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Issue 28 - 2011

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Welcome. This issue considers a variety of topics from injection devices and apex location for children to ways of using a combination of composite and amalgam for coronal restorations.

Thank you to all who find the time to provide feedback on Dental Review and for the continued support of our sponsors. Please feel free to pass the publication on to friends and colleagues who might be interested.

Best Wishes,

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Is endodontic re-treatment mandatory for every relatively old temporary restoration? A narrative review

Authors: Keinan D et al

Summary: Success of endodontic treatment is influenced by the coronal restoration. What should we do when a root-filled tooth has an old temporary restoration, a faulty permanent restoration or root filling material is exposed in the mouth? Three decades ago, almost one in five articles in the endodontic journals was about microleakage. With interest in these mostly small, laboratory studies waning, the subject receives a timely review.

Comment: It is precisely 50 years since the first publication suggesting an association between coronal leakage and endodontic failure appeared. The authors consider that today there is still little strong and clear evidence of a relationship between coronal leakage and endodontic failure when the root canal treatment is of high quality. They suggest that it may be prudent to replace failing restorations with a new restoration and observe for at least three months before proceeding to make a prosthetic crown for the tooth. Perhaps a written note outlining your concerns and signed by the patient is a good idea too?

Reference: *Journal of the American Dental Association* 2011;142(4): 391-396

<http://jada.ada.org/content/142/4/391.abstract>



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Effectiveness of the salivary occult blood test as a screening method for periodontal status

Authors: Shimazaki Y et al

Summary: Community-based periodontal examinations can be costly and difficult to carry out. Salivary occult blood tests have been used as a screening method for gingivitis. This experiment involved 1,998 subjects, with the test comprising a paper test strip dipped into a saliva sample. The haemoglobin present was detected immunologically. This was followed by a periodontal examination.

Comment: This test may offer a simple and non-invasive method for screening periodontal status where a thorough examination cannot be carried out, perhaps for large populations. One study suggested it could discriminate patients with bleeding on probing or probing depths greater than 6 mm. In this study it was reasonably sensitive in detecting patients with gingival bleeding or deep periodontal pockets, but not specific enough to replace conventional examinations.

Reference: *Journal of Periodontology* 2011;82(4):581-587

<http://tinyurl.com/J-Periodont-82-581-7>

Orthodontic management of inverted and impacted bilateral maxillary central incisors: A case report

Authors: Lan Z et al

Summary: The authors report a case of impacted maxillary central incisors that were completely inverted. The patient was aged 13 years and presented with a Class II dental malocclusion. Space was made for the impacted teeth and the anterior teeth aligned; the palatal surfaces of the inverted teeth were then surgically exposed and an attachment bonded. The flap was then closed, and as the teeth moved the orthodontic forces were gradually adjusted until the teeth emerged in the mouth and could be banded. A good appearance was achieved, with radiographs showing minimal root resorption.

Comment: This paper is worth looking at for the radiographs alone, and is much more exciting than the more usual labial or lingually positioned incisors. Treatment time was only 28 months.

Reference: *Quintessence International* 2011;42(6):459-461

<http://tinyurl.com/Quintessence-42-459-61>

The accuracy of medical history information in referral letters

Authors: DeAngelis AF et al

Summary: The aim was to investigate if medical information in referrals is inaccurate or non-existent. Medical histories of 54 new patients seen in the oral surgery unit of an Australian hospital were examined. The completeness of information in the medical practitioner referrals was higher than those of the dentists (62% compared to 55%). This may be due to the common use in medical practices of computer-generated medical and drug history information, which allows printed records to be sent with the referral letter.

Comment: The overall completeness of medical information in the referral letters was about 60%. The best reported items were bleeding problems, bisphosphonate use and diabetes. The worst were infectious disease status, strokes and epilepsy. Research shows that the use of a pro-forma has varied success in eliciting accurate information, but perhaps increasing computerisation of dental records will improve matters.

Reference: *Australian Dental Journal* 2010;55(2):188-192

<http://onlinelibrary.wiley.com/doi/10.1111/j.1834-7819.2010.01221.x/abstract>

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Evaluation of the effects of the VibraJect attachment on pain in children receiving local anesthesia

Authors: Roeber B et al

Summary: The VibraJect is a small, battery powered device which clips onto a local anaesthetic syringe and creates a vibrating stimulus. This is meant to stimulate large diameter nerve fibres and inhibit pain signals. Ninety children aged 4–8 years received either injections as usual or were in the experimental group. There were no differences found when self-reported pain, observations of pain-related disruptive behaviour and subjective dentist ratings were considered.

Comment: In adult patients research studies have produced mixed results. Local suppliers kindly provided me with a VibraJect to try and sadly all the dentists I have shown it to think it is rather gimmicky. But as a group we cannot resist gadgets. With a bit of modification I think it could be useful to agitate endodontic irrigants (like the Maillefer EndoActivator, sorry Dentsply) or to condense mineral trioxide aggregate into root canals. But I expect the manufacturers are onto that already!

Reference: *Pediatric Dentistry* 2011;33(1):46-50

<http://tinyurl.com/Ped-Dent-v33-46>

Clinical evaluation of the accuracy of conventional radiography and apex locators in primary teeth

Authors: Patiño-Marín N et al

Summary: The accuracy of conventional radiographs and the Root ZX and ProPex apex locators in primary teeth (mostly incisors) were compared. Fifty 4–10-year-olds were involved and the teeth extracted after length determinations. With files replaced the apices were examined with a scanning electron microscope. Sixty-one canals were analysed, and the most accurate method to determine working length was the Root ZX apex locator.

Comment: Root canal treatment of children is demanding and any reduction in time helps with patient cooperation. At the very least, the use of an apex locator should reduce the number of radiographs necessary, as has been shown in the treatment of permanent teeth in adults.

Reference: *Pediatric Dentistry* 2011;33(1):19-22

<http://tinyurl.com/Ped-Dent-v33-19>

Impact of the NICE guideline recommending cessation of antibiotic prophylaxis for prevention of infective endocarditis: before and after study

Authors: Thornhill MH et al

Summary: In March 2008 the National Institute for Health and Clinical Excellence in the UK introduced a controversial new guideline recommending no antibiotic cover for patients at risk of infective endocarditis undergoing dentistry and a range of other procedures. National prescribing data from January 2004 to April 2010 was compared with national in-patient data on infective endocarditis for a longer period. A highly significant (78.6%) reduction in prescribing was noted, while data for an upward trend in infective endocarditis was lacking.

Comment: Another article where the first thought is 'more data required', with the authors seeking further clinical trials to see if antibiotics protect those patients who are very high risk. Something for overseas authorities and us in New Zealand to watch very closely.

Reference: *British Medical Journal* 2011;342:d2392

<http://www.bmj.com/content/342/bmj.d2392.full>

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Three-year clinical evaluation of cuspal coverage with combined composite-amalgam in endodontically-treated maxillary premolars

Authors: Shafiei F et al

Summary: Thirty-six maxillary premolars were restored by the open sandwich technique. Composite replaced the non-functional cusp (for aesthetics) and then amalgam was used to restore the functional cusp. This sequence might allow the amalgam particles to interlock with the air-inhibited layer of the composite.

Comment: An interesting way to try and get the best of both worlds, in a single visit and with an acceptable result in most cases. Root-filled maxillary premolars are susceptible to fracture, especially when marginal ridges are missing. If the rate of serious failures remains low over a longer period, this technique could be useful.

Reference: Operative Dentistry 2010;35(6):599-604

http://tinyurl.com/Operat-Dent-35-599

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Wear of ball attachments after 1 to 8 years of clinical use: a qualitative analysis

Authors: Fromentin O et al

Summary: The authors analysed ball attachments worn by patients during three periods of clinical use by scanning electron microscopy. Thirty-six patients had been provided with mandibular complete overdentures supported by two implants. Some 144 ball anchor attachments (gold alloy matrix, titanium matrix) were studied after 1, 3 and 8 years' clinical use, with 20 new components used as controls. The matrix components were roughened after use, and the gold alloy matrices showed wear, roughening and loss of material as flakes.

Comment: One year's use had limited effect but severe wear was found after longer periods of use. There was also plastic deformation of both surfaces which slid across one another under pressure. The changes were not related to the patient's thoughts about retention, and more results on this aspect would be interesting.

Reference: International Journal of Prosthodontics 2011;24(3):270-272

http://tinyurl.com/Int-J-Prost-24-270

Quality of life of endodontically treated versus implant treated patients: a University-based qualitative research study

Authors: Gatten DL et al

Summary: The researchers investigated 48 patients, half with a single root-filled tooth and half with an implant-supported prosthesis. Focus group discussions were held and recorded, with data analysed to find common themes and differences in quality of life from the treatments. Scores were similar with high rates of satisfaction.

Comment: Studies have shown endodontic treatment and implant-supported prostheses to have similar clinical outcome and survival rates. This interesting 'patient perceptions' paper is probably the first of its type and featured a small study group that was not very well matched for gender. We are not informed as to whether the implants are all of one standardised type, or if they were used to replace teeth which were traumatised or had failed root canal treatments. However, some very interesting comments from their patients are recorded, alerting us to things we might discuss with our own patients before proceeding with treatment.

Reference: Journal of Endodontics 2011;37(7):903-909

http://www.jendodon.com/article/S0099-2399%2811%2900417-1/abstract

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