tems was weak and concluded that panoramic radiographs are not an accurate or reliable method for detecting carotid artery calcifications.

I am not surprised that there were numerous atheromas noted on DS that were not seen on the radiograph. This occurs in many patients because the imaging field of the panoramic radiograph frequently does not extend inferiorly enough to capture the individual's carotid artery bifurcation, and because the atheroma may not contain enough calcium for it to be evidenced on the radiograph.

Our group of researchers has published a study (identified by the authors but with inadequate detail) which more closely conforms to the real world practice of clinical dentistry and which determined the level of agreement between radiographs and DS.[2] Specifically, we analysed the panoramic radiographs of 1,548 consecutively treated, neurologically asymptomatic dental patients who were 50 years or older. The radiographs of 65 patients (4.2%) showed at least one internal carotid artery (ICA) atheroma. Thirty-eight patients had bilateral lesions and 27 had unilateral lesions. DS evaluation of the 103 sides of the neck with a radiographically identified atheroma revealed that none of the ICAs were normal, 81 (79%) had less than 50% stenosis, 18 (17%) had 50 to 69% stenosis and four (4%) had 70% or greater stenosis. Four of the ICAs on the 27 sides without calcifications were deemed normal and 23 had less than 50% stenosis. These results substantiate the value of panoramic radiography, when used responsibly, to identify patients (15 [23%] of 65) with occult atheromas confirmed by DS as being haemodynamically significant (>50% levels of ICA stenosis) and categorising them at high risk of future stroke.

Dental and medical scientists when testing a hypothesis for validity should frame it such that it has clinical relevance. My research group which in 1981 was the first to observe atheromas on panoramic radiographs[3] has steadfastly and adamantly stated in our 30+ publications that panoramic radiography is an inappropriate imaging system to screen patients for atheromas but should instead only be used to obtain images for dental need. Once obtained however these radiographs should then be comprehensively reviewed for evidence of atheromas. If and when an atheroma is noted on a radiograph, the patient should be referred to a physician for cardiovascular evaluation and possible confirmation of the atheroma by DS.

Lastly, the authors incorrectly stated that Ravon *et al*. in 2003[4] were the first to confirm by DS that the carotid-like calcifications seen on panoramic radiographs were in fact within the vessel. As far back as 1994, Friedlander and Baker documented this very fact and published their results in the *Journal of the American Dental Association*.[5]

A. H. Friedlander
Los Angeles

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A POTHOLED ROAD

Sir, Professor Richards is to be congratulated on his editorial *In search of quality* (*BDJ* 2009; **207:** 109). He distils from a complex mixture of ingredients the fact that the basic professional product we provide is oral health and this should be used as a quality benchmark linked to an internationally recognised ISO standard. Nobody would disagree with this but a potholed road will impede the speed of our quality journey in the absence of a fairly major revolution in the organisation of our profession and the administrative structures of BSI/ISO.

It is well known that cheap dentistry is probably the most expensive product that money can buy and it is a betrayal of the best interests of our patients to continue to ignore this fact.

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But in the one area of product standards that something could be done, and done quickly, our regulatory body the GDC seems to have acquired a scotoma. Now I am not talking here about toothbrushes and tubes of toothpaste but about the products manufactured in dental laboratories and prescribed by dental surgeons on a daily basis. Where is the product standard that ensures every denture, crown, bridge or other fixed or moveable dental prosthesis is fit for purpose? Indeed where is the basic definition of 'clinical fit' recorded to validate the claims that 'all my caps fit and patients wear them'!

But now of course we have access to technology that measures in microns and displays on computer screens graphic pictures of the truly awful quality of far two many impressions of equally awful clinical preparations. And so at the very outset the chances of a dental technologist being able to craft a properly fitting prosthesis are often reduced to zero.

A major trade supplier has recently claimed in sales literature supporting the use of their intra-oral scanner that nearly 60% of dental impressions are unsatisfactory .

I myself have carried out a random survey of more than 6,000 dental impressions and of the 100 cases that I subjected to audit can confirm this supplier's figure is very close to mine at 52%. This is a shocking indictment.

At the time of writing, my letter and a reminder to the President of the GDC requesting the introduction of quality based product standards remain unanswered and the 6,000 word paper I wrote in response to the GDC's invitation to comment on their 'Standards on Commissioning and Manufacturing Dental Appliances' has been ignored. Sadly Professor Richards I feel that whilst the patient may be hungry for better quality our professional representatives seem unwilling to create the recipe.

N. J. Knott
Chippenham

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TRULY AMAZING

Sir, another issue of the *BDJ* and another letter/opinion paper by Mr Mew (*Accepting responsibility*; *BDJ* 2009; **207:** 194). There are so many complaints that he voices in this latest one that it would be impractical to address them all but let me address one. He is sure that surgery can be avoided by his 'natural growth guidance' but we should not forget that orthognathic surgery is almost exclusively carried out in adults after the majority of growth has ceased so, if he could demonstrate that growth can be promoted in an adult patient, this would be truly amazing. I suspect though that he cannot.

From hearing Mr Mew present cases in the past I am fairly certain that he is in fact utilising normal growth at around the growth spurt as is the case in countless orthodontic practices around the country and world whenever a functional appliance is fitted. I await the deliberations of the GDC with interest.

A. Pearson
Oxford

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A LITTLE HASTY

Sir, Roberts and Lucas offer a spirited defence of dental age assessment (*BDJ* 2009; **207:** 251-253), but their assurance that informed consent is always obtained for this procedure is perhaps a little hasty. They state that 'all the subjects seen by our DAA team give informed consent'. This may be true inasmuch as they have been given enough information and know what they are agreeing to, but sufficient information is only one of the three necessary criteria for valid consent: the other two are competence and voluntariness.

Even if we grant that competence is not an issue here (although it could be, given that children are involved), the fact remains that asylum seekers may be faced with torture or death if they are deported. Given these alternatives, it could be argued that they are being coerced into consenting to something that they are told will help their application for asylum. In this sense, it is quite possible that the voluntariness criterion for consent is not being met by dental age assessment in some cases, despite the obvious importance of the procedure.

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LYME DISEASE WARNING

Sir, I would like to raise the awareness and knowledge of the profession as to the effects of Lyme disease/Borreliosis and associated infections, both at a personal level and also to patients. I have gleaned much personally after suffering, undiagnosed, for the previous 11 years.

Lyme disease is a spirochete infection (Borrelia), classically after a tick bite. In many ways progress of the infection may be compared to three phases of syphilis. Initially, an erythema migrans around the bite, then general flu-like symptoms in the following weeks and finally the third stage: fatigue, sweats, chills, muscle-skeletal pain and weakness, neuropathies and a bucketful of other multisystemic problems including palsies and dental pains as well as some psychological issues. If the infection is diagnosed early and treated, then that may be the end of it, however, some 5-20% of individuals go on to develop the tertiary phase.

From personal experience it is like trying to work as though your latex gloves were now heavy duty marigolds; unable to hold an air-rotor for more than a five minute stretch, and with difficulty even keeping your foot depressed on a floor pedal. Power naps at every down time during the day; an inability to sit on an operating chair for any period without back or neck pain becoming a distraction. The list could go on. Then the irritability, paranoia and depressions kick in. Dentistry becomes impossible and then you get a diagnosis of depression, signed off work and eventually retire.

In general, Bell's palsy is widely reported, but I have been unable to find figures for the occurrence with this condition. Dropping eyelids, unilateral or bilateral can also be features as can sinusitis and middle ear infections. Orally, there can be dry mouth and thirst and widespread tooth sensitivity even if there seems to be perfect gingival health, intense and at times total pulpitis of all teeth, as though hit by two upper cuts.

Although much is non-specific, and far from comprehensive, it should be acknowledged and I hope this might be of help to readers.

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