ISSN 1178-6108

Dental Review™

Making Education Easy | Issue 8 – 2008

In this issue:

- *Orthodontic extractions*
- *Amalgam-related mercury exposure*
- *Polishing quality*
- *Periodontal probiotics*
- *Gold is excellent*
- *Injection anxiety*
- *Orthognathic decisions*
- *Root treatment outcomes*
- *Supernumeraries*
- *What not to wear*

Dental Review is also made available to Dental Therapists through the kind support of the New Zealand Dental Therapists' Association

Welcome to the latest edition of Dental Review.

This month we feature an interesting paper on the neurological effects of amalgam-related mercury exposure. It is encouraging to find the effects were inconsequential. Also we include an article on whether it is the injection device or the anxiety experienced that are factors in pain during dental local anaesthesia? Ideas on how to dress complete this issue of Review!

We hope you find this issue stimulating and look forward to your comments.

Kind regards,

Nick Chandler

Associate Professor Nick Chandler
Department of Oral Rehabilitation, University of Otago
nickchandler@researchreview.co.nz

Orthodontic extraction: riskless extraction of impacted lower third molars close to the mandibular canal

Authors: Bonetti GA et al

Summary: In the procedure described the orthodontic anchorage consists of a stainless steel lingual arch welded to bands on the first molar. The third molar crown is surgically exposed and an orthodontic bracket applied: the authors describe two extrusion therapies depending on the type of impaction. One week after exposure a sectional wire is placed and it is untied, reshaped and reactivated every 4-6 weeks. When clinical and radiographic conditions are met the extruded tooth is extracted. This should have minimal risk of complications, especially neurological ones.

Comment: Removal of mandibular third molars is a common oral surgical procedure. There are a variety of complications with neurological ones being most likely to result in legal disputes. Patient age, medical history, level of impaction, tooth inclination, root morphology and clinical competency influence the complications reported. The proximity of the roots to the mandibular canal affects the incidence of neurological complications, with panoramic radiographs being very valuable in diagnosis. This orthodontic extrusion procedure may also help avoid fracture of the mandible and the development of periodontal defects distal to the second molar. The disadvantages are two minor procedures rather than one (probably more major) surgical event. However, if the opposing maxillary tooth has overerupted, it will be necessary to remove this first.

http://dx.doi.org/10.1016/j.joms.2006.03.047

Reference: Journal of Oral Maxillofacial Surgery 2007;65:2580-2586

"Is sensitivity getting on your patients' nerves?" – Alison, Dental Team Leader

Tooth sensitivity is an increasingly common problem among the younger population; around 40% of people over 18 suffer from sensitive teeth.†

The pain can be sharp, sudden and deep making it impossible to enjoy favourite foods and drink.

By recommending Sensodyne Total Care you'll give your patients long-lasting results and ongoing protection from tooth sensitivity. Used twice daily, it's a simple solution.

For more information call us free on 0800 540 144.

SENSODYNE

New Zealand's most recommended toothpaste for sensitive teeth.*

†Data on file.*Consumer Market Research Report December 2006. Sensodyne Total Care contains 50mg/g Potassium Nitrate, 7.6mg/g Sodium Monofluorophosphate, 3mg/g Triclosan. Always read the label, use only as directed. If symptoms persist see your dentist. Sensodyne® is a registered trade mark of the GlaxoSmithKline group of companies. GlaxoSmithKline NZ Ltd, AMP Centre, Level 8, Cnr Albert & Customs Sts, Auckland. GSK31100

For more information, please go to http://www.gsk.co.nz

Neurological outcomes in children with and without amalgam-related mercury exposure

Authors: Lauterbach et al

Summary: This study involved 507 Portuguese children aged 8-12 and commenced in 1997. The patients received either amalgam or composite restorations. The average amalgam exposure was 7.7-10.7 surfaces per subject over the seven years of the study. Two types of neurological signs were assessed using routine neurological examinations. The conclusion was that mercury exposure from dental amalgams did not adversely affect neurological status.

Comment: These are quite high levels of amalgam exposure and it is encouraging to find this has inconsequential neurological effects. In May 2007 staff and students at the Otago School of Dentistry were fortunate to be introduced to this massive project by one of the researchers. It involves a very large collaboration between the Universities of Lisbon, Portugal and Washington, Seattle, USA, and this is just one of a string of publications arising from it.

http://jada.ada.org/cgi/content/abstract/139/2/138

Reference: Journal of the American Dental Association 2008;139:138-145

Med First:
helping medical professionals be better off.
Better Off Bank of New Zealand

Is surface roughness of resin composites affected by operator performance?

Authors: Jung M et al

Summary: This experiment used 120 specimens of Herculite XRV composite. Four human operators with different levels of experience were compared with an automatic mechanical device known as operator 5. Finishing diamonds and polishing cups were used. The experiment was repeated 2 days later with new specimens and instruments. The researchers used optical profilometry to assess surface roughness. A significant interindividual effect in surface roughness was found between the human and mechanical operators. For two operators the intraindividual differences in average roughness were significant. The surface quality of the polished specimens did not correlate positively with the operator's experience.

Comment: In many dental procedures a manual rotary operation is performed on a specimen by a single operator, and the quality of this may vary on a day-to-day basis. Presumably the findings of this study would also relate to items fabricated in dental laboratories. This work alerts us to the dangers of comparing numerical surface roughness data from different studies.

http://www.amjdent.com/Archive/Abstracts/February%202008%20Abstracts.htm#Jung

Reference: American Journal of Dentistry 2008;21:3-6

Guiding periodontal pocket recolonization; a proof of concept

Authors: Teughels W et al

Summary: In the oropharyngeal region probiotic or replacement therapies have shown some benefit in the prevention of caries, otitis media and pharyngitis. This study investigated their effectiveness in the treatment of periodontitis using a beagle dog model. The hypothesis was that introducing beneficial bacteria after mechanical debridement would encourage a microbial shift away from periodontopathogens. After root planing mixed bacterial pellets were applied to selected periodontal pockets using a blunt needle. Subgingival plaque samples were taken at intervals and a clinician unaware of the treatment strategy examined probing pocket depth and bleeding on probing 12 weeks after debridement. Recolonization of periodontopathogens was delayed and reduced. Clinical inflammation was also reduced.

Comment: Replacement (probiotic) therapy originated more than a century ago. Interest in it faded with the advent of antibiotics, but there is now heightened awareness of its possibilities because of antibiotic resistance. This report suggests that guided pocket recolonization (GPR) may have a future in the treatment of periodontitis.

http://jdr.iadrjournals.org/cgi/content/abstract/86/11/1078

Reference: Journal of Dental Research 2007;86:1078-1082

Enterprise Medical Bureau Can Help You with all your temporary and permanent Dental Staffing Solutions.

Contact Lisa Harris or Melissa Moser today on (09) 306 1949 or email bureau@enterprise.co.nz

ENTERPRISE RECRUITMENT

Get tough on dental pain with Panadeine* Plus.

PHARMACY MEDICINE
Panadeine PLUS
Extra Strength Pain Relief
12 CAPLETS

GlaxoSmithKline

Panadeine PLUS

PLEASE REVIEW THIS INFORMATION BEFORE RECOMMENDING. Panadeine* Plus contains paracetamol 500mg and codeine phosphate 15mg. Use: Temporary relief from moderate to severe pain. Contraindications: Hypersensitivity to any ingredient in the product; Children under 12 years. Precautions: CNS, respiratory depression; high doses; prolonged use; renal, hepatic impairment; poor CYP2D6 function; lactation. Adverse reactions: Dependence; Impairment of mental & physical abilities; nausea, vomiting, constipation; dizziness; drowsiness. Interactions: Anticoagulants; sedatives, tranquillisers; drugs affecting gastric emptying; chloramphenicol; hepatic enzyme inducers; CYP2D6 inhibitors. Dosage: Adults and children 12 years and over: 2 caplets every 4-6 hours orally with water (maximum 8 caplets in 24hrs). Further information is available from GlaxoSmithKline Consumer Healthcare on request (FREECALL: 0800 540 144). *Panadeine is a registered trade mark of the GlaxoSmithKline group of companies. TAPPS NA1840. GLA31542.

For more information, please go to http://www.medsafe.govt.nz

Why gold castings are excellent restorations

Authors: Tucker RV

Summary: Of all the attributes gold restorations have to offer, the most valued is their longevity. This article lists 3 disadvantages of gold restorations and follows with 20 advantages. The disadvantages are that gold is not tooth-coloured, it is more expensive than some other types of fillings, and it requires considerable care and skill by the operator.

Comment: Your writer is the proud possessor of a 1978 vintage MO gold inlay. The cavity was prepared and the inlay cast and polished by a fellow fourth year student as part of a 'requirements gathering' exercise. It was cemented in place with one of the very first glass ionomer luting cements. As one of the larger restorations in my mouth, 30 years on it has outlasted all but one of my smaller amalgams. Sadly, my colleague is now deceased, but his handiwork lives on. The author of this interesting Guest Editorial enthuses about the gold restorations he provided for his wife; except for a mandibular second molar that fractured a cusp, he reports that her teeth are as originally treated 60 years ago.

http://www.jopdent.org/journal/editorial/openFile.php?takeFile=Volume_33__Issue_2.txt

Reference: Operative Dentistry 2008;33:113-115

Is it the injection device or the anxiety experienced that causes pain during dental local anaesthesia?

Authors: Kuscu OO et al

Summary: This experiment investigated a group of 55 children aged 9-13 years with at least two carious teeth, one each side of the maxilla. The patients were divided into an anxious and non-anxious group, and treatment was by the same experienced dentist. Local anaesthetic was introduced using a traditional syringe or an electronic computerized device (the Wand). A range of measurements of dental anxiety were made, including pulse oximetry and visual analogue and other scales. Children with higher anxiety scores were anticipating higher pain perception. No significant difference in pain scores was noted between the injectors.

Comment: There has been a continual search to make injections less painful. New injection devices are not the only mechanisms for pain-free dental injections for children. Anxiety plays a very important role in the pain reactions of children. In a published pilot study as part of this research it was found that even the injector preferences of the children were influenced by anxiety.

http://dx.doi.org/10.1111/j.1365-263X.2007.00875.x

Reference: International Journal of Paediatric Dentistry 2008;18:139-145

Independent commentary by Associate Professor Nick Chandler of the Department of Oral Rehabilitation, University of Otago

Elective orthognathic treatment decision making: a survey of patient reasons and experiences

Authors: Stirling J et al

Summary: Not much is known about how patients make decisions concerning orthognathic surgery. This study involved 138 patients who had made their decisions between 18 and 42 months previously, or who were about to make them. Subjects were asked to complete a questionnaire and be interviewed, and 31 and 30 in the two groups agreed. Those taking part were significantly older than those declining. The dentists involved in treatment rated the appearance of the patients as less satisfactory than the patients. In the interviews appearance was the key factor in seeking treatment, but in the survey forms occlusion and dental appearance were the main motivators.

Comment: Individuals are not very systematic in making treatment decisions, often trying to simplify the process, perhaps by trying not to think about recommendations from relatives and friends and aspects of the process that do not sound pleasing. Only two-thirds of the patients in this study weighed the benefits against the risks in order to make their decision: most had made up their minds before talking to the experts. It seems that more support is needed to help patients make informed treatment choices; research from orthopaedic surgery units has shown that patients are more satisfied when fully involved in treatment decisions.

http://dx.doi.org/10.1179/146531207225022023

Reference: Journal of Orthodontics 2007;34:113-127

Research Review publications are intended for New Zealand health professionals

"Ask your Territory Manager for more information TODAY"

Multilink® Automix

Universal luting composite in the automix syringe

The universal self-etching luting composite system for indirect restorations made of metal, metal ceramics, all ceramics, composite and fibre-reinforced composite material.

Time-saving direct application

No manual mixing
Easy to use
Strong bond
Self-curing with light-curing option

For more information, please go to http://www.ivoclarvivadent.co.nz

Opinions of dental professionals from a large American insurance system on outcome of non-surgical root canal treatment

Authors: Rotstein I et al

Summary: An 8 item questionnaire was handed out during an endodontic continuing education course. It included four multiple-choice questions on the participants' opinions on endodontic treatment outcomes. Ninety-three percent thought that endodontic treatment was predictable, with a long-term tooth retention rate. If additional treatment was needed because of failure, the survey group thought this would be necessary within the first three years. Full coronal coverage following root canal treatment was considered very important for long-term tooth retention by 87%.

Comment: A positive trend was found between years of professional experience and opinions on the importance of coronal coverage. The respondents with more experience indicated the tooth retention rate to be more than 90%. Previously published outcome studies support the view that clinical failures are usually recognized within three years. "Success and failure" require calibration among researchers and there may be problems over the precise definition of terms. As this project looked at loss of teeth over time among a large group of practitioners it views the subject in a different way, avoiding such things as lesions which do not heal (or get larger) while the teeth remain functional and free of symptoms.

http://www.amjdent.com/Archive/Abstracts/February%202008%20Abstracts.htm#Rotstein

Reference: American Journal of Dentistry 2008;21:21-24

A survey of 460 supernumerary teeth in Brazilian children and adolescents

Authors: Gomes CDE et al

Summary: Supernumerary teeth are those formed additionally to the normal dentition. They are found in the primary and permanent dentition, but are more common in the latter. The most frequent locations are the premaxilla and the mandibular premolar areas. This study examined 460 supernumerary teeth in 305 patients. Most were identified radiographically, and were single, conical-shaped and unerupted. Less than 3% of the supernumerary teeth were in the primary dentition. The most common clinical complication was displaced permanent teeth. Treatment was mostly by surgical extraction followed by orthodontics.

Comment: This report represents one of largest series of supernumerary teeth reported in the English literature. These additional teeth should be diagnosed as early as possible to avoid complications.

http://dx.doi.org/10.1111/j.1365-263X.2007.00862.x

Reference: International Journal of Paediatric Dentistry 2008;18:98-106

Patient preferences for dental clinical attire: a cross-sectional survey in a dental hospital

Authors: McKenna G et al

Summary: Questionnaires were distributed to new patients attending for their first consultation at a dental school. The survey was developed to collect data on clinical clothing, name badges and a number of cross infection control measures. It was accompanied by a set of 12 photographs of male and female models wearing a variety of clinical attires. Subjects were asked the attire that best portrayed what the consultant/specialist and dentist should wear. The survey group comprised 115 males and 73 males. Some 62% reported that how a dentist dresses was important or very important, and the majority preferred dentists to use both safety glasses and face masks. Nearly 80% of the patients thought the consultant/specialist should wear formal attire with a white coat. Wearing a name badge was preferred by 93% of participants.

Comment: Patients clearly have strong opinions about how dental staff should dress, and female participants placed greater emphasis on this. The traditional white tunic was preferred; recently, there has been a move away from these, probably for reasons of comfort. Patients in the study were new to their environment, so it was not surprising they were enthusiastic to see name badges being worn. Interestingly, in an audit of the same institution as part of this study, only 15% of personnel were wearing visible name badges.

http://dx.doi.org/10.1038/bdj.2007.1109

Reference: British Dental Journal 2007;203:681-685

Available Now –
Rehabilitation Research Review by Professor Kath McPherson.

Update your subscription by logging onto the member's area at www.researchreview.co.nz

Privacy Policy: *Research Review will record your email details on a secure database and will not release it to anyone without your prior approval. Research Review and you have the right to inspect, update or delete your details at any time.*

Disclaimer: *This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.*

SDI polaoffice+
The world's fastest bleach
click here to save today
1 PATIENT KIT
Introductory Price $72.00
Normal price $110 SAVE $38

HENRY SCHEIN SHALFOON
Everything Dental.
Freephone 0800 808 855
www.henryscheinshalfoon.co.nz
Offer valid until 30 June 2008. Price excludes GST & Freight.
SD-7700415