

FEATURES SECTION

Letter to the Editor

Dear Editor

The third edition of *Orthodontic Radiographs* by K.G. Isaacson, A.R. Thom, K. Horner and E. Whaites¹ is the British Orthodontic Society's published guidelines booklet, which was circulated recently among members of the Society. In this edition, there is a new section on cone beam computerized tomography, in which an article of ours² has been quoted out of context and admonished for allegedly advocating '... using this technique [cone beam computerized tomography] as part of *routine orthodontic management*' [our emphasis] and '... even suggesting use in *all patients*' [our emphasis].

The guidelines have dealt most inadequately with the value of radiographs in the diagnosis and treatment of unerupted teeth, mentioning only the parallax technique³ as the means to assess their position – a technique which will celebrate the centenary of its publication in two years time. The relative 'blindness' of this technique in determining such conditions as root resorption of the lateral incisor⁴ is not mentioned, despite the fact that it has been shown to occur in 66.7% of a sample of impacted maxillary canine cases⁵ and, this, in a paper that the authors have recommended in the back page list of articles for further reading.

Our article clearly states, in relation to CT, '... its routine use is unjustified in common orthodontic cases'. The article goes on to describe five cases in which intra-oral and extra-oral plane films and panoramic tomographs could not adequately diagnose the three-dimensional position and orientation of the impacted tooth vis-à-vis its neighbours, the full extent of incisor root resorption on the palatal aspect of its root, the twisted form and root length of two dilacerate central incisors, the form of two supernumerary teeth and how to distinguish them from the normal teeth.² The views made available using the CBCT modality in these cases provided us with information that is impossible to obtain from plane film radiography and permitted us to treat these cases to their successful conclusion. None of these difficult, but not unusual, situations for the orthodontist merited mention in the guidelines.

Our article concluded with the statement that the application of CBCT "... in the *special circumstances related to impacted teeth* [our emphasis] contributes significantly to the provision of accurate information

for diagnosis and treatment'. Further, that CBCT '... should be considered a routine diagnostic aid in cases where the treatment of *impacted teeth* is being considered' [our emphasis]. It is pertinent to add that much of the text of that article is devoted to a discussion on the radiologic risk and minimum risk/benefit of the method.

There is the world of difference between recommending CBCT for these special circumstances and recommending its routine use for all orthodontic cases. Yet the reference to our article has falsely accused us of just that! The fault lies with the authors of the guidelines, who have not read and understood the text of an article that they have referenced. Our being pilloried for this distortion is patently unjust.

Stella Chaushu, Gabriel Chaushu, Adrian Becker

References

1. Isaacson KG, Thom AR, Horner K, Whaites E. *Orthodontics radiographs: guidelines*. London, British Orthodontic Society, 3rd edition 2008.
2. Chaushu S, Chaushu G, Becker A. The role of digital volume radiography in the imaging of impacted teeth. *World J. Orthod.* 2004; **5**: 120–132.
3. Clark CA. A method of ascertaining the relative position of unerupted teeth by means of film radiographs. *Proc. Roy. Soc. Med (Sec. Odont)* 1910; **3**: 87–90.
4. Becker A. *The orthodontic treatment of impacted teeth*. London, Informa Healthcare, 2nd edition 2007.
5. Walker L, Enciso R, Mah J. Three dimensional localization of maxillary canines with cone beam computed tomography. *Am. J. Orthod. Dentofacial Orthop.* 2005; **125**: 418–423.

Dear Editor

We thank Dr Chaushu and colleagues for drawing our attention to errors in the citation of their paper and our interpretation of it.

First, we agree that your article did not state that CBCT should be used for all orthodontic patients. Instead, you said that 'There is reason to recommend the routine adoption of digital volume tomography imaging for positional diagnosis in most cases of impaction of teeth that are candidates for orthodontic

resolution', a statement that did not justify our summary in the Guidelines. We apologize for this wholeheartedly.

However, as impaction of teeth is a frequent cause of orthodontic assessment and intervention, we do maintain that, in the absence of validated studies of diagnostic accuracy, there is currently no scientific basis for recommending its 'routine adoption' in any situation. The aim of your paper was to illustrate CBCT 'as an alternative to routine computerized tomography in the diagnosis and treatment planning of impacted teeth'. In the UK, it is highly unlikely that anyone ever uses computerized tomography for assessing impacted teeth. Imaging using X-rays should never be routine, but determined on an individual patient basis. CBCT may well prove to offer a useful means of assessing the three-dimensional position of impacted teeth and the possibility of damage to adjacent teeth, although it may not be the

'gold standard' for resorption because of resolution limitations. It seems unreasonable that it should be used in most cases of impaction of teeth without clear evidence that it changes clinical management compared with conventional radiographic techniques.

Secondly, at present there are only a limited number of CBCT units in the UK and many of these are neither logistically or financially accessible by the majority of orthodontic practitioners. Therefore, a well established parallax technique, which can be used by every dental practitioner, remains highly relevant, has a small associated financial cost and a relatively low radiation dose. The cost effectiveness of CBCT, to our knowledge, has not yet been assessed for any clinical application.

We will ensure that a corrigendum regarding the citation of their paper is added to all future copies of the guidelines.

K. G. Isaacson, A. R. Thom, K. Horner and E. Whaites

Erratum

Corrigendum

Routine use of CBCT even for most cases of impaction of teeth that are candidates for an orthodontic

resolution, as suggested by Chaushu *et al.*, cannot yet be recommended in the absence of adequate scientific evidence for diagnostic utility and cost effectiveness.