

# 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.

## CARDIAC IMPLANTABLE ELECTRICAL DEVICES

### Capacity of dental equipment to interfere with cardiac implantable electrical devices

Lahor-Soler E, Miranda-Rius J *et al.* *Eur J Oral Sci* 2015; **123**: 194–201

**Some reassurance for dental care professionals in that dental equipment which generates electromagnetic interference causes only 'light interference' of cardiac implantable devices, when that device and the dental equipment are separated by a distance of 20 cm.**

There is a commonly held view that modern cardiac implantable electrical devices, which include pacemakers and implantable cardioverter defibrillators, are protected from electromagnetic currents generated by dental equipment. But is this true and does this apply for all such dental equipment? In this *in vitro* study, it was shown that at a distance of 20 cm (distance between the dental device and the infraclavicular region where the cardiac devices are implanted), only 'light interference' was observed and was restricted to implantable cardioverter defibrillators. Electric pulp testers caused the most electromagnetic interference. Interference was increased when the insulation of the dental device had deteriorated. The investigators did not investigate the effect of such dental equipment on cochlear implants, which are particularly sensitive to electromagnetic currents. Current guidelines in the UK in relation to cochlear implants are at present being updated.

DOI: 10.1038/sj.bdj.2016.89

## ROOT-FILLED TEETH – MARGINAL PERIODONTITIS

### A root canal filling per se does not have a significant negative effect on the marginal periodontium

Bertl K, Suljkanovic N *et al.* *J Clin Periodontol* 2015; **42**: 520–529

**Neither before nor after periodontal treatment do root-filled teeth have associated marginal periodontal tissue destruction.**

The outcome of a perforation of the root when preparing a dowel results invariably in marginal periodontal tissue destruction. But this is an extreme violation of the periodontal ligament. What if the involvement of this structure is minor, such as following a root filling? The results of previous studies are equivocal as to whether or not a satisfactory root filling is associated with marginal periodontitis. In this study, after taking into account factors such as the degree the coronal restoration encroached on the gingival domain, there were no differences between marginal periodontal tissue destruction (measured using BoP, PD, CAL) in single-rooted teeth that were root-treated and control teeth that were not root-treated, before or after non-surgical periodontal treatment. This was a retrospective split-mouth study, in which the dental records of 175 patients were interrogated. In other studies that included multi-rooted teeth that had been root-treated, the observation of marginal periodontal tissue breakdown could be associated with accessory canals at the furcation.

DOI: 10.1038/sj.bdj.2016.91

## BARIATRIC SURGERY – PERIODONTAL DISEASE

### Periodontal status and pathogenic bacteria after gastric bypass: a cohort study

Sales-Peres SH, de Moura-Grec PG *et al.* *J Clin Periodontol* 2015; **42**: 530–536

**'A systemic inflammation resolution due to bariatric surgery...does not seem to affect the course of periodontal disease.'**

The hypothesis on which this study was based, was that there should be a reduction in periodontal disease following gastric surgery; it has been shown that bariatric surgery reduces the inflammatory response. But in this study, it was found that after bariatric surgery the periodontal condition did not improve. A possible explanation for this observation is that patients' eating habits had changed which resulted in a more favourable environment for periodontopathic bacteria. Another explanation, is that bariatric surgery could be associated with nutritional deficiencies, such as lack of vitamin D, that may be detrimental to periodontal health. In this prospective study that recruited 50 patients, among other data, BMI and periodontal measurements were recorded before, 6 months and 12 months after bariatric surgery. In addition, periodontopathic organisms were quantified in GCF using q-PCR. Twelve months after surgery, there were reductions in C-reactive protein and glucose levels, and mean BMI had reduced from 49.69 to 32.16. But the mean probing pocket depth measurements and the clinical attachment loss level had all increased, as did the relative quantification of *P. gingivalis*.

DOI: 10.1038/sj.bdj.2016.90

## IMPROVING THE AESTHETICS OF ZIRCONIA

### Light transmittance by a multi-coloured zirconia material

Ueda K, Güth JF *et al.* *Dent Mater J* 2015; **34**: 310–314

**All this study showed was that each layer of a multicoloured zirconia material had a different light transmittance and, this was despite it being conceded that it was 'impossible to determine the precise boundaries of each layer during sectioning'.**

Veneering materials are used to improve the dental aesthetic of zirconia substructures. But in one study, it has been reported that the 'chipping' of the veneering material is as high as 15%, over a 2-year observational period. Monolithic zirconia restorations eliminate this type of failure. In addition, such restorations require less tooth preparation. However, they have suboptimal aesthetics as monolithic zirconia is both monochromatic and opaque. These investigators studied the optical properties of a four-layered, multicoloured zirconia material (KATANA™ Zirconia Multi-Layered Disc (ML), Noritake Dental Supply Co., Ltd, Miyoshi, Japan). The transmission of visible light differed between each of the 1 mm thick sections of this four-layered zirconia. The investigators cite another study that found the 'translucency of the lithium disilicate glass ceramic group was significantly higher compared to all of the other zirconia groups.'

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