R4

Dental age assessment in 15–17 year old young people J. C. MITCHELL*, G. J. ROBERTS & V. S. LUCAS

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Objectives: To determine reference intervals for Dental Age Assessment (DAA) for the 16 year threshold.

Design: Descriptive study from a convenience sample of radiographic archives.

Sample and methods: Dental Panoramic Tomographs of 15–17 year patients treated at King's College Dental Hospital. Tooth Development Stages (TDS) for the 12 stage (Haavikko 1970), and the 8 stage (Demirjian 1971), will be recorded on specially prepared forms. The computer database is designed to return the age of attainment for each of the TDS's. Each TDS provides a set of statistical information viz. the mean, standard deviation, standard error and confidence intervals. In addition a probability distribution function is produced for each TDS. Only teeth that are still developing are included in the assessment. The ages for still developing teeth are 'averaged' using meta-analysis to provide an estimate of age for an individual. This will be tested by taking a separate sample of 50 children with the gold standard of Chronological Age and comparing this with the Dental Age Assessment for these subjects.

Results: To date, a small number of assessments show that the individual Dental Age Assessments are within 6 months of the chronological age.

Conclusion: Dental Age assessment derived by age calculation of tooth development stages and meta-analysis provides, improved estimates of age.

R5

An audit of local compliance with general anaesthetic guidelines outlined for paediatric dentistry

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Objectives: To assess current practice in terms of diagnosis, treatment planning and consent in the use of dental general anaesthetic (GA). To compare current practice to national guidelines and implement any changes required to improve clinical practice.

Methods: A retrospective study was carried out over 1 year (2004–2005). 100 paediatric patients undergoing long (comprehensive care) and short (extractions only) dental GA were randomly selected. A proforma was designed to collect data, from patient records, regarding presenting complaint, medical history, treatment carried out during and before GA and consent. Patients who attended oral and maxillofacial clinics were not included.

Results: In most cases, GA was justified inline with guidelines but consent and treatment planning could be improved.

Conclusion: The department is adhering to guidelines in prescribing GA for patients. It is hoped that by producing a departmental policy, this could improve.

R6

Interventions for treating traumatised non-vital immature permanent incisors

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In traumatised non-vital immature permanent incisors, clinicians are challenged by thin root dentine walls and a wide-open apex. Apexification involves using a temporary paste to stimulate the formation of calcified tissue at the apex; while apical plug techniques involve packing of a material into the apical 2–4 mm of an immature canal to act as a barrier against which gutta-percha is condensed. The risk of root fracture during apexification in immature roots is a concern. This complication has lead researchers to explore ways of root strengthening in addition to inducing a barrier.

Objectives: To assess the effectiveness of methods for inducing an apical barrier or root strengthening and immediate & long-term side effects of these interventions.

Design: Cochrane Systematic Review of randomised controlled trials.

Methods: Electronic and manual search using controlled vocabulary and free text terms with no language restrictions. The methodological quality of each study is assessed using the criteria described in the Cochrane Handbook for Systematic Reviews of Interventions.

Primary results: Multi-database electronic search via OVID revealed 117 total hits.

Conclusions: Primary analysis of reports yielded 10 studies initially fulfilled inclusion criteria, five retrospective studies, 18 *in vitro* studies, six animal studies, 53 case reports & review articles and 25 not applicable reports.

R7

Theatre time trials: an efficiency study of paediatric dentistry lists

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Objective: To determine usage of theatre time during Paediatric Dentistry operating lists.

Design: Prospective cross-sectional study.

Setting: Operating theatres, Sheffield Children's Hospital.

Sample and methods: A standard data collection sheet was employed to record the following information: session (am/pm); type and time of anaesthetic induction; medical status of patient; dental procedures undertaken and total operating time; start and finish time of list and reason for any delays. Each session allocation was 210 minutes.

Results: Data were collected for 36 consecutive Paediatric Dentistry lists over a 4-month period, involving 95 patients. A further eight patients were cancelled on admission. Only one list started on time, the remaining lists had a mean delay of 16 minutes (SD = 12.9; range = 1-51). Delays were mainly attributed to porter shortages, ward delays and late arrival of the anaesthetist. The mean time taken to anaesthetise a patient was 18 minutes (SD = 7.7; range = 5-42) with no significant differences according to type of intubation or patient's medical status (P > 0.05, ANOVA). Mean operating time was 32 minutes (SD = 19.6; range = 5-128) with significant time differences according to procedures undertaken and the patient's medical condition (P < 0.05, ANOVA). Six lists ran overtime by a mean 28.7 minutes (SD = 30.2; range = 3-85) and 25 lists finished early by a mean 56.4 minutes (SD = 41.2; range = 1-170). Overall, a mean 60 minutes (SD = 42.0; range = 1-184) are 'wasted' during every theatre list, with total anaesthetic and operating time accounting for only 71% of the actual session allocation

Conclusions: This study has revealed significant inefficiencies within hospital systems, which may adversely affect productivity.

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