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<th>Provision of Atraumatic Restorative Treatment (ART) in Chinese preschool children - one year results</th>
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Prevalence of and risk factors for dental fear among Chinese children

D.S.K. FUKUY, M.C.M. WONG and E. SCHWARZ (Faculty of Dentistry, The University of Hong Kong).

Recent studies have shown that dental fear may lead to avoidance of dentistry. Very often such fear is acquired during childhood. Therefore, a survey was conducted to study the dental fear of Hong Kong children in 1996, and the results have been presented. A preliminary study of the prevalence of such fear affecting dental fear among Chinese students in Conghua, PRC was also conducted in June 1996 using the same questionnaire. This paper describes the procedures and findings of these 2 studies. 234 primary students were surveyed, with 37% boys and 43% girls, and 96% of them being 11-13 years old. The same CFSSS developed by the author’s group was used. The prevalence of dental fear was 16.1% of them having high dental fear (score>15). This is similar to the result of the Hong Kong study (n=559), with mean CFSSS-Score of 29.39±9.15, and 15.3% of the students having high dental fear.

Analysis of Covariance (ANCOVA) indicated that among the PRC children, only the children’s general fear level and the perception of their own teeth when compared with their friends’, had significant effects on their dental fear scores (p<0.01). All other factors were eliminated from the model. On the other hand, the Hong Kong result showed that apart from these two factors (general fear and perception of their own teeth), the children’s dental fear was also significantly influenced by the childhood unpleasant experiences in dental clinics and the recognition of their parents, siblings and friends mentioning about fear of seeing the dentist (p<0.001). Since different factors have been shown to affect the dental fear level of children in Hong Kong and the PRC further study should be conducted to investigate the similarities and differences between the two populations groups.

Effect of Smear Layer Removal on Sealing of Two Sealers

S. RAVINDRANATH* (Faculty of Dentistry, University Malaysia, Kuala Lumpur, Malaysia).

The removal of smear layer from the root canal walls following instrumentation has been the object of numerous investigations. The purpose of this study was to evaluate the effect of smear layer removal on the sealing ability of two different sealers. Sixty four freshly extracted maxillary central incisors were sectioned and divided into 2 groups (1/2). Group 1 teeth were used as control with the smear layer intact. In Group 2 teeth, the smear layer was removed by using 17% HNO3 as irritant. Two teeth from each group were subjected to scanning electron microscope analysis to confirm the presence or absence of smear layer. The remaining 30 teeth in each group were sectioned into groups of 10. Group 1A, 1B, 2A and 2B were subjected to root canal treatment separately. An apically directed guttapercha technique in groups 1A & 2A, zinc oxide eugenol was used as a sealer and in groups 1B & 2B, calcium hydroxide was used as a sealer. Specimens were stored in 5% NaOCl and 0.1% thymol solution for 7 days. The teeth were sectioned at the mesial and distal surfaces and the smear layers were observed under the SEM. The results showed that smear layer removal resulted in better sealing ability of the sealers used. Endodontic eugenol had less tendency for leakage compared to zinc oxide eugenol.

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Comprehensive Healing When Diaket* & Mineral Trioxide Aggregate are Used with Split Root Surgeries

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The aim of this study was to investigate the healing of the periodontal tissues when either the polyvinyl resin, Diaket* or Mineral Trioxide Aggregate (MTA) were used as root-end filling materials. Non-surgical root canal treatments were performed on randomly allocated mandibular 3rd and 4th premolars in seven dogs. Subsequently, the root-ends were resected and ultrastructurally prepared root-end cavities were used with either Diaket* or MTA. Healing was evaluated by a 6-month post-surgical time interval. Histological sections were stained with either HE or Masson trichrome stains and sections were observed under a 40X magnification. There was no statistical difference for the material used for the preservation of inflammation or osteogenesis. While Diaket* showed the greatest amount of new bone formed in the body of the surgical wound and adjacent to the resected root-end cavities, differences were not significant. Greater reduction of periodontal ligament was seen in the Diaket* specimens but the difference was not significant (p = 0.0666). Significantly more bone formed adjacent to the MTA filling material (p = 0.0284). When cementum was seen in some sections, forming a continuous layer over and in direct apposition to the MTA material and resected dentin, this finding was variable and unpredictable. There was no significant difference between the MTA and Diaket* for cementum deposition. The overall healing in the periodontal tissues for both materials was favorable and the potential for complete repopulation of the periodontium adjacent to both materials was demonstrated. This research was partially funded by the American Association of Endodontists Foundation.

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Clinical Evaluation of Composites in Premolar Teeth: 3-years’ results

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The clinical performances of a composite (Dyntac*) and a hybrid resin composite (Prisma TPH) were compared. 36 children (aged 4-7 years) with 60 bilateral matched pairs of carious primary teeth were included. For each pair, one was restored with Dyntac and the other with TPH. Colour matching, marginal resorption, marginal integrity, presence of recurrent caries and failures were assessed using the UISPHS at 6-month intervals (3 appraisals at baseline (within 2 weeks) and after 6, 12, 24 and 36 months of clinical services. At 36 months, 84 restorations were evaluated. The cumulative failure rate for Dyntac and Prisma TPH was 8.0% and 15.2% respectively. There was significant difference in marginal integrity among the restoratives (Afxa: 47.7% vs. 26.0% for Dyntac and TPH; p<0.001). Marginal integrity (Afxa: 52.3% and 73.8% respectively, p<0.001) and occlusal wear were performance (p<0.001).

The average mean value was 36 months for Dyntac and TPH were 172.5mm and 96.7mm respectively. The 36 months clinical performances of Prisma TPH was better than Dyntac in marginal integrity, marginal resorption and occlusal wear performances. In colour matching, recurrence of caries and anatomic form, Dyntac was comparable to that of TPH. In conclusion, the composite of handling of Dyntac and fine life-time of primary teeth it is a suitable alternative restorative material for primary teeth. (This study was partially supported by Denflex Asia). (*: Fisher exact test; T: Paired t-test)

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Provision of Atraumatic Restorative Treatment (ART) in Chinese pre-school children – one year results

E.C.M. LO, C.J. HOLMGREN (Faculty of Dentistry, University of Hong Kong).

The aim of this study was to investigate the healing of the periodontal tissues when either the polyvinyl resin, Diaket* or Mineral Trioxide Aggregate (MTA) were used as root-end filling materials. Non-surgical root canal treatments were performed on randomly allocated mandibular 3rd and 4th premolars in seven dogs. Subsequently, the root-ends were resected and ultraplastically prepared root-end cavities were used with either Diaket* or MTA. Healing was evaluated by a 6-month post-surgical time interval. Histological sections were stained with either HE or Masson trichrome stains and sections were observed under a 40X magnification. There was no statistical difference for the material used for the preservation of inflammation or osteogenesis. While Diaket* showed the greatest amount of new bone formed in the body of the surgical wound and adjacent to the resected root-end cavities, differences were not significant. Greater reduction of periodontal ligament was seen in the Diaket* specimens but the difference was not significant (p = 0.0666). Significantly more bone formed adjacent to the MTA filling material (p = 0.0284). When cementum was seen in some sections, forming a continuous layer over and in direct apposition to the MTA material and resected dentin, this finding was variable and unpredictable. There was no significant difference between the MTA and Diaket* for cementum deposition. The overall healing in the periodontal tissues for both materials was favorable and the potential for complete repopulation of the periodontium adjacent to both materials was demonstrated. This research was partially funded by the American Association of Endodontists Foundation.

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Antibacterial Properties of Local Plant Extracts Against Selected Periodontal Bacteria

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The selection of antimicrobial agents for plaque control requires an understanding of the microorganisms involved, the agents used and the relationship of the bacteria to the host. Many plant extracts locally have been reported to have some soothing and healing effect on subjects suffering from toothache and periodontal complaints. In this study, extracts from two local plants (Pandurangus sp. and Peganum sp.) were screened for their antimicrobial response against several plaque bacteria. Coarse water extracts of the plants were prepared in the form of a 10% suspension in distilled water and the extracts were subjected to gradient disc diffusion method and agar well diffusion method. The extracts were tested using Staphylococcus aureus, Enterococcus faecalis and E.coli. The extracts were found to exhibit significant inhibition against the test organisms. The results showed that 14% of the extracts tested was significantly effective against S. aureus and E. faecalis while 10% of the extracts was significantly effective against E. coli. The results showed that 14% of the extracts tested was significantly effective against S. aureus and E. faecalis while 10% of the extracts was significantly effective against E. coli.