

impression trays to improve the quality of work for patients as well as saving time and money for dentists.

J. S. Hans, London  
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1. Carrotte P V, Winstanley R B, Green J R. A study of the quality of impressions for anterior crowns received at a commercial laboratory. *Br Dent J* 1993; **174**: 235–240.

## ENDODONTICS

### Gross misinterpretation

Sir, as postgraduate students in endodontics, we have undertaken a review of the paper by Hansrani (*BDJ* 2015; **219**: 481–483) and would like to share some of our observations with your readers.

Given the content of the paper, the use of the word 'overview' in the title is not justified as it is more of a personal, discursive exercise undertaken by the author. The notable omissions in the paper are the myriad of factors that affect radiographic interpretation, ranging from observer bias to the location of the periapical lesion in the arch and involvement, or otherwise, of the bony cortical plate. Newer, three-dimensional imaging, such as cone beam computed tomography, was not mentioned at all.

Many of the author's statements are as a result of misinterpretation of, and based on, dated literature. There is no mention of the causes of 'failure' that may, for example, be due to extra-radicular or intra-radicular infection. There is also a complete absence of reference to apical surgery and extraction as treatment options for 'failure' cases apart from these being used as criteria to denote 'failure'.

The author failed to adequately define the criteria used to determine treatment outcome; instead, he compounded the deficiency by misquoting the European Society of Endodontology guidelines.<sup>1</sup> In fact, these guidelines divided outcome into 'favourable', 'unfavourable' and 'uncertain' as well as an 'exception' category for periapical scars.

Recent outcome studies, for example, Ng *et al.*<sup>2</sup> reported on factors associated with endodontic 'success' and 'survival'. This seminal research is not referenced by the author and if enlightened, perhaps the author would not have given credence to the outdated and discredited theory of 'anachoresis'.

The relative importance of thorough canal preparation, effective irrigation, complete obturation and a good coronal seal are poorly addressed and mislead the readers into thinking that obturation is of no significance. Both Klevant and Eggink<sup>3</sup> and Ray and Trope<sup>4</sup> were misquoted. Supported by more recent literature (eg Ng

*et al.*<sup>2</sup>), the evidence points to a combination of high technical quality root canal treatment, as exemplified by good quality obturation, and a good coronal seal, as major contributory factors to 'success'.

In conclusion, we feel that this article grossly misrepresented the topic of radiographic evaluation of 'root fillings'.

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1. European Society of Endodontology. Quality guidelines for endodontic treatment: consensus report of the European Society of Endodontology. *Int Endod J* 2006; **39**: 921–930.
2. Ng Y L, Mann V, Gulabivala K. A prospective study of the factors affecting outcomes of non-surgical root canal treatment; part 1: periapical health. *Int Endod J* 2011; **44**: 583–609.
3. Klevant F J, Eggink C O. The effect of canal preparation on periapical disease. *Int Endod J* 1983; **16**: 68–75.
4. Ray H A, Trope M. Periapical status of endodontically treated teeth in relation to the technical quality of the root filling and the coronal restoration. *Int Endod J* 1995; **28**: 12–18.

### Blatant ignorance

Sir, we are compelled to write to express our dismay at the content of the paper by Hansrani on assessing root canal fillings.

Nearly all the views expressed in the paper are personal opinions, not based on sound scientific evidence or supported by careful and critical analysis of the literature. A principal worry is the constant use of unreferenced or indeed inappropriately referenced statements, which are misleading and not evidence-based. We could provide a line-by-line critique and multiple examples of the deficiencies of the paper but we have selected just a few.

The title does not reflect the contents; purporting to be an overview on assessing root fillings on a radiograph, it is one person's philosophical discourse on the science and practice of endodontics. The interchangeable use of the terms 'periradicular periodontitis', 'periapical periodontitis' and 'apical periodontitis' shows ignorance of terminology and is only one of many examples of sloppiness.

In the opening paragraph, it is claimed that the European Society of Endodontology (ESE) guidelines<sup>1</sup> state that 'radiographs should show the root apex with preferably at least 2–3 mm of the periapical region clearly identifiable.' In an act of self-contradiction, the author then included, amongst the 11-year-old reprinted illustrations, a radiograph (Fig. 2) that failed to meet this requirement and of 'unacceptable' quality if rated according to published guidelines;<sup>2–4</sup> the other two accompanying radiographic images (Figs 1 and 3) are only just about 'diagnostically acceptable'.

Re-stating the ESE's criteria defining an unfavourable outcome,<sup>1</sup> the author is economical with accuracy by conveniently not including the 'Exception: An extensive radiological lesion may heal but leave a locally visible, irregularly mineralised area. This defect may be scar tissue formation rather than a sign of persisting apical periodontitis. The tooth should continue to be assessed.' Compounding the sin of omission, the author listed in the next paragraph the unrecognised criteria defining 'failure', which is not part of the ESE guidelines<sup>1</sup> and not one of the three outcome categories ('favourable', 'uncertain' and 'unfavourable').

The inaccurate claim that 'radiographs of single rooted teeth can be easier to interpret and understand than those of maxillary permanent molar teeth' discounted mandibular molars. The one reference<sup>5</sup> cited on the microbiota of the root canal system overlooks the more recent, and abundance of, studies using newer, culture-independent techniques.

To trot out Dubrow<sup>6</sup> as a reference in order to claim that canal obturation is not required is to live in the past as the paper made reference to silver points, an obsolete root filling material already consigned to history. In addition, to further justify this contention Klevant and Eggink<sup>7</sup> was inappropriately used as in their paper healing was improved in the 'root filled' cohort over the 'dressed' controls.

The statement that the use of NiTi 'leads to improved success rates in endodontics' is unreferenced and presented as fact when, at present, there is a lack of a convincing body of evidence to uphold this claim. The author continuing to live in the past is further exemplified by the claim that 'obturation prevents entry of microorganisms into the root canal system from the oral cavity or via the blood system'. The idea of blood (anachoresis) as a source of infection has been outdated for years.

To claim that 'similar failure rates for teeth with radiographically optimal and suboptimal root fillings suggest RCT is not as technically sensitive as once thought' shows blatant ignorance. Does it mean that the author is happy to receive a suboptimal root filling? Is the author saying that dental schools no longer need to teach and expect, and clinicians do not need to achieve, high technical quality root fillings? Is the author not aware of, for example, the work of Sjogren *et al.*,<sup>8</sup> Ng *et al.*,<sup>9</sup> as well as the systematic review by Ng *et al.*?<sup>10</sup> They all highlighted technical factors, as measured by radiographic quality of root fillings, as a principal prognostic factor in healing. A strong association between