

Letters to the editor

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Antimicrobial resistance

Audit tool limitations

Sir, I read with interest a recent letter in the *BDJ* entitled 'Antimicrobial prescribing: the work continues ...?' (*BDJ* 2018; **225**: 3–4, published 13 July 2018).

I fully concur with the authors in terms of the potential benefits of audit as a tool to promote educational and behavioural change and in this case with regard to antimicrobial prescribing.^{1,2}

I also agree that undertaking these audits in a foundation training environment could provide benefits to all who are involved, including the foundation dentists, foundation trainers and any other clinicians who participate in such a practice wide audit. In addition, naturally, patients can benefit through receiving an antimicrobial only when it is appropriate.

Reducing the inappropriate prescription of antibiotics in dental practice will also very likely help to combat the development of antimicrobial resistance in microorganisms within the community.

At the present time, I am carrying out an analysis of a large scale antimicrobial audit undertaken in the East of England which has required practitioners to use the online dental audit tool described within the above letter, which is noted as being accessible from the British Dental Association, FGDP (UK) and Public Health England websites.³

However, during the initial analysis it has become apparent that there are several significant flaws within the audit tool which lead to incorrect results being displayed on the report form provided by the tool.

In particular the report section of the tool incorrectly displays the auditor's results in a pie chart format under the proportions of appropriate, inappropriate and potentially appropriate prescribing. I would therefore at

the present time advise caution in the use of the tool and in particular in the interpretation of the results section until it is clear that these errors within the tool have been fully rectified.

P. Cannell, by email

1. Cannell P J. A PCT-wide collaborative clinical audit selecting recall intervals for patients according to risk. *Br Dent J* 2011; **210**: E8.
2. Chate R A C, White S, Hale L R O, Howat A P, Bottomley J, Barnett-Lamb J, Lindsay J, Davies T I and Heath J M. The impact of clinical audit on antibiotic prescribing in general dental practice. *Br Dent J* 2006; **201**: 635–641.
3. GOV.UK Dental antimicrobial Stewardship Toolkit. Available at <https://www.gov.uk/guidance/dental-antimicrobial-stewardship-toolkit> (accessed 24 July 2018).

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Bleaching

Tooth bleaching traumatised teeth

Sir, I read your interesting paper entitled 'Tooth whitening for the under-18-year-old patient' (*BDJ* 2018; **225**: 19–26) in which you 'aim to provide readers with an understanding regarding bleaching protocols...' but find the section on management of discoloured traumatised teeth confusing and misleading.

You state that 'external' non-vital bleaching is best carried out by inside/outside closed bleaching but then comment that 'inside/open' approach is unnecessary due to rapid penetration of bleaching material through the tooth from the external surface.

For effective bleaching of discoloured non-vital root filled teeth the removal of cements, gutta percha and necrotic pulp remnants that contribute to internalised stain can only be addressed by open access when such an iatrogenic aetiology is diagnosed.

You mention 'associated risks' without consideration of external cervical resorption (ECR) which is a serious risk in non-vital traumatised teeth. The combination of bleaching and history of trauma is the most important predisposing factor for ECR.¹

As part of a safe and effective bleaching protocol the literature indicates that it is essential to place a sound intermediate base over the root filling, reduced by 1–2 mm below the cemento-enamel junction to prevent the ingress of bleaching agent and minimise the risk of ECR.^{1–3}

Also without effective tooth bleaching protocols, shade regression is more likely and patients' expectations may be unmet.

R.S. Burrows, by email

1. Heithersay G S. Invasive cervical resorption. *Endod Topics* 2004; **7**: 73–92.
2. MacIsaac A M and Hoen C M. Intracoronar bleaching: concerns and considerations *J Can Dent Assoc* 1994 Jan; **60**(1): 57–64.
3. Plotino G, Buono L, Grande N M, H, Pameijer C H and Somma F. Non-vital tooth bleaching: a review of the literature and clinical procedures. *J Endod*. 2008 Apr; **34**(4): 394–407.

The authors of the article, J. Greenwall-Cohen, L. Greenwall, V. Haywood, and K. Harley, respond:

Sir, thank you for your interest in our article. Our intent was certainly not to be confusing or misleading, so we appreciate the chance to expand on the comments concerning endodontically-treated teeth being bleached.

We agree with your comment and recommendation for access to the internal aspect of the pulp chamber and the need for a barrier after removal of 2–3 mm of gutta percha but did not include those details in this article but in the reference articles.^{4,5}

The reason we say the inside outside open (IOO) technique may be unnecessary is that it carries no benefit over the inside outside closed (IOC) technique. The IOC ensures that the access cavity can be closed, minimising the risks associated with leaving the access cavity open, whilst the rapid diffusion of the bleaching agent from the external surface of the tooth still ensures rapid bleaching.

With regards to external cervical resorption (ECR), the literature on ECR was when high

concentrations (30% or greater) of hydrogen peroxide⁶ (HP) or sodium perborate⁷ were used and when heat was applied. We are advocating the use of 10% carbamide peroxide (which is the equivalent of 3.4% HP) and no heat and as such, the risk should be considerably less.

We also agree that there are other predisposing factors associated with the ECR and bleaching, such as the history of trauma⁸ that was highlighted.

A study by Heithersay⁹ demonstrated that orthodontic treatment was the most important

predisposing factor for ECR and bleaching. It is important to note that in these cases it is very difficult to determine if the root resorption was because of the bleach or the orthodontics/trauma. ECR has been covered in detail elsewhere in this journal.^{10,11}

4. Haywood V B, DiAngelis A J. Bleaching the single dark tooth. *Inside Dentistry* 2010; **6**: 42–52.
5. Sulieman M. An overview of bleaching techniques: 2. Night Guard Vital Bleaching and non-vital bleaching. *Dent Update* 2005; **32**: 39–46.
6. Latcham N L. Management of a patient with severe post-bleaching cervical resorption. A clinical report. *J Prosthet Dent* 1991; **65**: 603–605.

7. Goon E Y, Cohen S, Borer R F. External cervical tooth resorption following bleaching. *J Endod* 1986; **12**: 414–418.
8. Harrington G W, Natkin E. (1979) External resorption associated with bleaching of pulpless teeth. *J Endod* 1979; **5**: 344–348.
9. Heithersay G S. Invasive cervical resorption: an analysis of potential predisposing factors. *Quintessence Int* 1999; **30**: :83–95.
10. Darcey J, Qualtrough A. Resorption: part 1. Pathology, classification and aetiology. *Br Dent J* 2013; **214**: 439–451.
11. Tredwin C J, Naik S, Lewis N J, Scully C B. Hydrogen peroxide tooth-whitening (bleaching) products: review of adverse effects and safety issues. *Br Dent J* 2006; **200**: 371–376.

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CASE REPORT LETTERS

Cone beam CT scan

Importance of CBCT in treatment plan

Sir, a patient was referred to the oral and maxillofacial surgery clinic at the HCF Dental Centre, Sydney by a GDP for assessment and removal of tooth 37 due to it having radiolucency.

The patient was medically fit and well. He had attended for a routine restorative procedure where the dentist found tooth 37 to have recurrent decay. On routine radiographic examination, radiolucency was noticed in the orthopantomogram involving 37 and the mesioangular impacted 38.

The GDP made his diagnosis based on a decayed tooth with a radiolucency around the roots as dental cyst associated with 37. He discussed the option of root therapy involving 37, which the patient declined and preferred extraction. The GDP did not do a vitality test for 37, which might have helped him review the conclusion. Based on the clinical and radiographic finding, the patient was referred to the oral and

maxillofacial clinic for removal of 37 and the associated cystic lesion (Fig. 1).

On clinical examination, 37 was decayed, partly filled, asymptomatic, with no buccolingual expansion. A cone beam CT scan was done then and there as it was available, which revealed a well demarcated radiolucency involving the impacted 38 consistent with a diagnosis of dentigerous cyst, tooth 37 was completely sound and the radiolucency was extending buccal to the roots of 37 (Figs 2 and 3).

This case elaborates the importance of cone beam CT as an important tool in achieving a proper diagnosis and treatment plan. Nowadays the CBCT technology is available in

most of the chairside clinics and in a clinical situation like this it can be clearly seen how it can be used to make a proper diagnosis and execute appropriate treatment planning.

P. Dhanrajani, T. Rynberg, and C. Ho, by email

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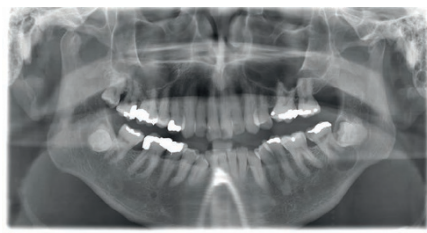


Fig. 1 Orthopantomograph showing decayed 37 with large radiolucency around roots and impacted 38

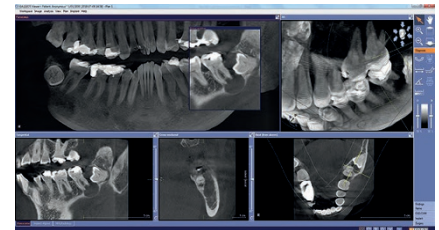


Fig. 2 CBCT showing distinct radiolucency around impacted 38 with buccal extension around 37

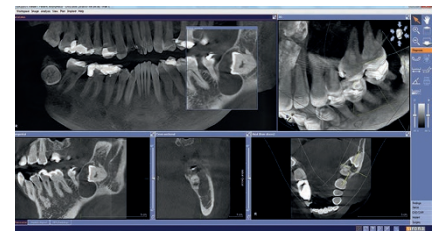


Fig. 3 CBCT showing distinct radiolucency around impacted 38 with buccal extension around 37