an HIV-positive cohort and compared results. Raters discussed discordant ratings until agreement was reached. These data were combined with a database containing

2470 Chart Review of General Health Conditions in Community Dental Clinics

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Objectives: We reviewed community dental clinic charts to determine if blood pressure readings, hypertension or diabetes were char

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D. LOWMAN, S. CHOGLÉ, S. NARENDRAN, and N. JAHDİ, Case Western Reserve University, Cleveland, OH

Objective: This retrospective cohort study assessed the 9 months to 3-years outcome of endodontic treatment following non-surgical root canal therapy. Methods: Data were abstracted from a random sample of 200 charts in a post graduate endodontic program at a teaching institution including both clinical and radiographic evaluations. The outcome was dichotomized as 'success' (no apical periodontitis, no signs or symptoms) or 'failure' and recorded by two independent observers. The operative and Post-operative factors included Pre-operative Prognosis, Number of visits, Coronal restoration, and Presence of Periodontal disease. Data analysis was carried out by Statistical Package for Social Sciences (SPSS) and included both descriptive and analytical tests. Results: The overall success rate was 80%. The Preoperative prognostication was a strong indicator of success (81%). The success rate was significantly lower in teeth with periodontal involvement (63%) as compared to those without periodontal disease (83%). The success rate significantly dropped from 85% to 42% with the absence of an acceptable coronal restoration. In the current study the endodontic success was lower when endodontics was performed in one visit (76%) compared to multiple visits (82%) even though no significance was found. Conclusion: This study confirmed the presence of periodontal involvement and the absence a proper coronal restoration as the main prognostic factor in initial endodontic treatment. Continuation of the project will allow assessment of other prognostic factors with better power.

