

# Poster Prize

pz1

## Dental anxiety and pharmacological management of children referred for sedation

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**Aim.** To evaluate the level of dental anxiety in children referred to the Sedation Assessment Clinic in Glasgow Dental School and Hospital and report on the pharmacological management selected.

**Method.** A prospective, clinical study of children aged 6–16 years referred to the Clinic between March 2004 and February 2005. The children were invited to complete the following questionnaires: the Modified Child Dental Anxiety Scale (MCDAS), the Children's Fear Survey Schedule (CFSS) and the Visual Analogue Scale (VAS). One researcher (EA) supervised the questionnaires.

**Results.** From a total of 28 children, 13 male; mean age 12.28 years (6 to 15 years) and 53.5% of the patients were from the poorest social economical areas. Anxiety levels were high: the mean MCDAS score was 27.9 (range 17 to 38, CI 2.1) and 32% of the subjects scored over 31, the mean CFSS score was 38 (range 18 to 63, CI 4.2) and 43% scored over 38 and the mean VAS score was 4.6 (range 0–10, CI 1.0). With respect to the pharmacological management, 17 (61%) children were referred for intravenous sedation (IVS), 9 (32%) for inhalation sedation (IHS) and 2 (7%) for general anaesthesia.

**Conclusion.** The majority of the children were highly anxious adolescents. The most common form of pharmacological treatment was intravenous sedation.

pz2

## Investigation of missed appointments amongst cleft lip and palate children

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**Aim of the research.** Children with a cleft lip and/or palate have considerable treatment needs. These often necessitate frequent hospital appointments, placing excessive demands on family life. This study sought to determine the number of scheduled and missed dental appointments for cleft children within Sheffield Dental Hospital.

**Methods.** 45 cleft patients (mean age 8.8, range 3–14 years) were identified from an established cleft database. Subjects were matched for age, gender and postcode with 45 non-cleft patients. Attendance data were determined, for 12-month period, by referring to the hospital's computerised appointment system and individual dental records. Distance travelled to the hospital was calculated for each patient using a distance-finder website.

**Principal results.** Patients with a cleft lip and/or palate had significantly more dental appointments (mean = 4.5, SD = 2.07, range = 1–9) than their non-cleft peers (mean = 3.3, SD = 2.35, range = 1–9) ( $P < 0.05$ , independent sample  $t$ -test). Furthermore, cleft patients missed a significantly greater proportion of their appointments than did non-cleft children (24.6% versus 11.1%). Interestingly, patients with a bilateral cleft lip/palate were significantly more likely to fail a paediatric dentistry appointment than patients with a unilateral cleft lip/palate. However, age, gender and distance travelled had no significant effect on attendance rates. Paediatric dentistry had the highest rate of missed appointments (24.6%), followed by the multidisciplinary clinic (9.2%) and orthodontic clinics (8.8%).

**Conclusion.** Further work is needed to identify risk factors for poor attendance and to develop strategies to reduce the frequency of failed appointments in this priority group.

pz3

## Differential diagnosis in a case of facial asymmetry

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A case is presented of a 4-year-old boy who presented to the Department of Paediatric Dentistry at the Royal London Hospital with facial asymmetry including left microtia, partial microdontia, hypodontia and expansion of the maxillary alveolus. Further discussion relieved that the left kidney and toes on his left foot were diminutive. The differential diagnosis of the asymmetry is explored especially in comparison to a case of segmental odontomaxillary dysplasia. The management of this case will also be discussed.

pz4

## Investigation of pulpal innervation and inflammation in molar incisor hypomineralisation

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**Aims.** Molar incisor hypomineralisation (MIH) is a common clinical condition where first permanent molars and incisors present with enamel opacities and post-eruptive enamel loss. Some patients complain of dentine hypersensitivity in everyday life as well as during dental treatment. It has been suggested that these symptoms may be exacerbated by an underlying pulpal inflammation, although there is no biological evidence to support this theory. The present study therefore sought to determine the pulpal status of MIH teeth using an immunocytochemical approach.

**Methods.** The experimental material comprised 25 sound and 19 MIH first permanent molars, obtained from children requiring routine dental extractions under general anaesthesia. Pulp sections were processed for indirect immunofluorescence using combinations of: i) protein gene product 9.5 (a general neuronal marker), ii) leucocyte common antigen (a general immune cell marker) and iii) *Ulex Europaeus* I lectin (a marker of vascular endothelium). Image analysis was then used to determine the percentage area of staining of each label.

**Results.** Innervation density was significantly greater in pulp horns and subodontoblastic region of MIH teeth as compared to sound teeth ( $P < 0.05$ , independent sample  $t$ -test). Immune cells were most abundant within the pulps of MIH teeth exhibiting post-eruptive enamel loss. Vascularity was found to be similar for both MIH and sound teeth, but was significantly greater in reportedly hypersensitive MIH samples.

**Conclusion.** Clinical management should be directed towards early prevention of pulpal inflammation, thereby avoiding possible sensitisation of pulpal nerves.

pz5

## **Paediatric radiographic assessment in General Dental Practice**

**A. GEDDES\* & P. J. WATERHOUSE**

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**Aims.** The aims of this study were to assess General Dental Practitioners' (GDPs) familiarity with guidelines on bitewing radiographs (BWR); to investigate the use of BWR in relation to a child's caries risk status (according to the FGDP guidelines) and to determine the frequency of use of DPTs.

**Method.** Postal questionnaires were sent to an opportunistic sample of GDPs in the north east of England. The respondents were asked to complete a questionnaire for each of the next 15 children seen ( $\leq 16$  yrs).

**Principle results.** A 70% response rate was achieved with questionnaires being completed for 264 children. 57.9% (11/19) of GDPs stated they were familiar with recognised guidelines relating to the use of BWR and 90.9% of these found them helpful. However, only 38.8% of the total number of high risk patients had BWR. The commonest reason for obtaining a DPT in moderate and low risk patients was for orthodontic assessment. In practices with a DPT machine, 43.1% of children underwent DPT compared to only 17.4% of those children in a practice without a DPT machine.

**Conclusion.** BWRs may be underutilised by GDPs, especially in high risk children and appear to be used less in practices possessing a DPT machine. It may be beneficial to alert GDPs to the FGDP or SIGN guidelines, especially in view of the philosophies of minimal intervention advocated by Options for Change.

pz6

## **An audit of cardiac antibiotic prophylaxis used under general anaesthetic**

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*Birmingham Children's Hospital*

**Aims.** To establish if current British National Formulary (BNF) guidelines are followed, ascertain the ease of identifying patients needing cover and advice given by cardiologists.

**Methods.** Data were collected from 35 patients aged 2–15 years with cardiac conditions. Information obtained included: the patient's age, weight, heart condition, advice from a cardiologist, dental treatment, who prescribed and gave the antibiotics.

**Results.** Heart conditions were categorised according to guidelines produced by the working group of the British Cardiac Society Clinical Practice Committee and Royal College of Physicians Clinical Effectiveness and Evaluation Unit 19/04/04. 34% were high, 46% moderate and 20% low risk of infective endocarditis. 28% had current advice by cardiologists. 95% of cover was prescribed by the dental SHO and administered by the anaesthetist. In 6% of cases the prescription was altered by the anaesthetist. Post-operative doses were administered by the nurse, in 9% of cases this was not done.

**Conclusions.** The BNF guidelines were followed in the majority of cases. Encouraging a card scheme identifying the cover required would be beneficial. If recommendations from April 04 were implemented 20% of our patients would not have required cover. As a profession we must await further guidance in this area.

pz7

## **A storybook for children requiring dental extractions under general anaesthesia**

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**Aim.** To increase the preparedness and reduce the anxiety of children and their carers attending for dental extractions under general anaesthesia (G.A.).

**Methods.** A picture booklet, describing the process of assessment, treatment and after-care, was produced. The booklet, distributed at the assessment appointment, was evaluated through use of questionnaires completed by carers on the day of G.A. appointment both prior to and after the introduction of the booklet.

**Principle results.** Of the 113 carers who had received a copy of the booklet for their child, 89 written comments were received; 88 of these positive and one negative. For children and carers with no prior experience of this type of treatment, it was found that following introduction of the booklet, the percentage of carers reporting that they felt prepared increased from 85% to 91%. Children's reported preparedness increased from 56% to 61%. The percentage of children reported to be not or slightly anxious fell from 71% to 63%, while for carers the percentage remained almost steady.

**Conclusion.** Carers appreciated the booklet, and a small increase in preparedness amongst children and carers was found following its introduction. In contrast reported anxiety levels of children increased, though anxiety levels of carers did not alter significantly.

**Acknowledgement.** D.H.S.S.P.S. (N.I.)

pz8

## **Audit evaluating factors affecting survival of traumatized upper permanent incisors**

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**Aims.** To identify whether the protocol adopted from the previous audit in 2000 is being followed and also to assess factors that may influence the survival of teeth following this type of traumatic injury.

**Methods.** A retrospective comparative study was carried out of 100 consecutive cases attending NDH and BDH. A trauma database was used to identify patients and collect information on a data collection proforma developed from the previous study.

**Principal results.** 100 consecutive cases from NDH and 50 from BDH were obtained. Males and children between 6–10 yrs were more frequently affected. There was variation in the initial dressing used between the two hospitals. The majority of teeth were initially dressed within 48 hrs and soft tissue injuries were the most frequent associated injuries. Final restorations were placed over a varied period of time.

**Conclusions.** Thorough and adequate record keeping is needed and waiting lists should be seen within 4 weeks. Depth of enamel fracture should be recorded – could this influence choice of initial material? Set of national guidelines for initial management.

pz9

## **Cysts associated with deciduous molars**

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**Aim of the research.** To investigate the factors common to cases presenting with cysts associated with deciduous molars.

**Methods.** The study group included all children with such cysts who had presented to the Paediatric Dentistry Department, Sheffield over the previous decade. Data relating to the history, presenting features, attendance pattern, treatment and outcomes were obtained retrospectively using patient records.

**Principal results.** Ten children, 5 boys and 5 girls mean age 10.4 yr (7–13 yrs) were included. All patients were registered though only 3 were perceived to be regular attenders; 2 patients had received no previous treatment while 6 patients had pulpomised teeth. Second deciduous molars were more frequently involved. 40% of cysts were only identified when there was facial asymmetry with a further 50% as a coincidental radiographic finding. Only 1 patient had reported symptoms initially and 2 more whilst awaiting treatment. The permanent successors were displaced in 90% of the group. All cases underwent extraction of the deciduous causative teeth, 80% with marsupialisation.

**Conclusion.** Cystic areas were associated with grossly carious teeth,

those deeply restored with loss of vitality, or following pulpotomy. Early detection and appropriate treatment of inflammatory lesions associated with deciduous molars can minimise the adverse effects of enamel defects, displacement of permanent successors, delayed eruption and the resultant likelihood of extensive orthodontic therapy. Palpation for potential bony expansion would have proved to be a reliable non-invasive tool. Follow up of pulpotomised teeth must be vigilant and thus case selection is essential.

pz10

### **Children attending for comprehensive dental treatment under general anaesthesia**

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**Introduction.** The Department of Paediatric Dentistry runs a weekly day-stay theatre list known as the 'Comprehensive treatment GA' list (CGA). Concerns have been expressed regarding the waiting time for patients on this list along with a perceived high failed attendance rate (DNA).

**Aim.** The aim of this audit was to investigate referral trends, assessment practice, past attendance history and outcome of patients attending for comprehensive dental treatment under general anaesthesia, in order to make comparisons with agreed gold standards and to develop local protocols.

**Methods.** One hundred consecutive records of patients attending between February 2004 and August 2004 were audited. Each set of records was reviewed using a preformed data collection sheet. When a patient failed to attend for a CGA appointment, they were contacted to obtain a reason for their DNA.

**Principal results.** The age range of patients was between 2 years and 35 years, with 90% of patients under the age of 16 years 0 months. Nine patients failed to attend their CGA appointment. There was no association between waiting time, previous exposure to general anaesthetic, staff involved in the assessment nor treatment to be completed and failure to attend. Previous poor attendance history was noted in these patients with 5 out of 9 patients having failed previous appointments.

**Conclusion.** This audit has made recommendations which are being implemented at a local level.

pz11

### **Management of a facial lesion: a case report**

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**Presenting problem.** A fit and well 12 year old boy was referred to the Plastic Surgery Department of Birmingham Children's Hospital by his General Medical Practitioner, complaining of a persistent discharging lesion on his left cheek, which had been present for 3 months.

**Clinical management.** Following an initial consultation with the Plastic Surgery Department a provisional diagnosis of a cyst was made and prompted referral to the Maxillofacial Department for assessment. A full clinical examination was undertaken including radiographs and a swab for microscopy and culture. This anxious young boy subsequently was treated by extraction of a non vital, grossly carious upper first molar under general anaesthesia.

**Discussion.** The possible sequele which may result from a grossly carious tooth should not be underestimated. It is therefore imperative that good communication is established and maintained between Medical and Dental colleagues.

pz12

### **Panoramic radiographs – why bother?**

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**Aim.** To summarise the findings from panoramic radiographs which deviate from the norm expected in children.

**Method.** Panoramic radiographs taken over a nine month period of child patients of a Specialist Orthodontic Practice in Bridgend, South Wales who required fixed orthodontic intervention and/or extractions. These were scrutinised using a standard light box for tooth complement, caries, ectopic position, abnormal shape, and other anomalies outside these categories. The anomalies were scored as present or absent, collated and analysed using SPSS.

**Results.** 223 films were assessed and scored. The age range was 8 years to 17 years, 40% male and 60% female. 43.5% scored no anomaly, 56.5% had a score in one or more categories. The most common finding was untreated dental caries in the permanent dentition 36.3% of the sample. Less common were ectopic teeth (17%), missing teeth (12%), malformed teeth (5%) and other anomalies (6%).

**Conclusion.** The findings support the use of panoramic radiographs as a diagnostic tool in Orthodontic treatment planning. The unexpected high amount of untreated caries in secondary referrals was of concern, and the findings will be sent to all the referring practitioners.

pz13

### **Use and outcomes of fissure sealants in General Dental Service**

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**Aims.** To describe the use and outcomes of fissure sealants applied to first permanent molars (FPMs) of children with high caries risk in North West England.

**Methods.** Case notes of 677 children who had a history of approximal caries, and regularly attended 50 general dental practitioners, were examined. Logistic regression models were fitted to identify whether decision to fissure seal FPMs was significantly associated with gender, socio-economic status, number of carious primary teeth, and percentage of carious primary teeth filled. Similar models were fitted for caries experience in FPMs.

**Results.** Poorer children were significantly (OR = 0.84, 95% CI = 0.71, 0.99,  $P = 0.04$ ) less likely to receive fissure sealants than affluent children, whilst girls (OR = 1.54, 95% CI = 1.12, 2.12,  $P = 0.008$ ) were more likely to have sealants than boys. Total number of carious primary teeth was also a significant (OR = 1.15, 95% CI = 1.06, 1.25,  $P = 0.001$ ) independent predictor of dentists' decisions to fissure seal FPMs. For each carious primary tooth, the odds of having caries in FPMs increased by 1.16 (95% CI = 1.06, 1.26). Analysis showed that pit and fissure caries in FPMs were not affected by fissure sealants.

**Conclusions.** Decision to fissure seal FPMs is affected by past caries experience in primary dentition. Girls and affluent children were more likely to receive fissure sealants. Placement of fissure sealants did not appear to prevent caries for high-risk children.

**Acknowledgement.** Funded by National Primary Dental Care Research and Development programme.

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