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Oral Session O16 - Traumatology

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Oral Session O16/Traumatology

016-116

Avulsion guidelines – do they agree?

P. SHAH, S. PAREKH, D. R. MOLES & P. ASHLEY UCL Eastman Dental Institute and Hospital, London, UK

Introduction: There are several guidelines on the management of avulsed permanent teeth in children. These guidelines were assessed using the Appraisal of Guidelines Research and Evaluation (AGREE) instrument in a previous study. AGREE is an international collaboration of researchers seeking to improve the quality and effectiveness of clinical practice guidelines by establishing a framework for their development, reporting and assessment. There has yet to be a comparison of the recommendations by different guidelines for management of avulsion. The aim of this study was to compare guidelines on the management of avulsed permanent teeth in children with respect to clinical recommendations and quality as assessed by the AGREE score.

Materials and methods: Guidelines on the management of avulsion in permanent teeth were identified. The content of these guidelines was then compared in the following areas: Management or advice at site of injury, transportation media, replantation and follow-up. Scores for all AGREE domains were also compared.

Results: Four guidelines were identified on the management of avulsion in permanent teeth. There was variation in guidance relating to splinting times or antibiotic usage. With respect to AGREE scores, the authors could only recommend use of one of the guidelines (with modifications).

Conclusions: Guidelines for the management of dental trauma were not consistent in their advice. The majority of these guidelines were of poor quality as determined by the AGREE instrument. Further international collaboration is needed to produce a single evidence-based guideline that is easy to follow and unambiguous.

016-117

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Effect of nonsetting calcium hydroxide and MTA on human dentine following long term application

W. A. TWATI, D. J. WOOD, T. W. LISKIEWICZ & M. S. DUGGAL

Department Paediatric Dentistry and Department of Dental Materials, Leeds Dental Institute, School of Mechanical Engineering, University of Leeds, UK

Introduction: The aim of this study was to evaluate the effect of nonsetting calcium hydroxide and mineral trioxide aggregate on the hardness and the modulus of elasticity of human dentine from extracted teeth.

Materials and methods: Twenty seven freshly extracted single rooted human teeth were used. Internal ethical approval was obtained for the use of human tissue. Teeth were decoronated and the roots were then sectioned longitudinally into two equal slabs with nine slabs used in each group. A thin layer of nonsetting calcium hydroxide (CH) or mineral trioxide aggregate (MTA) was applied on the slabs, whilst the control group had no application of a medicament. The total period of the study was 3 months and dentine hardness was measured using nanoindentation at 3 months. The modulus of elasticity was also calculated.

Results: A significant median reduction in the hardness of dentine was observed (P < 0.001) after 3 months of CH and MTA application with the most in MTA (7.78), followed by CH (11.22)

and control (23.00). Also the modulus of elasticity was significantly lower (P < 0.018) for MTA compared with CH and the control. **Conclusion:** It appears that there is a significant reduction in dentine hardness and modulus of elasticity after CH and MTA application compared to the control group. A reduction in these parameters has previously been shown for calcium hydroxide, but MTA seems to have even a more profound detrimental effect, possibly due to its high pH.

016-118

Dental and orofacial injuries among snowboard riders, Turkey

E. CAGLAR, O. O. KUSCUM, S. ÇALIŞKAN & N. SANDALLI Department of Paediatric Dentistry, Dental School, Yeditepe University, Istanbul, Turkey

Introduction: Snowboarding has increased in popularity during the last decade and is also conspicious for its dramatic rise in association with serious injuries. Aim of the present study was to evaluate the occurrence of dental or orofacial trauma in snowboarders in Turkey, as well as to investigate if snowboarders were aware of any protetective measures.

Patients and methods: The study population (n = 86) was gathered regarding scheduled programme data of National Snowboard Branch of Turkish Ski Federation. Information was obtained in December 2008 from personal interviews and questionnaires answered by snowboarders in SnowFest at a major winter ski center; national competing snowboarders in the Annual National Snowboard Summer Camp at Ankara, and registered clubs' snowboarders of National Snowboard Federation, Turkey.

Results: Only 17 snowboard riders had already been affected by orofacial trauma. Regarding age, adolescents counted 38 (44.1%) of all snowboard riders while 48 of them (55.9%) were young adults. Regarding years of experience, 1-2 yrs of experience counted 2 cases of dental and orofacial trauma, 3-5 yrs counted 4 cases, 5-9 yrs counted 7 cases and over 10 yrs counted 4 cases respectively. Results revealed that all snowboarders were aware of the need of wearing a helmet while 50 out of 86 of them (58.1%) also demonstrated its usage.

Conclusions: It should be concluded that from the moment a youngster starts to practice snowboard riding, (s)he should be encouraged to wear a helmet to get used to this sensation. A great responsibility lies via dentists, to inform about the importance of wearing a helmet and protective measures and the consequences if not worn.

016-119

Choosing patient-centred outcome measures for a randomised controlled trial involving nonvital incisors <u>Z. MARSHMAN¹</u>, M. HALL¹, J. PORRITT¹, S. ALBADRI² & H. D. RODD¹

¹Department of Oral Health and Development, School of Dentistry, Sheffield; ²Department of Paediatric Dentistry, School of Dental Science, University of Liverpool, UK

Introduction: The value of user involvement in clinical trials has gained widespread recognition and is mandatory for many ethics committees and funding bodies. The aim of this study was to involve children and their parents in choosing outcome measures

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for a randomised controlled trial on the management of traumatised nonvital immature incisors.

Patients and methods: Children who had experienced extensive treatment for a traumatised nonvital incisor, together with their parents, were recruited from a UK hospital paediatric dentistry department to participate in focus groups. These were guided by a list of topics developed through informal discussions with patients and parents on clinic. The child and parent focus groups were held in separate meeting rooms, were audio-taped and transcribed verbatim. The data were analysed using a framework approach.

Results: Five children and six parents participated in the focus groups, which lasted 45–60 min. The main topics raised by the children included: number of visits required, length of each visit and apprehension about the nature of the treatment. Parents were concerned about the appearance of their child's traumatised tooth and the long-term prognosis of the tooth. Outcome measures were designed to capture these concerns and were incorporated into the RCT study design.

Conclusion: Service users can be involved in the design of RCTs through the use of qualitative methods to choose appropriate outcome measures. Using outcome measures that address the concerns of patients themselves enhances the RCT design and its ability to assess the effectiveness of treatments from the patient's perspective. Funded by: Trent RDSU User Involvement in Preprotocol Work Awards.

O16-120

Direct pulp-capping in traumatized teeth with 'homemade' MTA: a report of cases J. JAE CHEOUN LEE

Seoul Children's Dental Center, Seoul, Korea

Introduction: MTA has been accepted, for a number of years, as a biocompatible dressing material for use in direct contact with vital pulp tissue. But MTA's high cost continues to hinder its widespread use in daily practice. However, the ingredients of commercial MTA are very similar to those of Portland cement. Here I will report several cases of traumatized teeth with pulp exposure that were treated with direct pulp-capping using a 'homemade' MTA and followed up for some years.

Clinical management: Case 1: (Traumatic pulp exposure in primary tooth) The exposed pulp was disinfected and capped with 'home made' MTA. The tooth was then restored with composite resin and followed up for 3 years. Normal exfoliation occurred. Case 2: (Traumatic pulp exposure in young permanent tooth). The exposed pulp was disinfected and capped with 'home made' MTA and restored with composite resin and followed up for 5 years. There has been no sign of pulp infection. Even though the resin has been detached once, vitality of the pulp has been maintained.

Case 3: (Traumatic pulp exposure in young permanent tooth) There was a large pulp exposure in an immature permanent tooth with a still open root apex. Pulpotomy was done and the tooth was filled with 'home-made' MTA. The crown was then built up with composite resin. The patient has been followed up for 4 years and shows normal root growth and continued pulp vitality.

Conclusion: The 'homemade' MTA can be used as an effective direct pulp-capping material. But the dark shadow it imparts to a tooth can cause esthetic problems in clinical situations. Development of a better opaque material that can block the darkness is needed.

016-121

Tooth fragment reattachment – a report of two cases B. KAUR Department of Pediatric Dentistry, Institute of Dental Sciences,

Jepartment of Pediatric Dentistry, institute of Dental Sciences, Jammu University, Jammu, India

Introduction: Anterior crown fractures have been estimated to be prevalent in about one quarter of the population under the age of 18 years. Traumatic injuries have a great psychological impact both on the patient as well as their parents. The early restoration of the fractured teeth is thus important esthetically, as well as functionally. Restoring the fractured tooth with its original tooth fragment forms a rapid, conservative and esthetic restoration.

Clinical management: Present case reports describe reattachment of tooth fragment of maxillary central incisor of a 10-year-old female and a 14-year-old male using a mini pin and acid etch technique thereby, maintaining natural wear resistance and esthetics of the patients, respectively. One year after the treatment the patients were reexamined and the restorations were found to be intact and functioning.

Conclusion: Tooth fracture reattachment is a biological and esthetically acceptable approach in managing traumatic injuries to teeth. A careful follow up is essential in determining its long term success.

O16-122

Late presentation of traumatised anterior teeth – management of two cases

S. STEPHEN

Department of Paediatric Dentistry, Sydney Dental Hospital, Sydney, Australia

Introduction: Management of acute dental trauma is routinely carried out by most dentists. There are well defined guidelines for management of these acute presentations. However less regularly we do see patients who suffered trauma several days and weeks earlier and have not received or sought immediate care.

Clinical management: This report outlines presentation, management and review of a 15-year-old and a 10-year-old patient who presented to the hospital clinic a few days after they suffered trauma to the anterior teeth namely extrusive luxation with associated interference with occlusion. The clinical management of extrusive luxation of mature anterior teeth becomes challenging when patients present with tissues which have started to heal and at a stage when manual / finger repositioning and stabilisation is not an option. Slow reposition using mild orthodontic forces were used in these two cases with very good results. Some of the involved teeth including those with mature apices continued to have vital pulps which greatly increased their long term prognosis. These two cases were followed up for over 12 months. Fixed orthodontic therapy is not an option for clinicians who are not familiar with using orthodontic forces which makes management of these cases more complicated.

Conclusion: Management of late presentation of traumatised anterior teeth especially with extrusive luxation injuries is challenging. Clinicians should be able to manage these cases effectively using mild orthodontic forces with good results. Basic knowledge on using fixed orthodontic therapy will assist the clinician in effectively managing these cases. Current trauma guidelines do not cover management of late presentation of extrusive luxation injuries.

O16-123

Association between trauma to primary incisors and various types of root resorption

G. HOLAN & K. SHEINVALD-SHUSTERMAN Department of Pediatric Dentistry, The Hebrew University – Hadassah School of Dental Medicine, Jerusalem, Israel

Introduction: We evaluated the association between evidence of traumatic injuries in maxillary primary incisors and external root resorption.

Materials and methods: Clinical and radiographic trauma-related major and minor signs observed in the first dental visit of 727 preschool children, were used to evaluate the association between various types of external root resorption and evidence of trauma. Major signs included: crown fracture, coronal discoloration, internal resorption, pulp canal obliteration, fistula, and periapical lesion. Minor signs included: enamel cracks, sensitivity to percussion, dull or metallic sound on percussion, increased mobility and widened periodontal ligament. Children were divided into groups: CT-certainly traumatized (presenting major signs or combination of three minor signs), PT-probably traumatized (presenting 1 or 2 minor signs) and NT-not traumatized. Digit sucking habits were recorded.

Results: CT-group had 464 children, PT-group - 103 and NT-group - 160, with no gender predilection. 189 children presented various types of external root resorption. The most common type was Atypical Root Resorption (ARR) (8.8%) followed by physiologic resorption (8.3%), inflammatory resorption (INFRR) (4.6%) and resorption associated with expansion of the follicle of the permanent successor (DS) (4.4%). All children with ARR, INFRR and DS were in the CT-group. 319 (59.8%) children in the CT-group did not present any type of root resorption. ARR was not significantly associated with digit sucking.

Conclusions: The findings of the present study show that not every injured primary incisor presents external root resorption. However, INFRR, ARR and DS can be considered as evidence of previous dental trauma to the primary incisors.

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