

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.

Apical pathology and systemic disease

Association between systemic diseases and apical periodontitis

Khalighinejad N, Aminoshariae MR *et al.* *J Endod* 2016; **42**: 1427–1434

There may be a bidirectional link between cardiovascular disease (CVD) and endodontic disease.

In this muddled paper, the results were given in the discussion, the direction of association was unclear, and although causation was touched on, there was no mention of the Bradford Hill Criteria.

But there was an abundance on plausibility (the mechanism that links cause and effect). For example, these authors cite a paper that found interleukin 6 and tumour necrosis factor can increase insulin resistance but then state ‘...the current evidence is inconclusive and insufficient to suggest an association’ between diabetes and endodontic disease. The key observation was that there was a link between endodontic pathology and CVD, and CVD and endodontic disease. Only those studies looking for associations between CVD and endodontic disease showed a low level of bias. The quality of studies looking for other such links with identified systemic disease such as chronic liver disease, haemophilia and bone mineral density were poor. In this systematic review, 16 articles were interrogated. It was not possible to carry out a meta analysis due to study heterogeneity.

DOI: 10.1038/sj.bdj.2016.820

Paper points

Paper points revisited: risk of cellulose fibre shedding during canal length confirmation

Brown DW. *Int Endod J* 2016; DOI:10.1111/iej.12663.

All brands of endodontic paper points shed fibres, and these fibres may be associated with foreign body giant cell reactions.

Paper points, then made from bibulous (blotting) paper, have come a long way from those that used to become impossibly lodged in canals when used to deliver interappointment medicaments. Paper points have also been used to determine working lengths if conventional methods give equivocal readings; the paper point method is used to identify the moist/dry junction which is assumed to correspond with the apical foramen. In this *in vitro* study, the investigator used polarised light to identify fibres shed from paper points after inserting them into artificial root canal blocks, prepared with rotary instruments. All endodontic paper points shed fibres. Such shedding of fibres from paper points has been reported to be associated with foreign body giant cell reactions. The author quotes another investigator, albeit from an historic paper, in that ‘extreme caution’ should be exercised when using paper points, and indeed there should be a search for alternative absorbents.

DOI: 10.1038/sj.bdj.2016.822

Mere preferences

Cost-effectiveness of single- versus multistep-root canal treatment

Schwendicke F, Göstemeyer G. *J Endod* 2016; **42**: 1446–1452

‘...scheduling treatments as well as patients’ and dentists’ preferences’ although trivial, are factors that influence treatment modality.

Anecdote would suggest that a single-visit root canal treatment is less expensive than a multiple-visit approach. In addition, a single-visit regimen does not require repeated local anaesthetics and the use of leaky intermediary restorations. Indeed the European Society of Endodontology proclaim that multiple-visit treatment is rarely needed for vital teeth; but then how often is an endodontic treatment carried out on a vital tooth? But single-visit root canal treatment may be associated with inferior outcomes. These investigators used sophisticated modelling software (TreeAge Pro 2013; TreeAge Software, Williamstown, MA) to explore the outcome of single-visit *versus* multiple-visit root canal treatment. The outcomes for many different endodontic and non-endodontic complications were obtained from studies that were identified from a limited systematic review. The health outcome was tooth retention years. Hazard functions were calculated. Cost calculations were based on German public and private dental fees. Taken in the round, there were no differences in cost-effectiveness between single- and multiple-visit endodontic treatment in both single-rooted and molar teeth. For both vital or non-vital molar teeth the cost was ca. 1,700 EUR, with tooth retention years of 20 years. For incisor teeth, the cost was slightly cheaper with similar survival times.

DOI: 10.1038/sj.bdj.2016.821

Increasing antimicrobial properties of composites

Influence of a polymerizable eugenol derivative on the antibacterial activity and wettability of a resin composite for intracanal post cementation and core build-up restoration

Almaroof A, Niazi SA *et al.* *Dent Mater* 2016; **32**: 929–939

‘...absence of any leachable antibacterial agent.’

A range of antibacterial agents such as chlorhexidine, fluoride and metallic agents have been incorporated in resin composites; alas their antibacterial effects are short-term, and the mechanical and the aesthetic properties of the composite are compromised. The aim of this *in vitro* study was to examine the antibacterial properties of an experimental composite containing eugenyl methacrylate monomer. No inhibition zones (agar diffusion test) were detected against *Enterococcus faecalis*, *Streptococcus mutans* and *Propionibacterium acnes*. Not unexpectedly, however, the composite containing the covalently anchored monomer did demonstrate surface antibacterial activity. In addition, the modified composite demonstrated an increase in hydrophobicity.

DOI: 10.1038/sj.bdj.2016.823