Poster Presentations

P1

Failed attendance of paediatric dental outpatients with junior staff

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Aim: To investigate failed outpatient appointments with Junior dental staff (SHO, HO) under local analgesia with or without inhalation sedation in the department of Paediatric Dentistry.
Methods: Children who failed to attend the dental outpatient clinic within July and September 2004 were included in the study. The dental records and telephone questionnaires were utilised and following data were collected: telephone number, post code, past medical history, previous dental treatment, procedure to be carried out at time of failed attendance, attendance history, previous appointment cancellation, reason for failed attendance and if other appointments were required.
Results: In July, 21% failed to attend their appointments. A higher percentage of 32% was recorded in September. Out of the 92% of the patients with telephone numbers recorded in the dental notes, only 55% were contactable. Main reasons for failed attendance were inconvenience and forgetting to attend. Only 16% of the patients allegedly phoned to cancel their appointment.
Conclusions: Failed attendance rate among paediatric dental patients was high. Variation in the months studied was noted. Recommendations have being made to improve attendance in the department.

P2

Changing times: undergraduate paediatric dentistry experience over 20 years

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Objectives: To identify changes in clinical exposure and treatments performed by dental undergraduates during their Paediatric Dentistry course over the past 20 years.
Design: A retrospective observational study.
Setting: The Paediatric Dentistry clinic of a Dental Teaching Hospital in the North of England.
Sample and methods: Clinical logbooks of all students who graduated in 1984 (n = 42) and 2004 (n = 49) were examined to determine the total number of patients seen and specific treatment items undertaken. Treatment procedures were categorised as: fluoride applications; fissure sealants; restorations (composite, glass ionomer, amalgam, preformed metal crown); primary molar pulp therapy and extractions. An independent sample t-test was employed to identify significant differences in the mean number of treatments undertaken.
Results: Interestingly, 1984 and 2004 graduates had seen a very similar mean number of patients during their paediatric dentistry sessions (28 and 26, respectively). However, there were notable differences in the frequency of some of the treatments undertaken. A total of 1984 graduates had carried out a significantly greater number of amalgam restorations (mean = 11.8) and extractions (mean = 1.8) compared to 2004 graduates (mean amalgams = 1.8; mean extractions = 0.8). Conversely, 2004 graduates had placed significantly more glass ionomer (mean = 2.4) and composite (mean = 2.4) restorations than 1984 graduates (mean glass ionomers = 0.4; mean composites = 0.9). Experience in primary molar pulp therapy and preformed crowns was low for both student groups.
Conclusions: This study has shown how the clinical experience of dental students has changed dramatically over the past 20 years, reflecting both changes in patient caries experience and the improved function of adhesive restorative materials.

P3

Ankyloglossia: a review of the Yorkhill experience

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Aims and Objectives: (1) To record the number of patients undergoing tongue-tie release under general anaesthetic at the Royal Hospital of Sick Children, Glasgow from January 2002 to December 2005; (2) To identify the following information: (i) source and reasons for referral; (ii) indication for release of tongue-tie and (iii) demographic information of patients; and (3) To compare this clinical activity with published guidelines relating to ankyloglossia.
Sample: Consecutive cases of tongue-tie release treated under general anaesthetic at the Royal Hospital of Sick Children from 2002–2005.
Methods and materials: Retrospective review of case notes. Information recorded from each individual's case notes and from the operating theatre daybooks.
Results: A total of 222 patients underwent tongue-tie release under general anaesthetic during the sample period. General medical practitioners made most of the referrals for this procedure (82%). The reasons for referrals varies between tongue-tie only (28%), tongue-tie and parental concerns (17%), tongue-tie with speech problems (26%), and tongue-tie with feeding problems (10%). General surgery received majority of the referrals (60%), followed by ENT (36%). 53% of patients had tongue-tie release between 1–2 years of age.
Conclusion: Although there are published guidelines regarding the treatment of ankyloglossia, a large number of operative procedures are taking place, which do not appear to comply with those guidelines. We would suggest a re-circulation of the guidelines to GPs and a consensus amongst surgeons as to the indications for tongue-tie release.

P4

Trends in paediatric dental casualty attendees at a dental hospital

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Objective: To survey paediatric dental casualty patients who attended a Northern Dental Hospital during the same 2 months of three consecutive years.
Design: Retrospective cross-sectional study.
Setting: Paediatric Dentistry Department, Charles Clifford Dental Hospital, Sheffield.

Sample and Methods: Original case records of children presenting during October and November 2003, 2004 and 2005 were reviewed. Demographic data including age, gender, diagnosis and outcome were collected.
Results: Four hundred and sixty-three patients were seen. The mean age was 8.6 years (SD = 4.0). Overall the principle diagnosis was caries (62%) and of this group 98% presented complaining of pain or with swelling. Trauma was the reason for attendance in 22% of patients. The trend over the three years was for a decreased attendance of children aged 5 years and below and an increased attendance of children aged 10 years and above. The proportion of children attending with caries and trauma remained constant over the study period. The proportion of children attending in the older age group with caries related symptoms increased over the 3 years (28.9%, 30.6%, 35.5%). Though small there was an increase in the number of children requiring emergency admission (0.8–2.5%). In 2003, the number of patients referred for extraction under general anaesthesia was 36.6% while by 2005 this had reduced to 21.6%.
Conclusions: These findings may reflect the ability to deliver care by alternative methods in the older patient. It is intended to monitor these data in light of the implementation of the new contract.

P5

Dental erosion and dental caries in Brazilian schoolchildren

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Objectives: To assess the prevalence of dental erosion and dental caries amongst a sample of Brazilian school children, to relate these to socio-demographic characteristics and to test the association between erosion and caries.
Design and setting: Cross-sectional study conducted in schools in Três Corações, southeast Brazil.
Sample and methods: Ethical approval was granted by the local ethics committee. Written consent was obtained from parents and pupils. Randomly selected schoolchildren (n = 458) aged 13.81 (SD 0.39) years were examined for erosion using the criteria of the UK National Diet and Nutrition Survey 2000. Dental caries was assessed using the WHO-1997 criteria. Socio-demographic information was collected through self-administered questionnaire surveys completed by parents and children. Oral examinations took place in a school room, using a head-mounted light. Data were analyzed using SPSS by *Fisher's, Linear Association, Mann-Whitney U and Kruskall-Wallis* tests. Statistical significance level was set at 5%.
Results: The prevalence of erosion was 34.1% and was only seen on enamel, most commonly on palatal surfaces of the upper incisors. Prevalence of caries was 78.4% with the mean DMFT/DMFS being 3.95 (SD 3.81)/6.37 (SD 6.38) for all subjects and 5.04 (SD 3.61)/8.13 (SD 6.13) for subjects with caries experience. No statistically significant associations were observed between erosion and caries, or between erosion and socio-demographics. Dental caries was statistically significantly associated with socio-demographics.
Conclusions: Dental erosion was less prevalent than dental caries in this sample of Brazilian schoolchildren. Dental erosion was not associated with caries or socio-demographics. Dental caries was associated with socio-demographics.
Acknowledgement: This study was supported by grant PBEX1376/01-2 from CAPES–Brazil.

P6

Leukaemic infiltration of the mandible in a young girl

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Presenting problem: This report presents an unusual case of leukaemic infiltration of the mandible in a 10-year-old female of Sudanese extraction. The patient had been in remission from acute lymphoblastic leukaemia for 2 years when she presented to the Paediatric Dentistry clinic with severe pain localised to the alveolar ridge overlying the unerupted lower right second permanent molar. Two days later she developed right inferior alveolar nerve paraesthesia. Radiographic imaging demonstrated cortical line absence around the developing lower right second and third permanent molars, and distal displacement of the lower right third molar. In addition, the cortical outline of the right inferior dental canal lacked clarity.
Clinical management: A bone biopsy together with lumbar puncture and bone marrow aspirate confirmed leukaemia recurrence demonstrating the Philadelphia chromosome. Tailored chemotherapy was commenced and a bone marrow transplant was carried out 12 weeks later. At her 6-month dental review, the patient remained well with no bone pain and normal sensation in the right lower lip.
Discussion: This report hopes to serve as a reminder to those caring for survivors of childhood leukaemia to be vigilant regarding complaints of jaw pain or numbness. Although jaw pain may be of dental origin or due to a side-effect of chemotherapeutic agents, it may also be a sign of disease recurrence. Regular, long-term dental examination in these patients is therefore of paramount importance.

P7

Diagnostic quality of radiographs taken following primary tooth trauma

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Objective: The objective of this audit was to ascertain whether radiographs taken following primary tooth trauma were of a satisfactory diagnostic standard, and if the radiographs had any effect on the clinical treatment plan.
Design: Retrospective case record analysis.
Sample: Records of 120 consecutive cases of primary trauma were identified from the trauma database.
Methods: The following features should be identifiable on a periapical or occlusal radiograph taken following primary tooth trauma: Primary tooth crown (pc); Complete root of the primary tooth (cr) and Incisal tip of developing successor (is). Radiographs were assessed to ascertain whether they met the criteria and whether the radiograph had altered the treatment plan for the patient.
Results: The age range of patients was 1–8 years. 73 out of the 120 patients allowed radiographs to be taken (62.5%). 54 (74%) occlusals and 19 (26%) periapical radiographs were taken. 10 (13.7%) of the radiographs had faults: 4 (7.4%) occlusals and 6 (31.6%) periapicals. The faults were: 4is; 2pc/cr/is; 2cr; 1pc; 1pc/cr. Faults were evenly distributed with age. In only 4 (5.5%) of cases did the radiograph alter the clinical treatment plan.
Conclusions: There was a relatively low incidence of faults. The commonest fault was failure to see the incisal tip of the permanent successor, there was a higher incidence of faults in periapical radiographs than occlusal radiographs. The radiograph affected the treatment plan in only 5.3% of cases. Radiographs should only be taken where there is a clinical justification to do so.

P8

An IV sedation pathway of care for children and adolescents

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Objective: To audit the pathway of care for children and adolescents referred for IV sedation.
Design: Case records of patients treated with IV sedation between January 2002 and December 2003 were reviewed. A data collection sheet recorded the child's gender, age, and weight on referral. The clinical pathway information included: sedation assessment attendance, time taken from consultant clinic to assessment, time from assessment to IV appointment, acclimatisation visits, consent, number of IV visits, and sextants treated. Outcome measures included: cancellation, failure to attend (FTA), treatment completion and discharge.
Results: Of the 53 children treated 58% were female. The mean age on referral was 13.0 years (9.8–14.6) with a mean weight of 57.2 kg. The sedation assessment was attended by 77% of children, with mean time from consultant clinic to assessment being 4.0 months and a further 3.8 months until the IV appointment. Fifty one percent attended for acclimatisation. Consent was obtained prior to the IV visit in 83%. In 59% of children 4 or more sextants were treated in a mean of 3.7 visits. Cancellation and FTA rates were respectively 32% and 36%. Fifty one percent completed treatment, with 15% discharged back to GDP, 6% discharged to other departments and 30% discharged back to the department of paediatric dentistry for specialist care or joint care.
Conclusion: Children receiving IV sedation obtain an IV appointment within 8 months and completed in four visits. The FTA rate is high, change and further audit is required.

P9

Oral mucormycosis in children with leukaemia: report of three cases

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Presenting problem: Mucormycosis is a rare acute opportunistic infection caused by a saprophytic fungus, which belongs to the order *Mucorales*. This report presents intra-oral Mucormycosis in three children with acute leukaemia who were undergoing chemotherapy.
Clinical management: A 7-year-old boy with acute myeloid leukaemia (AML) was referred for an intra-oral lesion. A soft, grey-black colored 2 x 3 cm necrotic appearing lesion distal to the left lower first molar was detected at intra-oral examination. The lesion was diagnosed as mucormycosis by histological examination. The lesion was debrided under general anaesthesia. A 9-year-old boy with acute lymphoblastic leukaemia (ALL) was referred for a white lesion on the buccal gingiva of the upper second incisors, and primary canine. Attachment loss and sequestration of buccal alveolar bone, and a white, hyperplasic tissue extending from the second molar to the first incisor at the maxillary right palatal mucosa were found during the intra-oral examination. The diagnosis of the lesion was mucormycosis. Medical management was done without any debridement. A 14-year-old boy with ALL was referred for the soft, white-yellowish colored 2 x 7 cm necrotic appearing lesions extending from the first incisor to the second molar at both the buccal and the lingual mucosa of the left mandible. The lesion was diagnosed as mucormycosis as in the previous cases. Medical management is continuing.
Discussion: Early recognition of mucormycosis is necessary to limit the spread of infection, which can lead to high morbidity and mortality. Therefore, health practitioners should be familiar with the signs and symptoms of the disease.

P10

An audit of a UK dental hospital paediatric casualty service

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Objective: The Department of Paediatric Dentistry, Newcastle Dental Hospital provides a casualty service for unregistered patients and urgent referrals from the Primary Dental Services (PDS). The aim of this audit was to investigate referral trends, assessment practice and treatment outcomes in order to facilitate service delivery and development.
Design: A one-year prospective audit.
Setting: Newcastle Dental Hospital.
Methods: All patients attending the casualty service between 4th January 2005 and 4th January 2006 (1 year period) were audited. Data were recorded on a standardised pro-forma by the paediatric casualty team. Information collected included patient personal details, registration status, treatment need and outcome.
Results: A total of 2314 patients were seen during the year with an average daily attendance of 9.1. Reported registration with a GDP was 61.1%. The main reason for presentation was caries. 28.5% of patients required treatment-planning input by a member of the senior team. 68.4% of patients lived outside the Newcastle area.
Conclusion: This audit identified a large group of patients who were travelling significant distances to access emergency dental care. The reasons for this are currently being explored with PDS colleagues in a bid to facilitate the development of local specialist services, which are more readily accessible.

P11

Multiple dental anomalies in siblings with an unknown dysmorphic syndrome

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Presenting problem: Two sisters, aged 9 and 12, of Indian descent, with a medical history including multiple skeletal anomalies, genu recurvatum, talipes equinovarus, congenital hip dislocations, ectopic kidneys, growth retardation and developmental delay, underwent clinical and radiographic examination. Both siblings had a range of dental anomalies including delayed eruption, taurodontism, transpositions, ectopic teeth, hypodontia and supernumeraries. There was no known family history of similar anomalies.
Clinical management: Provisional treatment plans included surgical exposure of unerupted teeth, removable othodontic appliances and temporary prosthetic replacement of unerupted teeth. Unfortunately reduced co-operation from the siblings with regard to such a complex treatment plans have meant that for the moment we have had to compromise with an aggressive preventive plan with regular clinical and radiographic reviews to monitor dental development and movement of the unerupted teeth.
Discussion: Many studies have stressed the significant associations of multiple dental abnormalities including the strong association of ectopic eruption of first molars with aplasia of second premolars, small maxillary lateral incisors, infraocclusion of primary molars and enamel hypoplasia. These children bring together a variety of dental anomalies, which have been reported widely, but never

occurring simultaneously to our knowledge. We would be interested if colleagues have managed similar cases.

P12

Therapeutic dental play for anxious children undergoing dental treatment

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With the implementation of the play specialist within the paediatric dentistry department, an opportunity for therapeutic dental play arose. Play specialist intervention has not previously been available in dental hospital settings, and therefore an audit to evaluate the impact of this role was undertaken.
Objective: Evaluate impact of therapeutic dental play techniques in reducing anxiety and aiding cooperation in dental treatment.
Design: Audit.
Sample and methods: Anxious patients identified by clinicians and referred to play specialist. Definition of an anxious patient is determined by non-compliance with dental treatment and high levels of anxiety. An Audit Data Recording Form was used to collect information to evaluate the impact of play specialist input on patients and service.
Results: Main procedures used – play preparation (57.1%), desensitisation (28.6%). 57.1% of children were male. Participants had mean age of 7.71 years within range 4–13 years. 85.7% children provided play specialist input. One referral was unsuitable for input. 1.3 hours – mean amount of play specialist appointment time. Mean anxiety reduction assessed by clinician was –2.0, by patient –2.25, and by parents –1.33.
Conclusion: Main conclusion drawn from sample study was that all patients experienced reduced anxiety as a result of play specialist intervention. The most significant reduction in anxiety levels was rated by patients. Initial findings suggest play specialist input has beneficial impact in reducing anxiety and aiding cooperation.

P13

An unclassified type of Ectodermal Dysplasia – Case report

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Presenting problem: This child was referred by her General Dental Practitioner for the treatment and management of the generalized inflammation associated with her gingivae. On examination it was evident that the patient displayed palmo-plantar hyperkeratosis, hyperpigmentation of skin, brittle/slightly mis-shaped nails and woolly/thick/curly hair. On examination, the buccal mucosa and tongue were dry and fissured with the gingivae appearing erythematous. Her dentition included all deciduous teeth as well as all four permanent first molars. Radiograph examination revealed hypodontia of the permanent dentition, with only the upper central incisors, lower first premolars and lower canines being present. Bitewing Radiographs suggested caries in 46, 85, and 55.
Clinical Management: Having made the provisional diagnosis of 'Ectodermal Dysplasia', the importance of stabilisation and treatment of her dentition was addressed. After completion of an intensive course of preventive advice, the restorative treatment was completed. The patient now attends Bristol Dental Hospital for regular review appointments, where advice, management and maintenance of the condition are re-visited. This patient was referred to a clinical Geneticist and a Dermatologist at Bristol Children's Hospital for confirmation and treatment of this condition. As yet, the type of Ectodermal Dysplasia exhibited by this patient appears to be unique and cannot be categorised.
Discussion: Ectodermal Dysplasia is a term for the condition characterised by developmental dystrophies of ectodermal structures, such as hypohidrosis, hypotrichosis, onchodysplasia and hypodontia. Once diagnosed, an interdisciplinary team approach for the patient's management is essential.

P14

Dental management of an infant with malignant infantile osteopetrosis

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Presenting problem: A 29-month-old boy with malignant infantile osteopetrosis (MIOP) awaiting bone marrow transplant (BMT) was referred with oral injuries following a difficult intubation that had resulted in a tracheostomy. Intraoral examination revealed a swollen lacerated tongue, hypoplastic mobile 51, 61 and 71, and displaced 73. Soft tissue bruising was noted overlying the apices of 51 and 61. No other teeth were present and mother reported exfoliation of 81 the previous year.
Clinical management: Daily application of chlorhexidine gluconate was initiated as part of a preventive oral regime. Peri-operative radiographic investigation revealed an abnormal appearance of the maxillary bone ('marble bone'), bone loss affecting 51, 61, and dysmorphic unerupted teeth. Following a platelet infusion, 51, 61 and 71 were extracted under local anaesthetic and oral sedation. The procedure was covered with antibiotics peri- and post-operatively. Histological examination of the teeth revealed cementum aplasia and hypoplastic hypomineralised enamel. Healing was uneventful and the patient successfully underwent BMT 3 weeks later.
Discussion: MIOP is a severe form of osteopetrosis caused by failure of osteoclastic resorption of bone, resulting in hepatosplenomegaly, pancytopenia, blindness, hearing loss and facial paralysis. MIOP exhibits many dental features including enamel hypoplasia, retention and distortion of primary/permanent molars, osteomyelitis and ankylosis. Although previously lethal, the condition can now be successfully treated with BMT. This case demonstrates the careful planning required to prevent infection from a potential dental source in this susceptible child.

P15

Child protection concerns and subsequent action taken: mind the gap

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Aim: To investigate British Society of Paediatric Dentistry (BSPD) members' practice in child protection referral.
Design: An anonymous self-completed postal questionnaire regarding child protection was mailed to all 813 BSPD members in March 2005. A second mailing to non-respondents was sent two months later. Data were entered into a spreadsheet, which was electronically verified and observational statistics were generated using SPSS (SPSS Inc.).
Results: A total of 490 completed questionnaires were returned (60% response rate). Initial findings regarding training and experience have been reported elsewhere. 67% of respondents had previously suspected abuse of a child patient but only 29% had ever made a child protection referral (Harris, Elcock and Welbury, 2006). Further findings regarding referral and action taken are now presented. Of those who had suspected abuse, they had done so on one (43%), two (32%), three (13%), four (3%) or five or more

(9%) occasions in the preceding 5 years and 82% recorded their observations in the clinical records. 87% would prefer to discuss their concerns about a child with a dental colleague before taking any further action. A high proportion of dentists (48%) encounter children with neglected dentitions daily but 96% 'rarely' or 'never' refer these children to social services.

Conclusions: There is a gap between the number of BSPD members suspecting abuse and those taking action, both in terms of record keeping and referral. Dentists encounter children with neglected dentitions frequently but generally do not refer them to social services.

Acknowledgement: Supported by a Department of Health funded educational project.

P16

Ectopic eruption of first permanent molars: presenting features and associations

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Objectives: To investigate presenting features of ectopically erupting first permanent molars and associations with other dental anomalies.

Design: Prospective convenience-sample study.

Setting: Dental Teaching Hospital in the North of England.

Sample and methods: Twenty-eight panoral radiographs were collected, over a 24-month period, of 7–10 year-old children with radiographic evidence of ectopic eruption of first permanent molars. All radiographs were analysed under standard conditions to record the distribution and type of ectopic eruption. The presence of other dental anomalies was also noted and logistic regression analysis undertaken to identify any significant associations between ectopic eruption and specific dental anomalies.

Results: The majority of patients demonstrated ectopic eruption of either one or two first permanent molars (32% and 57% of subjects respectively). In total, 49 first permanent molars were categorised as having ectopic eruption (47% 'jumps', 53% 'holds'). 92% of these were maxillary teeth and there was equal left and right distribution. Interestingly, 60% of children were noted to have an additional dental anomaly. Statistical analysis revealed that ectopic eruption was significantly associated with primary molar infraocclusion and cleft lip and/or palate ($P < 0.05$), being almost 20 times more common in the presence of these anomalies. However, no associations were found with hypodontia or supernumerary teeth.

Conclusions: This study, the first in a British population, has identified a significant association between ectopic eruption of first permanent molars and a number of dental anomalies. A multifactorial aetiology is thus supported and clinicians should be alert to the co-existence of ectopic eruption and other anomalies.

P17

An audit of the provision dental care in paediatric oncology patient's at Birmingham children's hospital (BCH)

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Aims: To ascertain the proportion of Birmingham Children's Hospital (BCH) oncology patient's currently registered with a dentist. To investigate attendance patterns at the primary and secondary dental providers. To establish the need for specialist paediatric dental input for paediatric oncology patients and development of a dental care pathway.

Methods: A questionnaire was piloted and data were collected from the parents/guardians of children attending the oncology clinic at BCH.

Results: Fifty-six questionnaires were completed by parents/guardians of children aged 0–16 years. 91% (51) were registered with a general dentist with 86% (48) seen in the last 12 months. Nine percent (5) reported specifically seeing a dentist before starting cancer therapy. 27% (15) were referred during cancer therapy to a paediatric dentist. 89% (50) had received information regarding care of their child's mouth during cancer therapy and 66% (37) said the effects of the medical treatment on the child's mouth and teeth had been discussed.

Conclusions: Though most children are registered with primary dental health providers they are not routinely screened for dental disease on diagnosis of cancer. Only a small number receive specific specialist paediatric dental care at BCH. The families are well informed regarding the effects cancer therapy may have on their mouth and teeth. BCH oncology and dental specialities departments are currently developing a dental care pathway to improve the oral health care of these patients.

P18

Premature exfoliation of primary teeth: a diagnostic conumdrum

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Objective: To identify the diagnosis of an apparently healthy child presenting with early exfoliation of the primary teeth.

Presenting complaint: A 5-year-old medically fit and well girl presented with premature exfoliation of her primary teeth. The reported eruption of the primary teeth was chronologically normal. All primary incisors and maxillary first molars had been lost by 36 months. Inspection of the caries-free exfoliated teeth showed evidence of root resorption and others that exfoliated with their roots intact. The remaining teeth were grade-2 mobility with minimal pocketing and good plaque control. Radiographic examination revealed taurodont pulps associated with all the primary molars and a moth-eaten appearance to the mandibular bone with associated root resorption in 2 molars.

Discussion: Investigations performed included, FBC, differential WBC, LFTs, antibodies to bacteria, U + Es, microbiological sampling, hard tissue histology of the dentine and cementum and histology of the lucent tissue in the mandible. This case did not follow a classical presentation of any of the conditions linked with premature exfoliation. Initial differential diagnosis included prepubertal periodontitis, qualitative and quantitive neutrophil defects, hypophosphatasia, hyphosphataemia, dentine dysplasias, osteolytic lesions of bone and syndromes with associated tooth loss. This case report outlines the steps towards diagnosis and reports the initial management of this child.

P19

Food debris retention in children with cleft lip and palate

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Objective: To compare the retention of oral food debris in children and young adults with cleft lip and palate (clp) with that of control subjects who have no oral clefting.

Design: A comparative observational study.

Setting: Children and young adults with clp attending the audit clinic at Frenchay Hospital, Bristol formed the test group in the study. The control group comprised of children attending the Bristol Dental Hospital for treatment and their siblings.

Sample and methods: Forty-two subjects with clp and 40 control subjects without oral clefting formed the study group. Ethical approval and informed consent were obtained. All the subjects underwent an oral and dental examination. Each subject was asked to eat a commercially available chocolate biscuit. An examination of retained food debris was carried out at 5, 15, 30 and 60 min intervals.
Results: The clp group showed increased debris retention in comparison to the control group. Within the clp group, the subjects with clefts involving the lip and palate had significantly higher debris retention than those with other cleft types ($P < 0.05$).
Conclusions: Children with clp have poor oral hygiene and an increased caries rate when compared with control subjects. The prolonged retention of food debris in this group may give rise to prolonged acid production, which might help to contribute to increased susceptibility to tooth decay.

P20

Bitewing taking during recall appointments in the community dental service

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'In the diagnosis of caries in children, the weight of opinion supports the statement that posterior bitewing radiographs are an essential adjunct to clinical examination.' [Selection Criteria for Dental Radiography, FGDP (UK) Good Practice Guidelines]. An audit was designed to examine how often senior Dental Officers and Dental Officers within Cardiff and Vale NHS Trust take bitewing radiographs to aid in the diagnosis of caries in their paediatric patients and whether they are meeting national clinical guidelines.
Design: Electronic patient contact data was analysed to work out what percentage of recall appointments have bitewing radiographs taken for each of staff member. No identification of individual activity was known by the auditor. Exclusions were made to orthodontic senior Dental Officers, domiciliary Dental Officers, a newly appointed Dental Officer, and one clinician who performs sedation only. A total of 30 clinicians' data was examined.
Results: 68% of the clinicians take bitewing radiographs in less than 10% of their recall appointments; 81% of the clinicians take bitewing radiographs in less than 15% of their recall appointments; the highest result recorded was 28% of recalls having bitewing radiographs taken.
Conclusions: Although these results are not directly conclusive, they suggest that this group of clinicians are falling short of the recommended clinical guidelines. Further investigation should be made in to the radiograph prescribing within this group.

P21

Tooth autotransplantation for paediatric dental patients: a retrospective audit

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Objective: The aim of this study was to examine the outcome of tooth autotransplantation in a paediatric dental population.
Design: A review of the dental notes and radiographs of patients who had undergone tooth autotransplantation before 18 years of age at Leeds Dental Institute was undertaken.
Results: Records of 31 patients, 16 male and 15 female, with 34 transplanted teeth were eligible for inclusion. Patients had a mean age of 13.2 years, with an age range of 8 years 6 months to 17 years 11 months. There was a mean follow-up time of 25.8 months. 34 transplanted teeth included 27 premolars, 4 ectopic teeth, 1 supernumerary, 1 third molar and 1 lower central incisor. Reasons for transplantation were dental trauma (67.6%), hypodontia (20.6%) and ectopic eruption (11.8%). Of the 27 premolars included, four showed signs of replacement resorption whilst five of the other tooth autotransplants failed, all showing signs of progressive replacement resorption. In two of the four premolar transplant cases failure occurred in cases with difficult surgical conditions. Of the other autotransplants, failure was associated with difficulty of extraction of transplanted teeth. Failure was not associated with closed apices when root canal therapy was appropriately instituted.
Conclusions: Success of autotransplanted teeth appears to be correlated to the difficulty of extraction of the transplanted tooth. Premolar transplants have shown good success rates whilst autotransplants necessitating more difficult extractions carry lower long-term success. This has important implications for treatment planning.

P22

The dental effects of meningococcal septicaemia: a case report

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Aims: The topic of meningitis has recently received great media interest. Despite great strides in medical development, meningitis remains one of the leading causes of death by infection in children. Dental abnormalities secondary to meningococcal septicaemia have been described but information is scarce. This report aims to add weight to existing literature.
Presentation: This patient was referred to Birmingham Dental Hospital concerned with the appearance of his dentition. He had a history of meningococcal septicaemia at 4 years of age, which had resulted in the amputation of his right arm and lower portion of both legs. Clinical examination revealed inadequate oral hygiene, dental caries and a number of dental anomalies including hypoplasia, ectopic tooth position, abnormal tooth development and possible hypodontia.
Management: Management encompassed a multidisciplinary approach. Initial treatment involved prevention, restoration of carious teeth, improvement of aesthetics and extraction of primary teeth to facilitate the eruption of the permanent canines. The patient subsequently underwent orthodontic extractions and surgical removal of the abnormal teeth from the premaxilla. He is currently undergoing fixed orthodontics.
Discussion: The dental features in this case are comparable to those previously described and support links demonstrated between meningococcal septicaemia and dental abnormalities. Although immunisation offers hope, complete eradication of meningitis is not yet on the horizon. While the potential of meningitis remains, dentists should be aware of the dental and psychological impact.

P23

Use of scanora in management of a nasopalatine duct cyst

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Aim: To describe a case of a large nasopalatine duct cyst (NPDC) in a 13 year old male.

Presenting Problem: The clinical presentation was of an asymptomatic midline palatal swelling measuring approximately 1.5cm in diameter.
Clinical Management: The management of the NPDC involved enucleation under a general anaesthetic. The diagnosis was confirmed with radiological and histological examination. The use of Scanora in outlining the anatomical location, diagnosis and surgical management of the NPDC is demonstrated.
Discussion: The case is particularly interesting as it is rare for a NPDC to present in a child and is therefore important that practitioners are aware of the features of this cyst. It should be considered in a differential diagnosis of intra-oral palatal swellings in younger patients.

P24

Adverse experiences while waiting for treatment under paediatric general anaesthetic

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The transfer of the Paediatric General Anaesthetic Service to a site with critical care facilities resulted in a 9-month delay in the establishment of the full, continuous service. This led to in an increase in the waiting times for treatment.
Aim: To evaluate the incidence of adverse experiences for the child and parents while waiting for treatment.
Design: Retrospective data was collected by parent interview.
Setting: Day Care Unit, Royal Hospital For Sick Children, Edinburgh.
Sample and methods: The parents of 167 children under the age of 11 attending the RHSC for dental treatment under general anaesthetic were interviewed during the pre-operative admission process.
Results: Of the total sample, 54% (91) were under 6 years of age. 75% (125) of children had been on the waiting list for over 3 months, with 24% (40) waiting at least six. 65% (109) had experienced at least one episode of pain while awaiting treatment, with 25% (23) of 0–5 years old recording daily pain. 57% (73) of children had received at least one course of antibiotics. In addition, pain experience had influenced daily activities with 31% (51) of children missing nursery/school and necessitating 13% (22) of parents having to take time off work.
Conclusions: A delay between initial assessment and treatment under general anaesthetic has an adverse impact on the children and their parents.

P25

Ectopic maxillary canine: case presentation

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Presenting Problem: A fit and well 11-year-old boy was referred to the local Oral and Maxillofacial Unit by his Orthodontist regarding the impacted 23. His presenting complaint was of retained primary anterior teeth. He was a regular dental attender who had undergone General Anaesthesia (GA) extractions of all four first permanent molar teeth at age 8. Radiographs taken prior to the GA had revealed a dense radio-opacity in the left maxilla with an altered tubercular pattern and a ground glass appearance. A bone biopsy was undertaken whilst undergoing dental extractions. The differential diagnosis was fibrous dysplasia and/or cemento-ossifying fibroma. Examination three years later revealed retained 52 and 63. Further radiographs revealed: impacted 27 associated with the unerupted 28; congenitally absent 12; and 23 was at the level of the orbital floor.
Clinical Management: The impacted 27 was removed under GA. The patient was informed that removal of the impacted canine would be required at a later stage, along with debulking of the fibrous dysplasia. This procedure would be best left until he was older unless there was deterioration of his orbit or ocular function.
Discussion: It is not uncommon for upper permanent lateral incisors to be congenitally missing however the absence of permanent canines is rare. As permanent canines are more frequently impacted, non-appearance should be investigated to confirm presence and position.

P26

Apparent superimposition of a supernumerary and permanent tooth on radiographs

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Presenting problem: A healthy 10-year-old boy with a mixed dentition presented with a palatally erupted midline conical supernumerary tooth. The tooth was not obvious from an anterior aspect and was not causing any discomfort. An opinion was sought about the possible removal of the tooth prior to orthodontic treatment. On radiographic examination (including the use of parallax views) the root of the supernumerary appeared superimposed on the root of the upper permanent central incisor, indicating the possible fusion of the roots. Thus an attempted extraction of the supernumerary could risk the devitalization of the permanent incisor.
Clinical Management: Imaging using cross sectional multidirectional tomography was done to investigate the relationship of the roots. The results were not conclusive, however, the view of the Consultant in Dental Radiology was that the roots were not fused. To be absolutely sure a CT scan was suggested.
Discussion: What is the 'best' treatment for this boy? His parents have had the following treatment options explained: Do nothing. Carry out a CT scan. Attempt the extraction with the images we have. Decoronate the supernumerary and perform a Cvek type pulpotomy. They feel unable to give consent for any treatment, they are worried about the radiation from a CT scan and the possibility of the devitalisation of the permanent tooth. Is do nothing really the best option?

P27

Natal teeth: interesting case reports

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Aims: To describe two unusual cases of children with natal teeth.
Presentation: Patient 1 was born with two deciduous upper molar teeth and a granulomatous soft tissue swelling of the mucosa. Patient 2 was born with nine natal teeth, of eggshell appearance and mobility, which were interfering with feeding.
Management: Patient 1 was managed conservatively and followed up for a period of 1 year. The natal teeth were found to be of normal series. Patient 2 had extractions at the age of 10 days. At follow up, the upper deciduous incisors were found to be absent.
Discussion: We review the literature and discuss possible aetiological factors that may be associated with natal teeth, as well as management options.
Conclusion: The cases highlight the importance of regular review to monitor effects on the dentition, and possible underlying medical conditions.

P28

Dental management of patients with complement component 1 inhibitor deficiency

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Presenting problem: Hereditary angio-oedema (HAE) is a rare autosomal dominant disorder that is characterized by a sudden onset of non-pitting, non-pruritic and non-urticaric oedema of the skin, mucous membranes (including life-threatening laryngeal oedema), and gastrointestinal tract resulting from a defect in the gene that produces C1 inhibitor. HAE appears early in life and usually accompanied by family history. It can be classified into three types. In type I, up to 85% of the patients have a deficiency in the C1 inhibitor, which is a plasma protein involved in the regulation of the complement cascade. In type II, the circulating C1 inhibitor concentration is normal but not functional while in type III, the C1 inhibitor concentration has a structure abnormality that binds to albumin, forming an inactive complex.
Clinical management: Currently these patients are medically managed by C1 inhibitor concentrate infusions, which are safe and effective for prophylaxis and treatment for acute attacks of HAE.
Discussion: Manipulation within the oral cavity of these patients may precipitate an attack, which can cause airway obstruction following laryngeal oedema. We present here cases of two sisters with HAE while describing the medical and the comprehensive dental management provided under local anaesthesia as well as a review of literature.

P29

Comparison of three pain relief protocols for paediatric dental extractions under general anaesthesia

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Aim: To compare pain scores reported directly from children following deciduous extractions under general anaesthesia, and the analgesia medication provided.
Methods: The study was tri-sited, with each of the centres using one of the following pain relief protocols: Pre-operative oral Paracetamol thirty minutes before the procedure and Pre-operative rectal Voltarol 25 mg/kg immediately after induction. No analgesia provided. All three centres were similar day case units and operating dentist and anaesthetist was constant at each individual site. Children experiencing pain on the day of the extractions, had taken pain relief medication on the day, or had learning difficulties were excluded from the study. Seventy children from each site were recorded in this study, with a total of 210 children, and all underwent routine deciduous dental extractions only. All children were shown a visual analogue scale pre and post-operatively to record pain experienced – the reporting of pain was directly from the child itself.
Results: Children reported significantly less pain when rectal Voltarol had been provided, than Paracetamol or no analgesia. Children receiving Paracetamol reported significantly less pain than those receiving no analgesia.
Conclusion: Voltarol is the most effective pre-emptive analgesic for dental extractions under general anaesthesia, when compared with paracetamol and no analgesia.

P30

A prospective clinical study of mineral trioxide aggregate for partial pulpotomy in cariously exposed permanent teeth

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Objective: To evaluate the success of using gray mineral trioxide aggregate (MTA) for partial pulpotomy in cariously exposed young permanent first molars.
Materials and methods: Thirty-one first permanent molars of 23 patients with a carious exposure were treated using partial pulpotomy (Cvek) technique. The age of the patients ranged from 7.2 to 13.1 years. Pain history and clinical examination revealed pulpal response within normal limits. Periapical radiographs showed normal appearance of the periradicular area. Following administration of local anaesthesia, teeth were isolated and caries removed using a low speed large round bur and spoon excavators. The exposed pulp tissue was removed with a high-speed diamond bur under water coolant to a depth of 2–4 mm. The pulp wound was flushed with saline and bleeding was controlled with a cotton pellet. A thickness of 2–4 mm of MTA was adapted against the wound and the cavity floor was then covered with light cured glass ionomer. The teeth were either restored using amalgam, or stainless steel crowns. Teeth were reviewed radiographically and clinically at 3, 6, 12 and 24 months intervals.
Results: Twenty-two of the treated teeth did not show any clinical or radiographic signs of failure during the follow-up evaluation period. Six teeth did not respond to sensibility testing at the final follow-up period, however, no other clinical or radiographic signs of pulp pathology were detected.
Conclusions: Gray MTA was a suitable dressing agent for partial pulpotomy in cariously exposed young permanent first molars.

P31

Mucoepidermoid carcinoma in an adolescent

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Presenting problem: A 14-year-old fit and well male presented with a soft non-tender right palatal swelling that had been present at least 6 months. Clinically the swelling, which had a blue hue, extended intra-orally from 24 to 27 and was approximately 2 cm in diameter. Radiographically, there was a poorly circumscribed radiolucency in the upper right quadrant.
Management: Fine needle aspirate consisted of a mucinous material. Histological examination of an incisional biopsy was reported as mucoepidermoid carcinoma. Regrettably, the lesion appeared to be invading the bony hard palate as seen on the magnetic resonance image scan. A low level right maxillectomy was undertaken, the defect packed and an obturator fitted.
Discussion: Mucoepidermoid carcinoma is the most common malignant salivary gland neoplasm in children albeit rare. Incisional biopsy is essential to establish the diagnosis and grade the tumour histologically. Most mucoepidermoid carcinomas are low to intermediate grade and treatment often consists of wide local excision. If there is evidence of bone involvement it is essential to achieve adequate surgical clearance. Paediatric dentists may be the first health care professionals to see the patient and thus play a key role in diagnosis.

P32

Previous radiographic experience of children referred for dental general anaesthesia

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Objective: To determine what proportion of children undergo radiographic assessment prior to referral to a dental hospital for extractions under general anaesthesia.
Design: A prospective survey conducted over a 6-month period.
Setting: A paediatric dentistry clinic within a dental hospital in the North of England
Sample and methods: A total of 161 patients with a mean age of 6 years (SD = 2.2, range = 3–14 years), who were all referred to the dental hospital for extractions under general anaesthesia were included in the study. A data sheet was used to record the following information: patient's age; referrer's name and place of work (general dental practice or community dental service); teeth to be extracted (primary dentition and/or permanent dentition), and reported previous radiographic examination.
Results: Overall, 12.4% of children had reportedly undergone a previous radiographic assessment prior to hospital referral. A significantly greater proportion of children referred for permanent tooth extractions had been subject to radiographic examination compared to children referred for primary tooth extractions (46.2% as compared to 6.3%; $P = 0.001$ chi-squared test). Furthermore, patients referred from the community dental service were significantly more likely to have had previous dental radiographs than children referred from general dental practice (36.9% compared to 9.3%; $P = 0.003$ chi-squared test).
Conclusions: It is extremely concerning that radiographs do not appear to be routinely employed for caries diagnosis and treatment planning in young children within general dental practice.

P33

The dental health of 5-year olds with cleft lip and palate in Scotland

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Objectives: To compare the dental health of 5-year olds with cleft lip and palate in Scotland to established National indices collected as part of the Scottish Health Boards' Dental Epidemiological Programme (SHBDEP).
Design: Examinations were completed in Edinburgh, Forth Valley, Tayside, and Glasgow using standard BASCD criteria. Data was transferred from the paper data collection sheet to the Electronic Patient Record held in Perth where standard epidemiological indices were generated. These figures were compared to SHBDEP 1999–2000 data for 5-year olds.
Results: Initial data for 77 children was available for analysis. The majority of decay occurred in a small number of children. All the missing surfaces occurred in 16 (14%) of the sample. Study data will be presented first with SHBDEP data in brackets: decayed surfaces 1.48 (4.71); filled surfaces 0.26 (0.52); missing surfaces 1.55 (1.49); dmfs 3.49 (4.69); caries free 51% (41%).
Discussion: The Scottish Executive oral health action plan (2005) target for 2010 is that 60% of 5-year olds will be caries free. That target will be difficult to achieve for the general population but may be achievable for the Cleft Lip and Palate Service children in Scotland (CLEFTSiS). Paediatric dentistry has only had access to cleft clinics since 2004 to both examine children and instil preventative habits. If preventative messages have been accepted then the oral health of cleft 5 year olds in 2010 should continue to improve.

P34

Prosthetic rehabilitation of a patient diagnosed with a chondrosarcoma

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Presenting problem: A 12-year-old girl was referred by her General Dental Practitioner complaining of a persistent swelling of her lower jaw, which was painful on biting. Extraoral examination revealed a firm bony swelling of the right angle of mandible which had gradually increased in size over the last 2 weeks and had not responded to antibiotics. Intraoral examination revealed a firm swelling located buccal and lingual to the lower right premolar and canine region. Radiographic examination showed a non-corticated and fairly well-defined radiolucency. Her only relevant medical history was well-controlled mild asthma.
Clinical management: An incisional biopsy under general anaesthesia was carried out and the results showed a tumour of cartilage cells consistent with either a chondrosarcoma or chondroblastic osteogenic sarcoma. Subsequently, the patient had a resection of the lower right mandible to the midline and fibular bone graft reconstruction. In addition, she was treated with three courses of chemotherapy. Six months postoperatively a removable prosthesis was provided at the Edinburgh Dental Institute.
Discussion: This prosthesis was provided with some difficulty due to: large step between her residual natural teeth and her fibular reconstruction; over-eruption of her maxillary teeth; and a small amount of maxillary canting had taken place. In the medium term it is planned to replace this prosthesis with an implant retained one.

P35

Unusual odontomes in the buccal segment – Presentation and management

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Presenting problem: This report describes the presenting findings of three cases of odontomes. In a 9-year-old girl the complex odontome had developed superior to a retained severely infraoccluded 85 where 45 was congenitally absent. In a 10-year-old boy the compound odontome was overlying 27 and was a radiographic incidental finding. Investigation of expansion of 74 alveolus in a 3-year 8-month-old girl led to the discovery of odontomes that had resorbed the root of the deciduous molar and caused displacement of 34 and 35.
Clinical management: The odontome in case 1 was surgically removed to facilitate eruption and subsequent removal of 85. In the second case the odontome was surgically removed and the eruption of 27 is to be monitored. Surgery will be deferred in the third case until the first permanent molars have erupted. Then it is intended to fit a lower lingual arch to maintain space prior to the removal of 74, 75 and the odontomes. It will be necessary to monitor the eruption of 34 and 35.
Discussion: Odontomes commonly present impeding eruption of permanent teeth. Rarely they are associated with eruption disturbances of deciduous teeth, tooth agenesis, resorption or displacement of teeth. When radiographs are taken in a young patient they may be discovered as an incidental finding. Two of these three cases presented in this manner. In each case the treatment and need for follow up is discussed.

P36

Retrospective analysis of self-referred paediatric patients: presentation, management and outcome

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Objective: To determine baseline data in relation to casual patients attending a Hospital Dental Service.
Design: Retrospective observational analysis.
Method: Patient records were analysed for all self-referred paediatric patients attending the Department of Paediatric Dentistry, Dundee Dental Hospital (DDH) between June 2004 and August 2004 inclusive. Records were reviewed and a standardised data collection form completed which sought information regarding initial presentation, dental management and subsequent follow-up.
Results: Data were available for 129 patients [mean age 9.3 (SEM 0.35) years]. Overall, 83.7%, 10.9% and 7.0% presented with dental pain, facial swelling and dento-alveolar trauma, respectively. Regarding presentation, 34.1% presented with more than three carious primary teeth, 33.3% presented with more than three carious permanent teeth and 17.1% with one or more sinuses. Previous dental history revealed that 22.5% were currently registered with Primary Care. In total, 38.8% had previously been seen at DDH, with 42.0% having failed appointments previously. In relation to follow-up, 26.4% and 17.1% were accepted for treatment on the undergraduate student teaching clinic and staff surgery respectively, whilst 23.3% were referred for dental treatment under general anaesthetic. In addition, 46.2% of patients failed to attend one or more visits, with 60.5% of patients completing the initial treatment plan.
Conclusions: The majority of casual patients attending DDH were high caries risk children who were not registered with a practitioner in Primary Care. The subsequent failure rate of such patients following initial presentation was significant, perhaps precluding this group of patients from treatment within the Dental Hospital setting.

P37

Interdisciplinary care of a patient with traumatised incisors and possible child protection issues

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Presenting problem: A healthy, 7-year-old girl was referred by her General Dental Practitioner (GDP) for management of traumatised 11. Examination revealed the patient to be in the mixed dentition, with occlusal caries present on 55, 74 and 85. Tooth 11 presented with an un-complicated crown fracture and a labial sinus. In addition, an enamel fracture was present on 21. All maxillary incisors responded negatively to sensibility testing, although periapical radiography revealed no evidence of pathology.
Clinical management: Pulp extirpation of 11 was completed and the tooth initially dressed with calcium hydroxide. Subsequently, Mineral Trioxide Aggregate apexification of 11 was completed. At this appointment, however, the patient presented with a well-defined slap mark over the right cheek and a red area below the left eye. On questioning, neither patient nor guardian could provide any details as to the aetiology of these lesions. Departmental protocol for suspected child protection issues was followed. This resulted in both Social Work Department and Police involvement. Of note perhaps was that the child had been known previously to the Social Work Department. Further dental care will consist of final obturation and restoration of 11 and continued sensibility testing of all maxillary incisors. All other preventative and restorative care shall be undertaken by the patient's GDP.
Discussion: This case illustrates an interdisciplinary approach for prompt management of immature traumatised incisors. In addition, it highlights the important role paediatric dentist's undertake in relation to child protection issues, with non-accidental injury being a possible cause of dental trauma.

P38

McCune-Albright Syndrome

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Background: Fibrous dysplasia (FD) is a condition that causes lesions in one or more bones of the body. These lesions are tumour-like growths that consist of replacement of the medullar bone with fibrous tissue, causing the expansion and weakening of the areas of bone involved. Especially when involving the skull or facial bones, the lesions can cause externally visible deformities. Three percent of people suffering from FD also have endocrine abnormalities, e.g. precocious puberty, and skin pigmentation; the three together constitute McCune-Albright Syndrome, usually caused by mosaicism in the GNAS1 gene. Craniofacial bones, including the maxilla and mandible, are commonly affected by FD, often causing disfigurement.
Presenting problem: A 9-year-old male was referred by the Oral and Maxillofacial Surgery Department to the Department of Paediatric Dentistry for dental management. He had McCune-Albright Syndrome, involving the skull base, primarily in the midline and on the right, extending to the maxilla and mandible. Dental caries was diagnosed on both the affected and unaffected sides.
Discussion: The dental management of patients with craniofacial fibrous dysplasia is challenging because of the possible post-operative complications as well as the risk of exacerbating fibrous dysplastic lesions within the jaws. The purpose of this case report is to highlight the dental management of this boy with McCune-Albright syndrome, to review the dental anomalies related to the syndrome, and discuss the possible post-op complications associated with routine dental treatment.