Other journals in brief

A selection of abstracts of clinically relevant papers from other journals.

The abstracts on this page have been chosen and edited by John R. Radford.

REMOVING OCCLUSAL INTERFERENCES

Health risk from occlusal interferences in females

Kirveskari P, Jämsä T. *Eur J Orthod* 2009; **31**: 490–495

'...elimination of occlusal interferences significantly reduced the incidence of requests for treatment of symptoms in the head and cervicobrachial region'.

Some commentators suggest that the removal of occlusal interferences for the treatment of temporomandibular disorders (TMDs) raises 'ethical doubts'. Within this backdrop, the investigators carried out occlusal adjustment on 54 patients and sham grinding on a further 58 patients. All were females and were 45 years of age or under. The outcome variable was a request for further treatment, after every 12 months, over a period of 4 years. Occlusal adjustment was carried out according to the tenets of Dawson. 'The cumulative incidence rate of treatment requests was 2/54 in the treatment group and 11/58 in the control group'. The relative risk, at the 95 percent confidence limits, was significantly different ($P = 0.0336$). This study was funded by the American Equilibration Society.

DOI: 10.1038/sj.bdj.2010.401

PLASMA JET

Killing of adherent oral microbes by a non-thermal atmospheric plasma jet

Rupf S, Lehmann A *et al.* *J Med Microbiol* 2010; **59**: 206–212

Non-thermal atmospheric plasma jet did not kill all micro-organisms when tested using *in vitro* models.

Plasma jets are 'ionized local gas flows, generated under normal pressure by means of microwaves... using noble gases'. This *in vitro* study, using a microbial culture technique on agar plates and 'dentin slices', examined the antimicrobial efficacy of a non-thermal plasma jet. It was tested against representative strains of oral micro-organisms and *Escherichia coli*, as a control. Although the plasma jet resulted in several log₁₀ reduction in all micro-organisms tested, the killing effect was incomplete. Other types of plasma jets have been used to sterilise surgical instruments. In addition, it has been suggested that plasma jets may have a role in disrupting the biofilm and 'removal of carious dentin'. The investigators did not examine this but recorded a maximum temperature of 50.8°C on dentine slices, a temperature that can be tolerated comfortably in the mouth.

DOI: 10.1038/sj.bdj.2010.402

C-REACTIVE PROTEIN

Periodontitis-associated up-regulation of systemic inflammatory mediator level may increase the risk of coronary heart disease

Nakajima T, Honda T *et al.* *J Periodont Res* 2010; **45**: 116–122.

It is not possible from this study to make a direct link between the decrease in inflammatory mediators associated with periodontal treatment and coronary heart disease.

This study investigated if the treatment of chronic periodontitis produced changes in serum levels of high-sensitivity C-reactive protein (hs-CRP), interleukin-6 (IL-6) and tumour necrosis factor- α (TNF- α). High-sensitivity C-reactive protein 'is an independent determinant of cardiovascular risk' and has been found at significantly higher levels in patients with periodontal disease. In this study, the concentrations of hs-CRP and IL-6 were significantly higher in the sera of those with periodontitis ($n = 78$) compared with controls. ($n = 40$). This is in contrast to TNF- α . Periodontal treatment was associated with significantly decreased levels of serum hs-CRP and IL-6 but not TNF- α . Coronary heart disease was not examined in these 'otherwise healthy Japanese' patients.

DOI: 10.1038/sj.bdj.2010.403

ELECTRIC-MOTOR DENTAL HANDPIECES

Comparison of cutting efficiencies between electric and air-turbine dental handpieces

Choi C, Driscoll CF *et al.* *J Prosthet Dent* 2010; **103**: 101–107

Use of an electric-motor handpiece was no more effective than an air-turbine handpiece at cutting a 'ceramic implant abutment material'.

This *in vitro* study compared the efficiency of an air-turbine handpiece (KaVo OPTitorque LUX3 649B) with that of an electric-motor handpiece (Ti-Max NL400; Brasseler USA) to cut different dental materials. A standardised method was employed to examine the efficacy of the test handpieces. The burs used were those recommended by the manufactures for cutting the specific dental materials. There was no difference in efficacy between the use of an electric motor and air-turbine handpiece when cutting zirconium oxide, aluminum oxide, noble metal alloy, and base metal alloy. However, use of the electric handpiece was more efficient at cutting Macor (machinable glass ceramic), silver amalgam, and a high noble alloy.

DOI: 10.1038/sj.bdj.2010.404