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.

LITTLE ON RISKS

Parental knowledge and attitudes towards dental radiography for children

Chiri R, Awan S *et al. Aust Dent J* 2013; **58:** 163–169

Dentists did explain to parents the reasons for taking radiographs of their children but did not give the risks.

A 21-item questionnaire was used to find out what parents felt about the use of dental radiography for their children. Only 21% of parents responded, and more than one quarter of those failed to answer all the survey items. Half their children had previously received radiographs with a similar proportion of parents 'university educated'. This selected group had few issues with the taking of radiographs for their children despite only one third being given the risks. It is important that the use of planar radiography is not mudded by some of the concerns with the use of CBCT in children. The New York Times has suggested that 'more profit per unit chair time' may result in 'what they (the experts) see as their (CBCT) indiscriminate use'.

DOI: 10.1038/sj.bdj.2013.1165

DETECTING ROOT PERFORATIONS

Influence of voxel size on the diagnostic ability of cone-beam computed tomography to evaluate simulated root perforations

Venskutonis T, Juodzbalys G *et al. Oral Radiol* 2013 **29:** 151–159

It would appear that CBCT can be used to diagnose buccal/palatal root perforations.

A careful technique employing NiTi instruments seldom results in root perforation. And then if such an adverse incident is suspected, invariably there is intracanal bleeding, or possible visualisation of the perforation using an operating microscope, or aberrantly positioned files or obturation. None of these signs suggestive of root perforation were described in this paper. In this *in vitro* study carried out on 36 mandibular incisor teeth, the authors found that planar radiography could not be used to detect simulated root perforations (0.2-0.4 mm in diameter, with no subsequent root filling) in the buccal/lingual plane. This is in contrast to the use of CBCT, although there was increasing difficulty with identifying root perforations in the apical third. A 0.2 mm voxel (volumetric pixel) resolution was the most effective at detecting such perforations. There were methodological problems with this study.

DOI: 10.1038/sj.bdj.2013.1167

STATINS – TREATMENT FOR PERIODONTAL DISEASE

Simvastatin local drug delivery in smokers with chronic periodontitis: a randomized controlled clinical trial

Rao NS, Pradeep AR *et al. Aust Dent J* 2013; **58:** 56–162

Remarkable improvement in clinical periodontal measurements after treatment with local delivery of statins in smokers with chronic periodontitis.

3-Hydroxy-3-methyl glutaryl coenzyme A (HMG-CoA) reductase plays a central role in cholesterol synthesis in the liver. Statins inhibit HMG-CoA reductase. In this study, 40 patients with chronic periodontitis who regularly smoked more than 10 cigarettes/day for a minimum of 5 years, were randomly assigned to either a group that received 1) 1.2% simvastatin incorporated in a biodegradable controlled release gel together with scaling and root planning, or 2) a control group that were given a placebo gel and scaling and root planning. After each of 3, 6 and 9 months, the investigators reported that in the test group there was a reduction in PD, improved bone fill and less BOP. Possible mechanisms could be that statins inhibit lipopolysaccharide-induced expression of pro-inflammatory genes or partial inhibition of osteoporosis.

DOI: 10.1038/sj.bdj.2013.1166

3D PRINTING

A critical inventory of preoperative skull replicas

Fasel JHD, Beinemann J *et al. Ann R Coll Surg Engl* 2013; **95:** 401–404

Proven diagnostic and surgical insight must not be 'replaced by uncritical belief in informatics tools'.

Minimally invasive and personalised surgery, and radiology are increasingly being used together. 3D printing constructs a replica from a digital model. But is this a true replica? This study only examined three cadavers. This belies the key conclusion that 3D printing was 'far from anatomically accurate' when compared with anatomical maceration (controlled purification), the gold standard. 3D printing revealed a litany of artefacts and defects. With regard to dental osteology, the 3D print showed a pseudo-nutrient foramen at the coronoid process, whereas the actual nutrient foramen was adjacent to the insertion of the buccinator muscle. And then there were the usual artefacts caused by dental amalgam restorations. Problems associated with the use of 3D printing in dentistry, particularly when used in dental implant planning were not within the remit of this report.

DOI: 10.1038/sj.bdj.2013.1168