

<p><b>41</b> Prevalence of and risk factors for dental fear among Chinese children. D.S.H. FUNG*, M.C.M. WONG and E. SCHWARZ (Faculty of Dentistry, The University of Hong Kong).</p> <p>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 and factors affecting dental fear among Chinese students in Conghua, PRC was also conducted in June 1996 using the questionnaire constructed for the Hong Kong children with minor modifications. 254 primary 6 students were surveyed, with 57% boys and 43% girls, and 96% of them being 11-13 years old. The mean CFSS-DS score (15-item Children's Fear Survey Schedule-Dental Subscale) for the PRC children was 29.96±8.71 with 16.1% of them having high dental fear (&gt;mean+1SD). This was similar to the result of the Hong Kong study (n=3596), with mean CFSS-DS score of 29.39±9.15, and 15.5% 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 level of dental fear (p&lt;0.001). 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 correlated with: their feelings towards last dental visit, their past unpleasant experiences in dental clinics and the recollection of their parents, siblings and friends mentioning about fear of seeing the dentist (p&lt;0.001). <u>Since different factors have been shown to affect the dental fear level of children in Hong Kong and the PRC, further studies should be conducted to investigate the similarities and differences between the two population groups.</u></p>	<p><b>42</b> Utilization of dental care in the Thai Social Security Plan. C. HOSANGUAN*, S. TAWEEETHAWORNSAWAT, S. ITSARAVIRIYAKUL (Chulalongkorn Univ., Thailand)</p> <p>Basic dental benefits were added to the Thai Social Security scheme in January 1997. The purpose of this study was to investigate patterns of dental care utilization among beneficiaries during the first year under the Dental Social Security plan. Questionnaires were mailed to a probability sample of 723 employees working in Bangkok Metropolitan. 332 completed questionnaires were returned giving a response rate of 45.9%. The results showed that 54% of beneficiaries used dental services at least once in 1997, which was a significant increase in utilization rate compared to that in 1996 (45.1%, p=0.003). Type of dental services most frequently used included scaling (52.3%), fillings (48.9%), and extraction (33.5%). About 34.7% of beneficiaries had their dental expenses reimbursed by the Office of Social Security, with an average amount of 309 baht. Based on logistic regression analysis, factors found to be significantly associated with increased use of dental services were awareness of dental benefits (OR=2.57) and perceived impact of dental problems (OR=2.63). <u>It is concluded that the addition of dental benefits in the Social Security plan resulted in an increased use of dental services among beneficiaries.</u></p>
<p><b>43</b> Effect of Smear Layer Removal on Sealability of Two Sealers. S. RAVINDRANATH* (Faculty of Dentistry, University Malaya, Kuala Lumpur, Malaysia).</p> <p>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 selected and divided into 2 groups (1&amp;2). Group 1 teeth were used as control with the smear layer intact. In the group 2 teeth, the smear layer was removed using 15% EDTA and 5.25% NaOCl as irrigants. Two teeth from each group were subjected to scanning electron microscopy analysis to confirm the presence or absence of smear layer. The remaining 30 teeth in each group were subdivided into groups 1A, 1B, 2A and 2B. All teeth were obturated with laterally condensed gutta-percha technique. In groups 1A &amp; 2A, zinc oxide eugenol was used as a sealer and in groups 1B &amp; 2B Endomethasone eugenol was used as sealer. Leakage was assessed using 2% methylene blue solution. After 7 days the teeth were sectioned vertically and linear measurements of dye penetration was measured. The mean leakage values for group 1A was 6.5333, group 2A-3.6333, group 1B-3.9333 and group 2B-2.3333. Statistical analysis using student's T test was done. The values obtained were for groups 1A &amp; 2A t = 3.6106, p&lt;0.05, for groups 1B &amp; 2B t = 3.7238, p&lt;0.05, Groups 1A &amp; 1B t = 3.1271, p&lt;0.05 and groups 2A &amp; 2B t = 3.4943, p&lt;0.05. Significant difference was observed when the smear layer was removed and also when Endomethasone was used as sealer. <u>The leakage in the specimens without smear layer was significantly reduced irrespective of the sealer used. Endomethasone eugenol had less tendency for leakage compared to zinc oxide eugenol.</u></p>	<p><b>44</b> Effectiveness of Intracanal Medicaments in Inhibiting Root Resorption in Replanted Incisors. Y.L. THONG<sup>1</sup>, H.H. MESSER<sup>2</sup>, C.H. SIAR<sup>1</sup> and L.H. SAW<sup>1</sup> (<sup>1</sup>University of Malaya, Malaysia and <sup>2</sup>The University of Melbourne, Australia).</p> <p>The relative effectiveness of antibacterial and anti-inflammatory agents in intracanal medicaments in inhibiting external root resorption, which develops following avulsion and replantation, merits investigation. This study compared the periodontal resorptive response to two intracanal medicaments following replantation of incisors in eight Macaca fascicularis monkeys. The teeth were extracted, stored dry for 15 minutes and then replanted. After 11 days, root canals in the two experimental groups were medicated with either a calcium hydroxide paste (Pulpdent) or an antibiotic/corticosteroid (AC) paste (Ledermix), while teeth in the control group were left untreated. Two maxillary incisors (central and lateral) in each animal were treated with one medicament and the contralateral incisors were treated with the other medicament or were used as untreated controls. Mandibular incisors were included as additional controls. The animals were sacrificed after eight weeks of canal medication. Block specimens containing the teeth were prepared for histologic evaluation. One out of three 5 µm cross-sections cut every 500 µm was evaluated. A histomorphometric analysis according to the method of Andreasen JO (<i>Endod Dent Traumatol</i> 3: 269-87, 1987) examined the following parameters: periodontal inflammation and surface, inflammatory and replacement resorption. Both experimental groups showed significantly less inflammatory resorption (p&lt;0.05, Mann-Whitney test), with the Ca(OH)<sub>2</sub> group having a resorption index of 0.7(%) ± 0.8(S.D.) and the AC group having an index of 0.6 ± 1.6 as compared to the control with an index of 11.6 ± 10.3. Although the Ca(OH)<sub>2</sub> group showed an increase and the AC group a decrease in replacement resorption, the differences with the control were not significant. <u>The results indicate that calcium hydroxide inhibits only inflammatory resorption and not replacement resorption, while the antibiotic/corticosteroid medicament may inhibit both.</u> Supported by the University of Malaya, F245/96 and F287/97.</p>
<p><b>45</b> Comparative Healing When Diaket<sup>®</sup> &amp; Mineral Trioxide Aggregate are Used in Periradicular Surgery. J.D. REGAN, J.L. GUTMANN*, D.E. WITHERSPOON (Baylor College of Dentistry - Texas A &amp; M University System, Dallas, Texas, USA)</p> <p>The aim of this study was to investigate the healing of the periradicular tissues when either the polyvinyl resin, Diaket<sup>®</sup> or Mineral Trioxide Aggregate (MTA) were used as root-end filling materials. Non-surgical root canal treatments were performed on randomly allocated mandibular 3<sup>rd</sup> and 4<sup>th</sup> premolars in seven dogs. Subsequently, the root-ends were resected and ultrasonically prepared root-end cavities were filled with either Diaket<sup>®</sup> or MTA. Healing was evaluated at a 60-day post-surgical time interval. Histological sections were stained with either H&amp;E or Masson's trichrome stain and sections were evaluated at X20-X100. There was no statistical difference between the materials for the presence of inflammation or abscess formation. Whilst Diaket<sup>®</sup> demonstrated the greatest amount of new bone formed in the body of the surgical wound and adjacent to the resected root-end, the differences were not significant (at α = 0.05). Likewise, greater reformation of the periodontal ligament was seen in the Diaket<sup>®</sup> specimens but the difference was not significant (p = 0.2666). Significantly more bone formed adjacent to the MTA filling material (p = 0.0284). Whilst 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<sup>®</sup> for cementum deposition. <u>The overall healing in the periradicular tissues for both materials was favourable and the potential for complete regeneration of the periodontium adjacent to both materials was demonstrated.</u> This research was partially funded by the American Association of Endodontists Foundation.</p>	<p><b>46</b> Clinical Evaluation of Compomer in Primary Teeth: 3-years' results. LEUNG SK, WEI SHY<sup>*</sup> and HSE KMY, Paediatric Dentistry, The University of Hong Kong.</p> <p>The clinical performances of a compomer (Dyract) 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 Dyract and the other with TPH. Colour matching, marginal discoloration, marginal integrity, presence of recurrent caries and anatomic form were evaluated with the USPHS criteria at baseline (within 2 weeks) and after 6, 12, 24 and 36 months of clinical services. At 36 months, 86 restorations were evaluated. The cumulative failure rate for Dyract and Prisma TPH was 8.9% and 15.2% respectively. All the failed restorations had been placed in class II cavities. There was a significant difference between the two restoratives in marginal discoloration (Alfa: 47.7% and 69% respectively, p = 0.0451<sup>*</sup>), marginal integrity (Alfa: 52.3% and 73.8% respectively, p = 0.0487<sup>*</sup>) and occlusal wear performance (p &lt; 0.0001<sup>†</sup>). The average mean wear value at 36 months for Dyract and TPH were 172.5µm and 96.7µm respectively. The 36 months clinical performances of Prisma TPH was better than Dyract in marginal discoloration, marginal integrity and occlusal wear performances. In colour matching, recurrence of caries and anatomic form, Dyract was comparable to that of TPH. <u>In consideration of the ease of handling of Dyract and finite life-time of primary teeth, it is a suitable alternative restorative material for primary teeth.</u> (This study was partially supported by Dentsply Asia.) (*: Fisher exact test; †: Paired T-test)</p>
<p><b>47</b> 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)</p> <p>Results of early studies on ART (a technique which based on caries excavation with hand instruments followed by restoration with glass ionomer) showed that the survival rates of fillings placed in permanent teeth were satisfactory but that for fillings placed in primary teeth were lower. This study was conducted among pre-school children to assess the survival rate of ART fillings placed under real life situation in China using a newer material. A total of 170 ART fillings were placed in the primary teeth of 95 children aged 3-6 years by final-year dental students from the University of Hong Kong in a kindergarten in southern China using Ketac-Molar (ESPE). Another 509 ART fillings were placed using the same material in 374 children aged 3-4 years by local dentists. The fillings were evaluated by two calibrated examiners every 6 months. Over 90% of the fillings were evaluated at the 12-month follow-up. The 12-month survival rates of the Class 1 fillings placed by the dental students and the local dentists were 91% and 80% respectively (p=0.12) while that of Class 2 fillings were 63% and 47% (p=0.10). The difference between survival rates of the Class 5 fillings placed by the two groups of operators was small, both were about 80%. Only about one-third of the Class 3/4 fillings placed by either group of operators were satisfactory after 12 months. <u>These results showed that the 12-month survival rates of Class 1 and Class 5 ART fillings were satisfactory in Chinese pre-school children.</u> This study was supported by ESPE Dental-Medizin GMBH &amp; Co.</p>	<p><b>48</b> Antibacterial Properties of Local Plant Extracts Against Selected Plaque Bacteria. Fatihah, AR*, Othman, Y., Rahim, ZHA. (University of Malaya, 50603 Kuala Lumpur, Malaysia)</p> <p>The selection of antimicrobial agents for plaque control requires an understanding of the microorganisms involved, the agents used and their effects on both the bacteria and the host. Many plant extracts found locally have been reported to have some soothing and healing effect on subjects suffering from toothaches and periodontal complaints. In this study, extracts from two local plants (<i>Psidium</i> sp. and <i>Piper</i> sp.) were screened for their antimicrobial response against several plaque bacteria. Crude water extracts of rhizomes, leaves or stems of the plants were prepared. The decoctions were then aliquoted into vials and vacuum spin-dried for further analysis. <i>S. mitis</i>, <i>S. sanguis</i> and <i>Actinomyces</i> sp., the most common early colonizers of the supragingival enamel surface were selected for susceptibility tests against the extracts. The test was performed by inoculating a standard agar medium with a suspension of selected bacteria and applying disks impregnated with a known concentration of the various extracts. Following an 18-24 hour incubation period, inhibited growth zones around the disk were noted and measured. The LD<sub>50</sub> for the extracts was calculated. <u>Results obtained showed susceptibility of <i>Piper</i> sp. against selected bacteria is in the order of <i>S. mitis</i> &lt; <i>S. sanguis</i> &lt; <i>Actinomyces</i> sp. while for <i>Psidium</i> sp. it is <i>S. sanguis</i> &lt; <i>Actinomyces</i> sp. &lt; <i>S. mitis</i>.</u> Both extracts showed α-hemolytic activity against red blood cells. LD<sub>50</sub> of <i>Piper</i> sp. is 3.7mg/ml and the value is negligible for <i>Psidium</i> sp. at 5.0mg/ml.</p>