COMMENT

Letters to the editor

Send your letters to the Editor, *British Dental Journal,* 64 Wimpole Street, London, W1G 8YS. Email bdj@bda.org.
Priority will be given to letters less than 500 words long. Authors must sign the letter, which may be edited for reasons of space.
Readers may now comment on letters via the *BDJ* website (www.bdj.co.uk). A 'Readers' Comments' section appears at the end of the full text of each letter online.

Dental implants

Potential relationship with cancer

Sir, I read with interest the article by Salgado-Peralvo *et al.* (*BDJ* 221; **10:** 645–649) regarding the potential relationship between dental implants and squamous cell carcinoma.

I imagine if such a relationship exists it is less likely to be causal, but rather coincidental, but I take the point with regard to chronic inflammation having a potential for malign transformation, and to that point Albrektsson *et al.*[1] recently proposed that implants may indeed act as a foreign body, even though they appear to be accepted by the bone as a bioinert material through the process of osseointegration.

In a recent article published by me and my colleagues, oral carcinoma was proposed as a possible extrinsic pathology that might be mistaken for peri-implantitis.[2] This was predicated on the relatively recent presentation of a long-standing patient who had had numerous implants at my practice over many years but had retired to Spain, where she was later diagnosed with peri-implantitis with acute abscess formation. After many weeks of antibiotics and no resolution the patient contacted me to see if she could fly back to see me. Clinical presentation was one of a firm but fragmented swelling mesio-buccal to an implant in the 36 region, with bleeding on probing at 36 and a radiographic appearance of crestal bone loss at 37 compared to baseline and consistent with a diagnosis of peri-implantitis. Given the unusual texture and visual character of the swelling suspicions were raised and a biopsy taken immediately, which subsequently revealed squamous cell carcinoma invading the mandible around both implants at 35, 36 (Figs 1–4).

The patient went on to have both implants removed and multiple extractions in the lower left quadrant with a partial mandibulectomy and block neck dissection, followed by radiotherapy. Unfortunately, within five years the patient had succumbed to, and died from multiple metastatic disease.

The current article by Salgado-Peralvo *et al.* is a timely reminder that while rare things rarely happen – they do happen! Clinicians should always remain alert to this possibility.

M. R. Norton, University of Pennsylvania

1. Albrektsson T, Dahlin C, Jemt T, Sennerby L, Turri A, Wennerberg A. Is marginal bone loss around oral implants a provoked foreign body reaction. *Clin Implant Dent Relat Res* 2014; **16:** 155–165.
2. Sarmiento H, Norton M, Fiorellini J. Development of a classification system for peri-implant diseases and conditions. *Int J Periodontics Restorative Dent* 2016; **36:** 699–705.

DOI: 10.1038/sj.bdj.2017.144

Fig. 1 Appearance of solid tumour, misdiagnosed as a chronic abscess

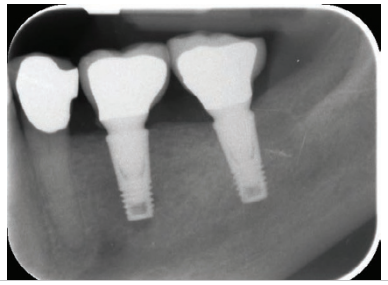

Fig. 2 Baseline radiograph showing good marginal bone levels

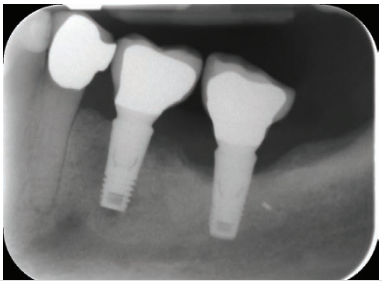

Fig. 3 Follow-up radiograph demonstrating marginal bone loss

Fig. 4 Infra-bony defects consistent in appearance with peri-implantitis

Healthcare research

VR and AR

Sir, we are living in an era where virtual reality (VR) and augmented reality (AR) are increasingly being incorporated in our daily lives, in education and medical treatments.[1] It seems very appropriate to take advantage of this great opportunity in healthcare research by employing a blended virtual reality approach.

As an example, Oculus Rift, a VR goggle recently launched by a UK-based company, has several potential uses in education and training, by artificially recreating our real life by giving a 4-dimensional experience to the user. AR takes this experience even further by overlaying a virtual environment onto an existing reality. Pokeman Go, a location-based AR game, overtook long established social networking apps such as Twitter and Facebook after only a few weeks.[2]

These fascinating technologies are increasingly being used in gaming and more recently in education, including medical education.[3] VR and AR can also be used in healthcare research, for training participants

and researchers, or even conducting studies. For example, a researcher can sit in their office and interview a participant at their home, using augmented reality (eg hologram) with a 4D experience. Another example is when assessing healthcare services, different scenarios could be created virtually and participants can be immersed in this virtual environment using VR goggles. The potential advantages include reducing the costs of running a study; ensuring the consistency of interventions for different participants; and minimising the risks that may be associated with different interventions in real world. Potential disadvantages may include: the cost of setting up the virtual environment and resources; the need for training of participants and researchers; and generalisability of the results to the real world.

It seems that a blended approach that combines reality and virtual environments can be employed in different aspects of healthcare research. Besides its challenges, it could also enable us to implement studies which may have not been ethically possible in the real world.

M. Dorri, by email

1. Milgram, P, Takemura, H, Utsumi, A, Kishino, F. Augmented reality: a class of displays on the reality-virtuality continuum. *Telemanipulator and Telepresence Technologies* 1994; **2351:** 282–292.
2. Fox6News. Pokemon Go breaks Apple download records, overloads servers. 23 July 2016. Available at: http://fox6now.com/2016/07/23/pokemon-go-breaks-apple-download-records-overloads-servers/ (accessed 5 December 2016).
3. Levono Health. Practical applications for virtual reality in healthcare. Available at: http://lenovohealth.com/practical-applications-virtual-reality-healthcare/ (accessed 5 December 2016).

DOI: 10.1038/sj.bdj.2017.145

Patient safety

Cardiac devices

Sir, following a review of the literature and previous correspondence of Balfrey,[1] Firth[2] and Alexander,[3] it seems clear that there is still confusion within the general dental community of the management of patients with implantable cardiac devices/pacemakers. A 2012 narrative review[4] attempted to provide guidance on the matter. The article references that some common ultrasonic scalers and ultrasonic baths do produce electromagnetic interference and may pose a risk to patients. This is supported by the British National Formulary (BNF)[5] recommending that 'some ultrasonic scalers, electronic apex locators, electro-analgesic devices, and electrocautery devices interfere with the normal function of pacemakers (including shielded pacemakers) and should not be used.' However in opposition, a review conducted by Trenter and Walmsley[6] states that piezoelectric ultrasonic scalers are safe for use in patients with pacemakers.

Due to conflicting evidence on this topic it is the view of the authors that a review of the literature with cardiology specialist input is much needed in order to provide some clarity on the safe management of such patients.

D. Raindi, Sutton Coldfield
J. S. Chandan, Birmingham

1. Balfry G. Pacemakers and ultrasonic scalers. *Br Dent J* 2005; **199,** 625–625.
2. Firth R. Practising with pacemakers. *Br Dent J* 2006; **200:** 124.
3. Alexander M. Scalers: review advice. *Br Dent J* 2006; **200:** 183.
4. Conteh D D. Patients with pacemakers. *Vital* 2012; **9:** 22–23.
5. Joint Formulary Committee. Pacemakers : British National Formulary. British National Formulary (online) London: BMJ Group and Pharmaceutical Press. Available at: https://www.evidence.nhs.uk/formulary/bnf/current/guidance-on-prescribing/prescribing-in-dental-practice/medical-problems-in-dental-practice/pacemakers (accessed 1 December 2016).
6. Trenter S C, Walmsley A D. Ultrasonic dental scaler: associated hazards. *J Clin Periodontol* 2003; **30:** 95–101.

DOI: 10.1038/sj.bdj.2017.146

Anticoagulants

Lack of research

Sir, I work in the oral surgery department of a London Hospital and regularly treat patients with significant co-morbidities many of which take an anticoagulant medication, primarily warfarin. Within the last year I have come across an increasing number of patients taking the newer range of novel oral anti-coagulants (NOACs), which do not require routine blood test monitoring.[1] I am, however, concerned at the lack of research (no clinical trials) and experience using these medicines along with dental extractions.

A recent case of a 78-year old-lady who had started taking dabigatran for atrial fibrillation approximately three months earlier, having previously taken warfarin for a number of years, highlighted this for me. She suffered considerable post-operative bleeding and bruising over a two-week period following extraction of the upper left wisdom tooth, which was completed under local anaesthetic via an atraumatic forceps technique with Surgicel and 3-0 Vicryl absorbable sutures placed as precautionary local haemostatic measures.

Despite being introduced in 2008 the NOACs are only just starting to be used more frequently for conditions such as atrial fibrillation and prevention of stroke as an alternative to aspirin. Recommendation from the Scottish Dental Clinical Effectiveness Programme states that if patients are undergoing a low bleeding risk procedure no interruption in their medication should occur; an atraumatic extraction is considered to be low risk. For higher risk procedures, the medication should be missed on the day of their procedure; however, the evidence supporting these suggestions is of low quality.[2]

The case above was very distressing for the patient and her family; as a result I have concerns as to how dental procedures can be safely carried out on this new population. The decision to stop a medication can be of concern to both the dentist and patient if not fully considered with their physician.

F. McDonnell, by email

1. National Institute for Health and Care Excellence. Novel oral anticoagulants an option for patients with atrial fibrillation. June 2014.
2. Scottish Dental Clinical Effectiveness Programme. Management of dental patients taking anticoagulants or antiplatelet drugs. August 2015.

DOI: 10.1038/sj.bdj.2017.147

Advertising

Longstanding dislike

Sir, as an admirer of Damien Walmsley, I have found that my longstanding dislike of the *BDJ*'s practice of sticking advertising material to the front cover has been heightened since his series of images started to appear (Volume 221, 2016). Tell me please, what is the point of giving any thought to the design of the cover when it is covered every time?

R. Bettles, by email

DOI: 10.1038/sj.bdj.2017.148

Antimicrobial resistance

Setting the record straight

Sir, we are delighted one reader thought the new antimicrobial prescribing toolkit was 'excellent' (*The toolkit blah*, *BDJ* 2017; **222:** 141). However, there did seem to be a few misconceptions, and I wanted to set the record straight.

Working in the NHS and facing the same decisions week in, week out I well understand the writer's frustrations. We do not set out to place any new obligations on this profession. Nor do we seek to fudge any of the issues around the UDA, and the constraints it has placed on our members' time.