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Oral Session O09 - Dental Anomalies 1

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# Oral Session 009/Dental Anomalies 1

#### O09-63

#### A novel approach for the management of an odontome

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**Introduction:** Odontomes are hamartomatous developmental malformations of odontogenic origin which manifest as denticles, or amorphous masses comprising of all, or some of the dental tissues. They commonly occur in the pre-maxillary region and associated complications include delayed or non-eruption of permanent teeth, retention of the primary teeth and dentigerous cyst formation. Management usually requires both surgical and orthodontic intervention. We describe the spontaneous eruption of an impacted central incisor, associated with an odontome, without surgical intervention in a 9 years old Chinese boy.

**Clinical management:** Clinical and radiographic examinations revealed the presence of an odontome inhibiting the eruption of the permanent maxillary left central incisor. Consequently, the adjacent lateral incisor had tipped mesially to occupy the space intended for the central incisor. A maxillary removable appliance was fitted to distalise the mesially tipped lateral incisor to create space for eruption of the impacted central incisor prior to surgical removal of the odontome. After 2 months, the lost space was regained. Furthermore, this intervention appeared to initiate eruption of the previously unerupted central incisor despite the presence of the odontome. Subsequently, the regained space was maintained and after 7 months, the central incisor erupted spontaneously. Nevertheless, the position of the odontome remains unchanged so the patient is currently under regular review.

**Conclusion:** It appears that spontaneous eruption of an unerupted tooth associated with an odontome is possible without surgical intervention provided factors such as size and location of the odontome, position of the unerupted tooth and space available are favourable.

#### **O09–64**

# Microabrasion techniques used by paediatric dentists on the UK specialist list.

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**Introduction:** Microabrasion is a technique for the removal of mottling and opacities from enamel. First used in 1916, it enjoyed a re-discovery in the 1980's. The aim of this audit was to investigate the different techniques used by paediatric dentists in the U.K.

**Materials and methods:** A questionnaire was sent out to 226 paediatric dentists, inquiring about their microabrasion technique.

**Results:** Of 164 returns (72.6%), 156 were usable. One hundred and twenty one respondents actually used the microabrasion technique. Some 43 (35.5%) used 18% hydrochloric acid (HA) and 71 (58.7%) used 30–50% orthophosphoric acid (OA). The majority of respondents used pumice as their abrasive and a small

number used OA with no abrasive. A rubber cup was the most popular method of application. For HA, most used 5 or 10 s applications, OA was used for slightly longer, 10 or 15 s. The maximum number of applications per visit varied with HA; approximately a third felt 5 applications were appropriate, a third felt 10 applications were acceptable; the remainder did not have a common opinion. For OA most chose three applications per visit. The majority of respondents felt 4 weeks between visits of microabrasion were suitable and that the maximum number of microabrasion appointments appropriate was 2 for HA and 3 for OA.

**Conclusions:** Microabrasion techniques were mostly split into two groups depending upon acid used. The remaining steps for the techniques were similar apart from the number of applications per visit; this increased by a factor of 2–3 when HA was used.

#### **O09-65**

### Generalised short roots and Vitamin D deficiency in absence of skeletal anomalies

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**Introduction:** A generalised short root is an unusual dental anomaly and is often an incidental radiographic finding. The differential diagnosis includes various systemic causes, Dentinal Dysplasia Type 1, Stevens-Johnson syndrome, Down syndrome, Aarskog syndrome and Rothmund-Thompson syndrome. Short root anomaly (SRA) is where the roots are developmentally very short and blunted with a crown root ratio equal to or less than one. SRA tends to occur in families and is related to hypodontia. The protocol used to investigate generalised short roots in the permanent dentition is presented using actual cases and the issues in the clinical management over 3–4 years are outlined.

#### Patients and methods:

**Case 1:** An 11 year old female with unremarkable medical history presented following early exfoliation of a permanent lateral incisor. Clinically, all primary teeth had exfoliated and the erupted permanent teeth were normal in colour, size and shape. Radiographically, there was generalised shortening of roots, and histological examination showed a normal dentin structure.

**Case 2:** A 13 year old female with unremarkable medical history presented with concerns about her appearance. The teeth had unusual morphological features, including bulbous clinical crowns and abnormal root anatomy in the primary dentition, with dens invaginatus and taurodontism in the permanent dentition. Radiographically, the dental age was delayed compared to chronological age and alveolar bone loss was noted.

**Conclusion:** Both cases were subsequently diagnosed with Vitamin D deficiency, but without evidence of any skeletal anomalies. The importance of Vitamin D in the etiology of generalised short roots has yet to be defined.

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#### **O09-66**

# Hypodontia in a paediatric orthodontic population in Venezuela

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**Introduction:** Congenitally missing teeth may produce malocclusion, with aesthetic and functional disorders affecting the developing dentition. The term hypodontia applies to agenesis of less than 6 permanent teeth, excluding third molars. The objective of this study was to determine prevalence and distribution of hypodontia in a paediatric orthodontic population in Caracas, Venezuela.

**Materials and methods:** 607 dental records (panoramic and periapical X-rays, intraoral photographs) from patients aged 5–11 years, of an interceptive orthodontic clinic were studied for agenesis of permanent teeth, excluding third molars. Patients with syndromes or cleft lip or palate were excluded.

**Results:** Variations in tooth number were present in 12.27% of this population. Hypodontia affected 25 non-syndromic patients (4.15%), 13 with unique tooth agenesis and 12 with multiple tooth agenesis, none presented with 6 or more missing teeth. No significant difference between genders was noted. Most affected teeth were the upper lateral incisors (40%), followed by lower second premolars (22.50%). Upper second premolars and lower lateral incisors were equally affected (15%) followed by lower second molars (7.5%). The maxilla was more affected (55%) when compared with the mandible (45%). Symmetry in distribution of agenesis was exhibited by the maxilla, while the left premolar region was most affected in the mandible.

**Conclusion:** Overall results agree with other Latin-American studies and differ from those carried on Caucasian or Asian populations. Ethnic variations are evident in the prevalence and distribution of hypodontia.

#### **O09–67**

# Evaluation of sealants retention in MIH molars, following different methods of application

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**Introduction:** Permanent MIH molars usually present serious clinical problems. Aim of this study was to evaluate the 4 years retention rate of fissure sealants applied in such molars using two different application methods.

**Patients and methods:** Fifty four MIH children aged 6–7 years, participated in the study from. The study was approved by the Scientific Committee of the Institute. Selection criteria: Presence of at least two fully erupted caries free upper/lower first permanent molars in the opposite sides of the mouth, with mild defects without breakdown. Following parental consent, sealants were applied in each child under a half-mouth experimental design. Group 1: On a randomly assigned first molar in one side of the mouth sealants (Fissurit<sup>®</sup>) were placed using an adhesive (Onestep<sup>®</sup>) prior to sealant application. Group 2: Sealants were applied on the opposite same tooth using the conventional technique. Children were seen biannually, where a preventive program was applied, without replacing any lost sealant.

**Results:** In 2008, 4 years after the beginning of the study (2004), 47 sets of molars (94 teeth) were available for blind evaluation. Teeth in Group 1 presented better retention rate; 70.2% were fully sealed, 29.7% partly sealed and none unsealed. Reversely Group 2 revealed 25.5% fully sealed, 44.6% partly sealed and 29.7%

unsealed teeth (P < 0.001). Both groups revealed decreasing retention rate during the 4 years period (P < 0.001); there was no difference in the caries increment rate and breakdowns at the end of the study (P > 0.01).

**Conclusion:** In hypominerilized molars sealants appear to have greater retention when applied using adhesive prior to sealant.

#### **O09–68**

### Caries around Nickel Chromium adhesive cast onlays – an audit

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**Introduction:** Adhesive nickel chromium cast onlay restorations (COR) provide an effective restoration for paediatric patients with inherited or acquired severe enamel defects. However when compared to stainless steel crowns (SSC) require more visits for placement, are more expensive and show no difference in quality or longevity. Following the clinical observation of several patients with caries associated with COR restorations an audit of the nickel chromium COR restorations placed in the Unit was carried out.

**Patients and methods:** Case notes for 31 patients (19 male, 12 female) treated between 2003 and 2008 with COR were traced through laboratory records, examined and data recorded retrospectively on a proforma. The total number of Ni Cr restorations placed was 145.

**Results:** Tooth type: 114 (79%) molars. 55% patients were diagnosed with inherited enamel defects, 22% erosion. 35% were placed under rubber dam, 29% with cotton wool isolation, 32% isolation was not recorded. 96% were cemented with Panavia.

Failures: Nineteen onlays failed (13%), 18 (12%) due to caries, the mean age of restoration at failure was 35 months.

**Conclusion:** The failure rate due to caries (12%) in this audit was high. Use of a full coverage SSC may offer advantages. Regular follow up and radiographs to monitor for caries in all patients is essential.

#### O09–69

# Frequency of referrer- and child-reported teasing in relation to visible enamel defects

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**Introduction:** Children and adolescents with dental differences may be subject to appearance-related teasing. This study investigated the frequency of teasing amongst children referred to a dental hospital for management of enamel defects.

**Materials and methods:** Questionnaires were sent to 88 patients who had received microabrasion and/or composite restorations, for a variety of enamel defects, at the Charles Clifford Dental Hospital, Sheffield, UK. Participants were asked whether their dental appearance had led to teasing at school. Referral letters were also examined to determine whether the dentist had indicated that appearance-related teasing was a known concern. The level of agreement between the child and the referring clinician was determined.

**Results:** Anonymous replies were received from 62 children giving a response rate of 70%. The mean age of participants was 11.9 years and 42% were male. 35 (56.5%) indicated that they had been teased about their dental appearance, while 34 (54.8%) referral letters specifically mentioned teasing. However, there was

only 41.9% agreement between the patient and their referring practitioners. A significantly greater proportion of boys (73%) reported dental appearance-related teasing compared to girls (44%) (P = 0.38 chi-squared test). There was no significant difference in frequency of child-reported teasing between primary school-aged (7–11 years) and secondary school-aged (12–16 years) participants.

**Conclusion:** This study found that a high number of children with enamel defects have experienced teasing at school. Clinicians need to adopt a sensitive approach to elicit this information, which may not be volunteered at first presentation, so that appropriate interventions can be offered.

#### **O09-70**

#### **Hypomineralization on primary and permanent teeth** S. RIENHOFF<sup>1</sup>, J. RIENHOF<sup>1</sup> & R. SCHILKE<sup>2</sup>

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**Introduction:** Aim was to evaluate: (i) which primary teeth (PT) can suffer from hypomineralization; (ii) how often patients with diagnosed permanent molar-incisor-hypomineralization (MIH) have had hypomineralization in the PT before; and (iii) which dental treatments are necessary on the affected teeth.

Patients and methods: From 11/2006 to 04/2008, patients of a paediatric dental practice in Hanover (Germany) were examined for hypomineralization in PT or teeth typically suffering from MIH. The resulting treatments were documented. 69 patients were examined (mean age: 7.3 years). 31 of these patients showed hypomineralized PT. The distribution of the hypomineralized teeth were as follows: E's: 52%; D's: 15%; C's: 15%; B's: 10%; A's: 8%). 44% of the affected teeth in the upper and 34% in the lower jaw were treated with fillings or paediatric crowns. MIH was diagnosed in 46 of all patients. Among 43 patients with MIH in the mixed dentition, 14 (33%) had hypomineralized PT as well. 35 of the second primary molars were diagnosed as hypomineralized (75%). Affected MIH-teeth were: lower first molars (35%), upper first molars (30%), upper central incisors (17%) and each of the remaining upper and lower incisors (6%). Caries and/or loss of enamel were found twice as often in lower as in upper molars. 29% of the teeth in the upper and 47% in the lower jaw had to be treated with fillings and/or crowns.

**Conclusion:** 33% of MIH patients already showed hypomineralization in the primary dentition. Therefore, the mineralization disturbances must have started before the calcification of the first permanent molars. Copyright of International Journal of Paediatric Dentistry is the property of Blackwell Publishing Limited and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use. Copyright of International Journal of Paediatric Dentistry is the property of Blackwell Publishing Limited and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.