International Journal of Paediatric Dentistry 2005; **15:** 303–305

Abstracts from other journals

Editor: Paddy Fleming

Abstracts are presented as originally published or with only minor modifications

Emdogain does not prevent progressive root resorption after replantation of avulsed teeth: a clinical study. Schjott M, Andreasen JO. *Dental Traumatology* 2005; **21**: 46–50.

Emdogain has been shown in clinical and experimental studies to promote regeneration of all periodontal tissues: cementum with anchoring fibres, a functional, periodontal ligament and alveolar bone in connection with treatment of marginal periodontitis. The intention of this study was to analyse whether this regenerative capacity upon the periodontal ligament (PDL) also worked in a trauma situation where a significant number of PDL cells have been eliminated because of unphysiological storage or actual damage during avulsion or replantation, and furthermore, if ankylosis sites already established because of earlier replantation after avulsion could be surgically removed and application of Emdogain could revert the ankylosis stage to a normal PDL situation. The first treatment situation was tested in seven patients with a total of 16 avulsed teeth with varying time of extraoral storage. The teeth were extraorally endodontically treated, and the root and socket covered with Emdogain before replantation. All teeth demonstrated subsequent ankylosis, primarily diagnosed by a percussion test. The second treatment situation where an ankylosis was already established consisted of seven patients with a total of 11 teeth as a result of previous replantation after avulsion. These teeth were all extracted, the ankylosis sites removed, and the root and socket treated with Emdogain. After 6 months, all teeth showed recurrence of ankylosis. It is concluded that Emdogain was not able to prevent or cure ankylosis.

Prevalence of persistent pain after endodontic treatment and factors affecting its occurrence in cases with complete radiographic healing. Polycarpou N, Ng YL, Canavan D, Moles DR, Gulabivala K. *International Endodontic Journal* 2005; **38**: 169–178.

AIMS: To (i) determine the prevalence of persistent dentoalveolar pain following nonsurgical and/or surgical endodontic treatment conducted in a teaching dental hospital, and (ii) identify the risk factors associated with persistent pain after apparently successful root canal treatment. STUDY DESIGN: A total of 175 patients/teeth were reviewed 12–59 months following treatment. The patients were examined clinically and radiographically, and a detailed pain history obtained. Multiple logistic regression analysis was used to investigate the association between potential risk factors and persistent pain after successful endodontic treatment. RESULTS: The prevalence of persistent pain after successful root canal treatment was 12% (21/175). Treatment success was determined by the absence of clinical and radiographic signs of dental disease. The factors that were significantly ($P < 0{\cdot}05$) associated with persistent pain following endodontic treatment were: 'duration of preoperative pain' [odds ratio (OR) = 8·6], 'preoperative pain from the tooth' (OR = 7·8), 'preoperative tenderness to percussion' (OR = 7·8), 'previous chronic pain problems' (OR = 4·5), 'gender' (OR = 4·5) and 'history of painful treatment in the orofacial region' (OR = 3·8). 'Type of treatment received (surgical or nonsurgical treatment)' showed borderline significance at the 10% level. CONCLUSIONS: The presence and duration of preoperative pain from the tooth site, lasting at least 3 months, a positive history of previous chronic pain experience or painful treatment in the orofacial region, and female gender were important risk factors associated with persistent pain after successful endodontic treatment.

Maxillary incisor palatal erosion: no correlation with dietary variables? Chadwick RG, Mitchell HL, Manton SL, Ward S, Ogston S, Brown R. *Journal of Clinical Pediatric Dentistry* 2005; **29**: 157–163.

The objectives of the study were to examine a relationship between tooth erosion affecting the palatal aspects of permanent maxillary central incisors with dietary, behavioural and medical variables. The methods included 251 schoolchildren aged 11–13 years who were recruited to participate. Each subject had dental impressions of the palatal aspects of both upper central incisors recorded at baseline, and 9 and 18 months intervals. From these, electroconductive replicas were fabricated, mapped and compared using a surface matching technique. At the end of the study all participants underwent a structured interview that sought to assay the level of potential erosive dietary, behavioural and medical risk factors. Correlation analyses of the responses given in the final structured interview with the degrees of palatal tooth substance loss (both previous and measured) were under taken. The results showed: (1) The degree of previous erosion did not predict the level of measured ongoing erosion. (2) Brushing the teeth more frequently with fluoridated toothpaste correlated significantly with lower levels of ongoing erosion ($P = 0{\cdot}011$). It was concluded that: (1) Evidence of previous palatal erosion did not predict future erosion. (2) The application of topical fluoride as a by-product of tooth brushing may provide an element of protection against palatal erosion. (3) In view of the lack of correlation between exposure to potential risk factors and the level of ongoing palatal tooth surface loss in this study, other factors (such as an individual's susceptibility and salivary buffering power) may well be more important predictors. The clinical relevance included: Preventive advice to patients with dental erosion should not only include the use of topical fluoride, in the form of toothpaste, but recognize individual susceptibility to this condition.

Clinical outcomes for early childhood caries: influence of aggressive dental surgery. Graves CE, Berkowitz RJ, Proskin HM, Chase I, Weinstein P, Billings R. *Journal of Dentistry for Children* 2004; **7**: 114–117.

PURPOSE: The objective of this study was to assess the relationship between the number of stainless steel crowns (SSCs) placed, the number of surfaces at risk (SAR) post dental surgery, and the risk for relapse in patients treated for early childhood caries (ECC). METHODS: The study population consisted of 57 children treated for ECC under general anaesthesia, ranging in age from 2·3 to 7·3 years old at the time of entry. Dental surgery utilized an aggressive approach: teeth that had necrotic pulps or were nonrestorable were extracted; decayed primary mandibular incisors that could not be treated by stripping were extracted; primary maxillary incisors with three or more carious surfaces were extracted; single-surface lesions of primary molars that did not compromise cusp integrity were restored with intracoronal amalgam restorations; primary maxillary, incisors and canines with smooth-surface lesions affecting two or less surfaces were treated with intracoronal composites; primary molars and canines requiring vital pulp therapy were restored with SSCs; primary molars with caries lesions affecting two or more surfaces (including smooth-surface, white-spot lesions) were restored with SSCs; primary canines with caries affecting three or more surfaces were restored with stainless steel crowns; and topical fluoride was applied after all restorative therapy was completed. The cohort was examined for new caries lesions 6 months post dental surgery. Relapse was defined as the presence of new smooth-surface caries lesions as defined by Radike. Comparisons between relapse (R) and nonrelapse (NR) groups, with respect to the number of SSCs placed and the number of SAR, were performed using *t*-tests and Wilcoxon tests. A 0·05 level of significance was employed in all statistical tests. RESULTS: Twenty-one of the 57 (37%) patients relapsed. No statistically significant difference for the number of SSCs placed or SAR existed between the R group (SSCs: mean = 4·57, median = 4 ± 2·18; SAR: mean = 39·76, median = 40 ± 13·62) and the NR group (SSCs: mean = 5·44, median = 5·5 ± 2·62; SAR: mean = 39·98, median = 39·5 ± 15·19). CONCLUSIONS: The risk for relapse in children treated for ECC is not associated with the number

of SSCs placed or SAR; aggressive dental surgery for ECC does not result in acceptable clinical outcomes.

Dental pain in Maryland school children. Vargas CM, Macek MD, Goodman HS, Wagner ML. *Journal of Public Health Dentistry* 2005; **65**: 3–6.

OBJECTIVE: To describe the lifetime prevalence of dental pain among school-age children in Maryland, USA. METHODS: Data come from the Survey of Oral Health Status of Maryland School Children conducted in 2000–2001. History of dental pain, as reported by an adult respondent, was analysed for 2411 kindergarten and third-grade students. Percentages with their 95% confidence intervals were calculated to obtain state representation of the distribution of dental pain by sociodemographic characteristics and caries status. RESULTS: Overall, 11·8% of Maryland school-age children in kindergarten and third grade have had some dental pain. Among children who have had caries, the report of dental pain increases to 28·2%. Children from families with low educational attainment, or those eligible for free or reduced meals, or covered by Medicaid were more likely to have experienced dental pain. CONCLUSION: Almost a third of Maryland children in kindergarten and third grade who have caries have experienced dental pain.

The Wand versus traditional injection for mandibular nerve block in children and adolescents: perceived pain and time of onset. Palm AM, Kirkegaard U, Poulsen S. *Pediatric Dentistry* 2004; **26**: 481–484.

PURPOSE: The purpose of this study was to compare the perception of pain and time of onset in relation to mandibular alveolar nerve block administered by a computerized anaesthesia delivery system (i.e. the Wand) and a traditional anaesthesia system (i.e. the syringe). METHODS: This study was conducted according to a split-mouth design, with both types of injections being given to all patients. Subjects consisted of 33 patients between 7 and 18 years of age requiring local anaesthesia for dental restorations in both sides of the mandible. All patients were blindfolded, and the sound from the Wand machine was activated during both types of administration. Topical analgesic was placed in the area of the injection site in all cases. Pain ratings were obtained using a 10-point visual analogue scale. Time of onset was measured from withdrawal of the needle to when numbness of the lower lip was reported. RESULTS: The computerized anaesthesia delivery system resulted in significantly lower pain ratings than the traditional syringe. No difference could be found in time of onset between the two methods. CONCLUSIONS: Mandibular alveolar block analgesia seems to be less painful when using the Wand than when using a traditional syringe.

Materials used to restore Class II lesions in primary molars: a survey of California paediatric dentists. Pair RL, Udin RD, Tanbonliong T. *Pediatric Dentistry* 2004; **26**: 501–507.

PURPOSE: The purpose of this study was to determine which materials were most commonly used by paediatric dentists in California, USA, to restore Class II lesions in the primary dentition. METHODS: A questionnaire consisting of 18 multiple-choice questions was mailed to all 440 active members of the California Society of Pediatric Dentistry. The questions related to the practitioners' material of choice for restoring Class II lesions in primary molars. RESULTS: A 66% response rate was received. For 57% of the respondents, amalgam was the material of choice for restoration of Class II lesions in primary molars. Twenty-nine per cent selected composite, 5% glass ionomer, 6% compomer and 1% (one practitioner) stainless steel crowns. Sixty-eight per cent responded that amalgam has historically proven to be a safe, reliable and affordable material. The main reasons cited for using composite resin were 'patient preference' (86%) and 'better aesthetics' (78%). Most practitioners used either a single-step (fifth-generation) or a two-step (fourth-generation) bonding agent (53% and 35%, respectively). When using a nonamalgam restorative material, 49% of practitioners used a traditional Class II amalgam preparation. The role of dental literature in treatment decision-making was not significantly related to the restorative material used. CONCLUSIONS: While amalgam was the most common material used for Class II restorations, nonamalgam materials were significantly popular among California paediatric dentists.