informed decision-making that prioritises patient care and NHS interests.

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Dental careers

Highly recommended programme

Sir, we were pleased to read the letter regarding the DCT 2 equivalency published in your journal.[1] We would like to share our experience as new dental graduates. We are part of the Joint Dental Foundation Core Training programme (JDFCT) initiated by Health Education England which combines the primary (DFT) and secondary care placements (DCT Year 1), starting immediately after graduation.[2]

As final year students, we aspired to achieve experience in both primary and secondary care in our careers. We were fortunate to select this two-year programme which involves alternate week placements in hospital and dental practice. Although this was initially a steep learning curve, the past few months have vastly and rapidly increased our scope of knowledge and practical skills. We have been provided with ample opportunities to proceed with dental procedures under supervision, including biopsies, surgical extractions and assisting in more complex head and neck surgeries such as free flap cases. Additionally, we've been fortunate to actively contribute to and engage in daily ward rounds, allowing us to assess patients both before and after surgical procedures. Furthermore, we have been able to assist with consultant-led clinics, giving us an appreciation of how referrals are handled in secondary care; this has provided us with a better understanding of the different stages of hospital-based patient management. The primary setting involves working in a dental practice as a GDP, performing most procedures such as RCTs, crowns, restorations, periodontal treatment and more.

In spite of the interruption in the continuity of our experience due to alternation of general and hospital practice, we still have the same targets as general yearly cohorts over our two years of training. These include supervised learning events (direct observation of procedural skills, case-based discussions and more), reflections and a logbook of our clinical experience, which makes the training optimal and adequate.

Despite the challenges, we highly recommend this to anyone looking to do a joint training programme as we believe this comprehensive approach ensures skill development takes precedence without any compromise on our existing clinical abilities within general dentistry.

Y. Mohajer, Luton and Hitchin; S. Patel, Luton and Hitchin; R. Sangam, Hitchin; V. Sharma, Luton, UK

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Dental implants

CGF-induced implant osteogenesis

Sir, I read the article by Kandhari *et al.*[1] with interest: bone quality, volume, height and width all play a pivotal role in dental implant stability, success and survival. Most young dentists are unable to determine whether the implant area has sufficient bone mass during the implantation process. Meanwhile, selecting the right type of bone grafting material is also extremely challenging. A lack of adequate bone can be overcome with various bone grafting procedures. Long-term and stable implants depend on many factors including the amount of bone required, the site of implant placement, patient preferences and clinician factors. The authors provided an overview of bone grafting indications, materials and types of bone grafting techniques, while discussing the properties needed to ensure optimal success of guided bone regeneration techniques.

Recently, one clinical study evaluated the combined use of concentrated growth factors (CGFs) and adipose-derived stem cells (ADSCs) as cytokines and seed cells for bone regeneration in patients with immediate dental implants. Shubham *et al.*[2] showed that although there was no significant difference in results between groups at all time points, the application of concentrated platelets unexpectedly improved the stability of implants after surgery. When comparing the quantity and quality of bone regeneration for data statistics and measurements, the difference between the three groups was not statistically significant. Another clinical study by Andrea *et al.*[3] found that data obtained from surgical interventions with CGF-permeated dental implants presented better results in terms of optimal osseointegration and reduced post-surgical complications. These data, taken together, highlight new and interesting perspectives in the use of CGF in the dental implantology field to improve osseointegration and promote the healing process.

CGF, as a healing biomaterial, has been routinely applied in dental implant surgery to accelerate healing and reduce post-operative discomfort, which has a positive impact on the success of dental implantation. In order to increase the long-term stability of implants, we need to explore more effective methods, and the use of growth factors is one of them.

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Paediatric dentistry

Sodium hypochlorite and paediatric patients

Sir, sodium hypochlorite (NaClO) is an effective intracanal irrigant used widely in restorative and paediatric dentistry which although generally considered safe, has cytotoxic effects that can result in soft tissue necrosis if extruded beyond the root canal system.[1] Whilst the consequence of extrusion is well recognised, there is limited literature

surrounding hypochlorite accidents in teeth with open apices, particularly regarding the effect of concentration on the incidence of injury.

The majority of hypochlorite accidents can be attributed to incorrect working length, the presence of perforations and excessive force during irrigation.[2] Although immature root development has been associated with an increased risk of extrusion, endodontic treatment can be carried out safely with careful pre-operative assessment, determination of working length and appropriate use of side-vented irrigation needles.[3,4] Taking these measures prior to commencing treatment is therefore essential and clinicians should be competent in the appropriate management of hypochlorite injury.

Anecdotally, clinicians typically err on the side of caution for paediatric patients by using low concentrations of hypochlorite, with the aim to reduce the risk of injury through extrusion or perforation. However, the evidence base to support this is limited and there is lack of a protocol for endodontic treatment in teeth with immature apices. Whilst high strengths may increase tissue irritation, concentrations of 5.25% have been shown to demonstrate greater antibacterial activity in comparison to 2.5%, and when diluted, result in a significantly impaired ability to dissolve necrotic tissue.[5] Furthermore, the effectiveness time of hypochlorite is significantly reduced when using 5.25% compared to 2.5%, allowing greater antimicrobial action within a more efficient timeframe.[5]

The nature of patients managed within paediatric dentistry may necessitate a limited treatment duration. The use of higher concentrations of NaClO may permit superior antimicrobial activity during the restricted timeframe that often accompanies endodontic treatment for paediatric patients. Whilst the optimal concentration is open for discussion, the specialty should consider the viability of safely using 5.25% NaClO for endodontic treatment on teeth with both complete and incomplete root development. When used alongside a protocol to reduce risk of extrusion and guidelines for the management of potential injury, could higher concentrations be adopted to improve treatment outcomes for root canal treatment in children?

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Occupational health

Noise damage in a dental clinic

Sir, I read with great interest the letter on 'Ear protection for dental practitioners' published on 9 February 2024.[1] During the pandemic and even post-pandemic, many protective measures have been added to dental offices, contributing only to more noise. We have tried to highlight this issue during the pandemic, where we made an effort to account for noise coming from different instruments commonly used in dental practice.[2] While the authors of the current letter only mention that air rotors create high noise levels, we found that many commonly used instruments create even more noise. Typical examples would be scalers that were found to be generating 85.80 dBAeq of sound, while an air-blow syringe was leading to 100.00 dBAeq of noise generation during use.

While the authors have made a great effort to highlight the dementia-associated risks due to prolonged exposure to noise in a dental setting, there are many other associated risks, such as behaviour, digestion, cardiovascular system, and even neurological problems.

As dentists, we must be aware of the initial signs and symptoms of damage caused by noise damage, such as asking patients to repeat sentences, not hearing the phone ringing, or are unable to comprehend voices when there is background noise. The ADA has laid down guidelines regarding hearing loss, including the use of noise-cancellation headphones and ear plugs to prevent hearing damage.[3]

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