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Journal of the Irish Dental Association

Iris Cumainn Déadach na hÉireann

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December 2019/January 2020

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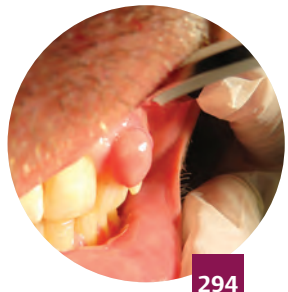
OUR COVER shows Christina Havalder of Colgate congratulating Dr Padraig O'Reachtagain on his Colgate Caring Dentist Award with Prof. Leo Stassen (centre), President of the Irish Dental Association.



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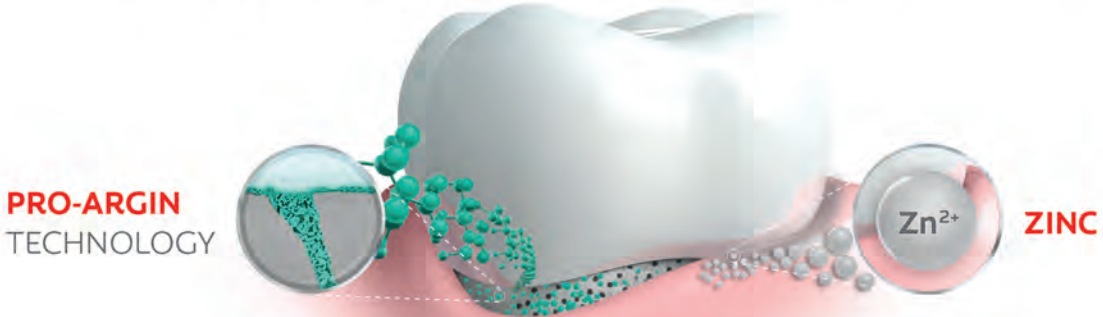

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1 Nathoo S, et al. 2009. **2** Docimo R, et al. 2009. **3** Lai HY, et al. 2015.

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Dr Ciara Scott
Honorary Editor

20/20 vision

In a new year that will bring challenges for dentistry, guarding our professional values, and our own health, is more important than ever.

I've never worn glasses, but when I broke my sunglasses recently, the optical shop that repaired them persuaded me to book an eye test. Like our mouths, our eyes are a window to our lifestyle, and our general and future health, and I was fascinated by all the diagnostic equipment and explanations. There was good and bad news. The optician told me that I still had better than 20/20 vision, but then added that this would definitely change in the next five years. For most things, of course, the future is much harder to predict, not least in the proposed changes to dental services. 20/20 vision doesn't help.

This bumper issue marks 12 months since my first issue as Honorary Editor. The new year offers an opportunity to reflect on the last year and set new goals, to celebrate the successes and learn from the mistakes. I would like to personally thank Siobhain Davis and all the Editorial Board members, Ann-Marie Hardiman and our publishers Think Media, our administrator Liz Dodd and all the team at IDA House, and all the authors, reviewers and advertisers for their contributions and commitment over the last year. We have recently updated the advice to authors to improve the editorial process and continue to welcome feedback, letters and ideas from members and the wider profession to provide, improve and update our content.

Protecting our values

In our busy professional lives our work is never done, and acknowledging and celebrating the successes is important for staff engagement and preventing burnout. The Colgate Caring Dentist Awards offer a wonderful forum for patients to share their stories, and many dentists and dental teams took the opportunity to celebrate with each other. Congratulations to all the nominees and winners, and to our worthy overall winner, Dr Padraig O'Reachtagain. Throughout his career, Padraig has advocated for what he believes matters and his heartfelt acceptance speech voiced his compassion and the strong professional values that have motivated him and represent what matters to so many of us.

Padraig's story highlights how giving patients that space when we meet them to understand their story, and their broader health and social needs, can be life changing. This integration of health and social care is the basis of the patient-centred Sláintecare policy and I was delighted that Dr Áine Carroll accepted our invitation to tell us more about integrated care in this issue. As a consultant in rehabilitation medicine, Áine's interest in integrated care was motivated by her understanding of patients' complex health and social needs when providing multidisciplinary care and engaging and motivating patients. There are obvious parallels with dentistry in that prevention is better than treatment and that we get our best outcomes from our best patients.

Strong clinical content

In this issue, Dr Rona Leith outlines a way for us to identify, manage and educate patients and parents in relation to one group of children with high caries risk, in order to limit and prevent further disease. Dr Sinéad O'Dwyer and colleagues describe the complex management of a severely impacted wisdom tooth, and Drs David McReynolds and Michael O'Sullivan outline the technique and multidisciplinary team approach they used to rehabilitate a very compromised dentition in a young patient. Many thanks to all the authors.

Challenging times

In addition to her clinical role, Áine Carroll was previously HSE National Director of Clinical Strategy and Programmes. She understands the complexities of the HSE as well as anyone, and is a very dynamic and engaging speaker. One talk I attended that particularly resonated with me was on strategies to improve services with limited resources. Áine spoke about the opportunities for small improvements and process changes to make a big difference, but also the limitations; there are always ways to pull rabbits out of the bag, but no one can be expected to pull out an elephant. Our last few issues have covered members' concerns about how to deliver the elephant-sized changes to oral health services outlined in the oral health policy without any real commitment to engaging with the profession to detail the infrastructure, resources or training needed. In this issue, our President's message and members' news provide an update on this.

In our practice management article, Dental Protection provides advice on managing an adverse incident and addresses the issue of professional burnout. The recent IDA podcast with Dr Íde Delargy from the Practitioner Health Matters Programme offers further insight on recognising this and seeking support. In this challenging professional climate, the IDA Practice Management Seminar on January 25 promises to support members to stay connected with our professional values in 2020 and beyond, and I look forward to seeing many of you there.

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References
1. Araujo MW, *et al. J Am Dent Assoc* 2015;146:610–622.
2. Johnson & Johnson. Data on file.

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Intervention needed

There's a standoff and that is not good for anyone. Prof. Stassen calls on the Minister for Health to intervene. If Minister Harris is serious about improving the oral health of the nation, he really has no choice.

The Association regrets that its legitimate and reasonable representations to the Department of Health have been rebuffed to the point where we are at a standoff. The upshot of this standoff is that it appears that the Department is proceeding without the Association's input to the National Oral Health Policy (NOHP). In practice, this means that the two working groups (on education, and care pathways for vulnerable patients) are proceeding without the representatives of the dentists who are expected to implement this policy. The Irish Dental Association is baffled by this approach.

It is important for dentists and the public to know how this situation has arisen. When we met with the Department in August, the Minister was asked and he advised that he was willing to consider other approaches in regard to children's oral health than those outlined in the NOHP. We also stated that we need a Framework Agreement (similar to that already in place with the Irish Medical Organisation), so that our negotiating rights are respected, which will prevent a repeat of the situation in 2008 when the Department walked out on talks with the Association, citing competition law. We also requested the Department to resume the DTSS contract talks it unilaterally abandoned in 2008.

Assuming these positions to be acceptable, we were prepared to participate in the working groups, and asked for terms of reference. However, since August, the Department has indicated that the NOHP is 'settled' Government policy, at least in terms of the oral health of children under six years of age!

The Association unfortunately has not received a Framework Agreement proposal or a commitment to resume DTSS contract talks. Given these developments, your Board of the Association voted unanimously not to participate in the two working groups set up so far. This is regrettable, not good for the NOHP and not of our choosing, but inevitable, given the failure of the Department to provide us with support for reasonable requests and remembering that we were left outside when the policy was being prepared (for four years). This is not good for anyone, especially patients, and when the public/parents have the policy properly explained to them, they will be frustrated and angry. The IDA would prefer to be actively contributing and bringing realistic proposals; our requests are modest and reasonable but they have been ignored, so far anyway.

The bigger consequence is really that the Department can achieve virtually nothing in oral health, whether it is a new policy or not, without us, the dentists who will have apparent responsibility for the work. Our members in both public and private dentistry are united in our dedication to the highest standards of oral healthcare in Ireland and the Department needs to harness our unity and our power, if it is to achieve anything with a new, modified NOHP. Without us, the Department cannot achieve anything and all of us are in favour of improving the oral health of the nation.

Clearly, a political intervention is needed, so I am calling on the Minister for Health to intervene and bring dentists back to the table. If he is serious about improving the oral health of the nation, he really has no choice.

Caring dentists

On the subject of improving the oral healthcare of the nation, being present at the Colgate Caring Dentist and Dental Team of the Year Awards in Dublin recently really lifted the spirits. The stories of repeated acts of kindness and great professional care by dentists of their patients are heart-warming and, in some cases, heart rending. Every dentist and every dental team that is nominated deserves to celebrate and are winners in their own right. The stories that are chosen as regional or national winners are truly exceptional. There has been a huge national reaction to this year's winners and some very positive media coverage; you can read their stories in this edition. Congratulations Paddy.

Looking to the future

We are at an advanced stage of preparation for the setting up of reinvigorated branch committees in some regions and making strong progress in others. I am very grateful for the terrific engagement of members in their regions over recent months. It augurs well for the future engagement by members in our Association.

The third episode in the Association's podcast series *The Whole Tooth* is available now to download via your regular source. This episode hears from Dr Íde Delargy on stress and burnout in dentistry, and about the support that is available to dentists who may be worried about their physical or mental health.

Our Practice Management Seminar is taking place in the Convention Centre Dublin on Saturday, January 25, next. We will have an update on the NOHP, an in-depth look at independent practice, and a review of what free medical care for the under sixes has entailed for doctors, as well as presentations on good business, and a look at commercial and ethical challenges in practice. I look forward to seeing you there.

I wish you all a happy, healthy and prosperous 2020.

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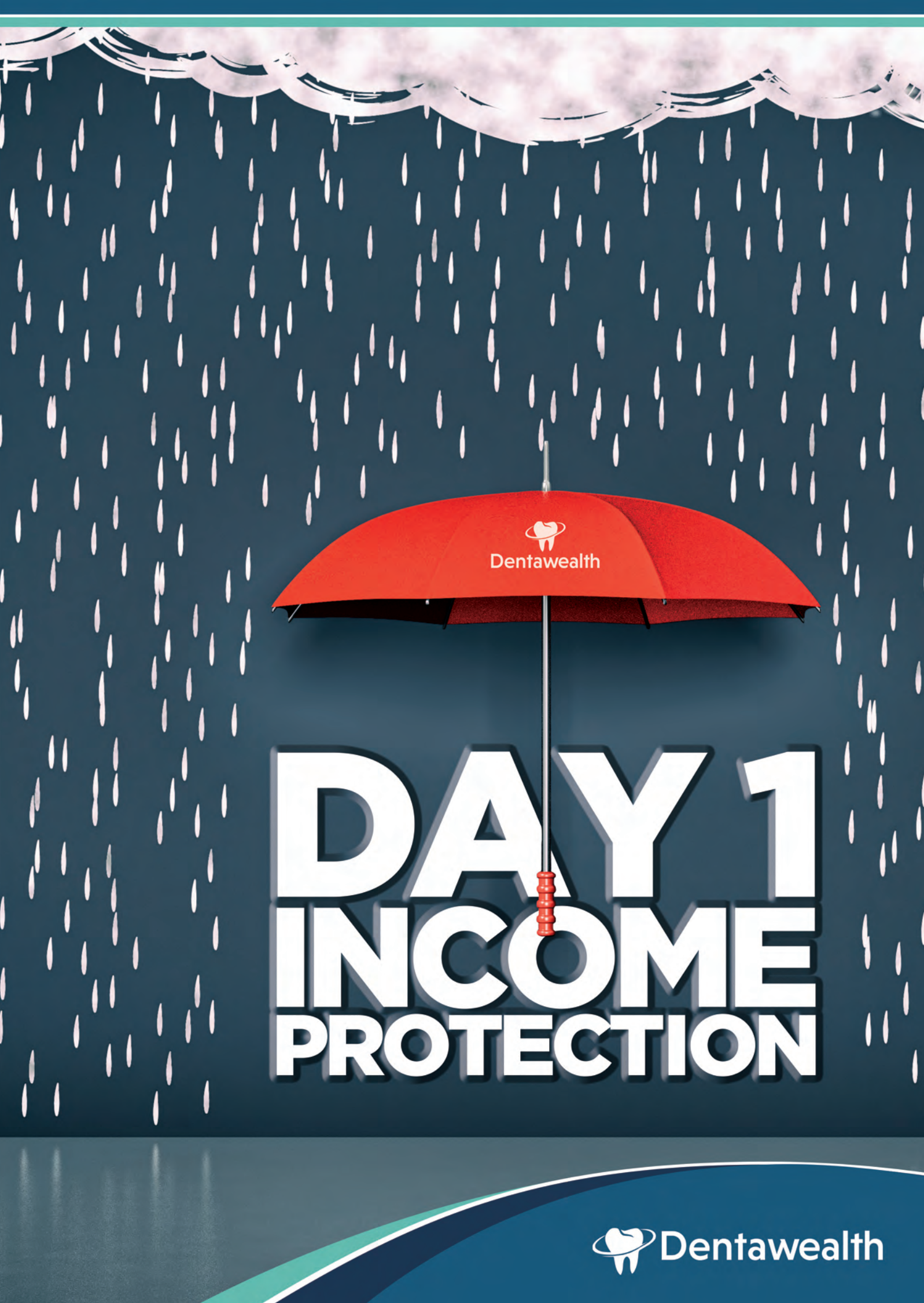
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Annual Conference 2020

All roads lead to Galway from May 14-16 next for the IDA Annual Conference 2020. Don't miss what is expected to be an educational and fun few days in the City of Tribes. We are delighted to welcome onto the programme international speakers such as Drs Maurice Salama of Dental XP fame, digital photography expert Minesh Patel, DDH graduate and London-based dentist Slaine McGrath, well-known restorative expert Ray Bertolloti, and Chris Orr, who will give a hands-on course on Thursday on composites. Obviously we will also have a wide range of Irish-based speakers on a variety of interesting topics over the three days.

A must for all dental team members! To book, please go to www.dentist.ie.

IDA Annual Practice Management Seminar

The IDA's Annual Practice Management Seminar will take place on Saturday, January 25 at the Convention Centre Dublin (CCD). The day will feature excellent speakers on topics such as team dynamics, negotiating with the HSE and business management, as well as a panel discussion on 'Promoting independent practice'. Dental Protection will also have a presentation, with one risk credit for those in attendance. The event is open to IDA members and practice managers of attending dentists. Full programme to follow.

Moloney Award 2019

Dr Claire Healy, Consultant/Associate Professor in Oral Medicine at the Dublin Dental University Hospital, was presented with the Moloney Award 2019, a Lismore Castle Waterford Crystal Bowl, on October 9, by Dr Paddy Crotty, Trustee, Dental Health Foundation.

Dr Healy received the Award as the outstanding Irish presenter/lecturer at the IDA's Annual Scientific Conference, chosen by the Conference delegates.

Dr Healy's lecture was on 'Oral mucosal disease and what to refer'.

The Moloney Award was established in 2003 to recognise the outstanding contribution made by the late Dr Joe Moloney to oral health promotion in Ireland, through his involvement as a founding member of the Dental Health Foundation and his lifetime contribution to the IDA.

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Dates for your diary

Metro Branch ASM

The Metro Branch Annual Scientific Meeting will take place on Friday, February 7, at the Hilton Hotel Charlemont. A day not to be missed, with full details to be confirmed.

Hands-on course – prep design

Dr Seamus Sharkey, prosthodontist, will give a full-day hands-on course in the Maryborough House Hotel in Cork on Saturday, February 22.

South East Branch ASM

The South East branch will hold its ASM on Friday, March 6, at Mount Juliet in Kilkenny. Full programme to follow.

Medical emergencies/BLS course

All dentists should ensure that they are up to date with certification in medical emergencies/CPR and basic life support (BLS) training. The next training courses will take place around the regions:

- Saturday, March 21 – Ormonde Hotel, Kilkenny
- Saturday, March 28 – Meadowlands Hotel, Tralee
- Saturday, April 4 – Radisson Blu, Dublin Airport

IDA retains ADA accreditation

The IDA recently received notice from the American Dental Association (ADA) that the ADA has renewed its accreditation as a certified Association for Continuing Education Recognition Program (CERP) for CPD programmes for a further four years. The ADA CERP provides the ADA with a mechanism to select quality continuing dental education (CDE) with confidence, and promotes the continuous improvement of CDE both nationally and globally.

Commenting on the approval, IDA Assistant CEO Elaine Hughes (above) said: "It was fantastic news for the IDA to retain this approval from a body such as the ADA, and testament to the high quality of courses/CPD provided by the IDA for the dental profession and dental team".

She continued: "The challenge now is to attract US-based dentists to come to Ireland for our Annual Conference: gain accredited CPD, visit Ireland and have a good time meeting Irish dentists".

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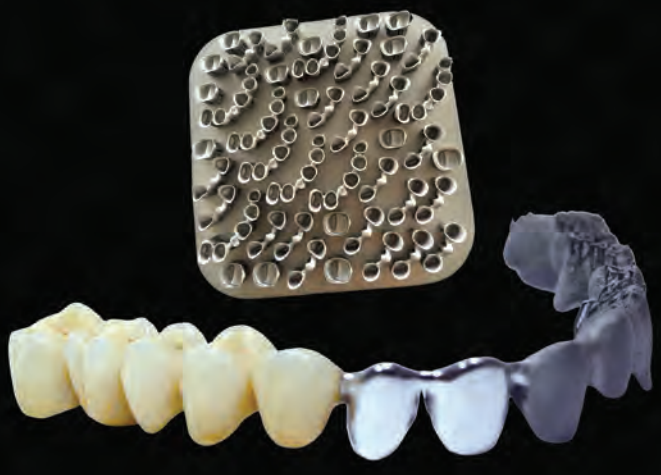

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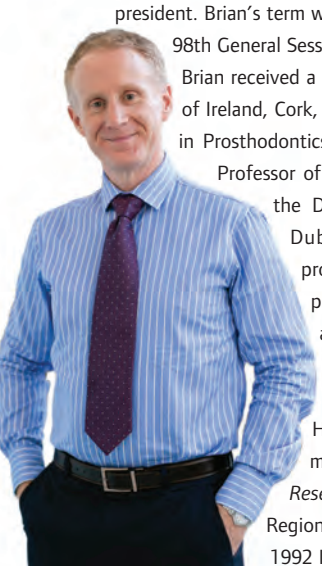
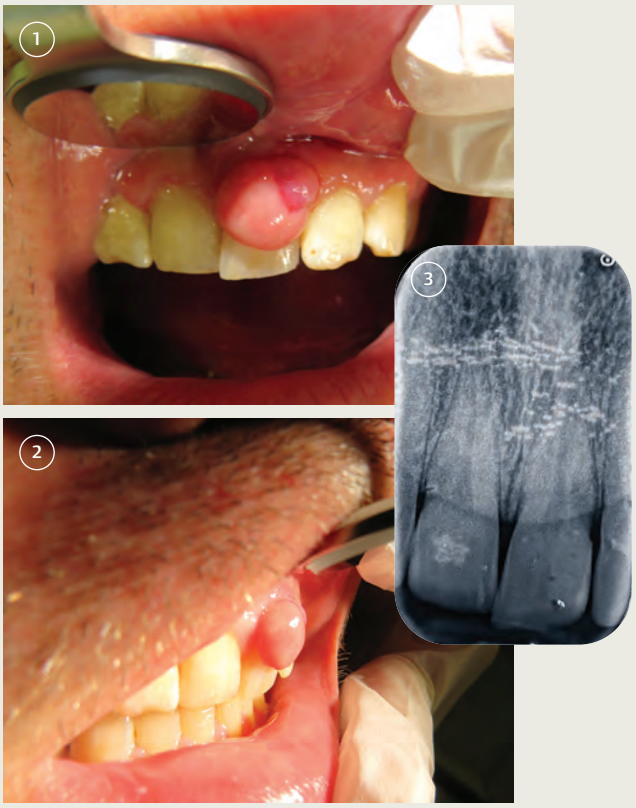


Members of the International Association for Dental Research (IADR) have elected Brian O'Connell, Trinity College Dublin, to serve as IADR Vice-president. Brian's term will commence in March 2020 at the conclusion of the 98th General Session of the IADR in Washington, DC.

Brian received a Bachelor of Dental Surgery at the National University of Ireland, Cork, and a PhD in biochemistry and a Specialty Certificate in Prosthodontics at the University of Rochester, New York. He is a Professor of Restorative Dentistry and Dean of Dental Affairs at the Dublin Dental University Hospital at Trinity College Dublin. With a background in biochemistry and prosthodontics, Brian's research has ranged from salivary proteins to gene transfer, dental implants, bruxism and ageing. Since joining the IADR/AADR in 1983, he has held several leadership positions including Treasurer, Pan European Region Treasurer and Board member. He has been President, Council member and founding member of the Irish Division of IADR, *Journal of Dental Research* Editorial Board member and Chair of the IADR Regional Development Program Committee. He was also a 1992 IADR Unilever Hatton Award winner.

Quiz

Submitted by Dr Richard Lee Kin.



A 42-year-old male, fit and well, and a smoker for 15 years, presented to the dentist. His main complaint was a painless swelling in the upper front region of his jaw, which had been growing slowly for the last two years and was now unaesthetic.

Clinical examination revealed a solitary, ovoid-shaped, well-defined and pedunculated growth attached to the free gingival margin of the left permanent maxillary central incisor (**Figures 1** and **2**). The soft tissue growth had a firm consistency, was smooth and shiny in appearance, and mobile. It measured 0.5x1cm in diameter. X-ray was unremarkable (**Figure 3**) and all other investigations were normal.

Questions

1. Based on the patient's history and clinical examination findings, which one of the following is the most likely diagnosis?
   - A. Fibroma
   - B. Papilloma
   - C. Fibroepithelial polyp
   - D. Pyogenic granuloma
   - E. Haemangioma
2. What else could it be?
3. What would be your treatment plan?

Answers on page 353.

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[1] If haemostasis cannot be achieved after full pulpotomy, a pulpectomy and a RCT should be carried out, provided the tooth is restorable (ESE Position Paper, Duncan et al. 2017)
[2] Taha et al., 2018

The care continuum

As integrated care programmes are implemented all over the country, the *Journal* spoke to Dr Áine Carroll about what integrated care is, and how oral health might fit in this vision of our health service.

Dr Áine Carroll is a consultant in neurological rehabilitation at the National Rehabilitation Hospital (NRH) in Dublin, and Professor of Healthcare Integration and Improvement at UCD. She credits her background in rehabilitation medicine as the starting point of her interest in integrated care: "In rehabilitation medicine we work across boundaries and in multidisciplinary teams; we stay with our patients from onset of their illness for the rest of their life. That continuum of care is very important to us".

This dedication to a team-based approach to care, along with an interest in how health services work, and how they can be changed for the better, led Áine to a post as clinical lead for the National Rehabilitation Programme, part of the HSE's National Clinical Programmes. She eventually succeeded Dr Barry White as National Director of Clinical Strategy and Programmes in 2012: "The clinical programmes were set up to look at quality, access and value: quality of care, access to the right care at the right time in the right place by the right team, and value for money".

While the National Clinical Programmes were very successful at developing disease-specific care pathways, changing demographics, and changing demands on the healthcare system, mean that other approaches are needed: "We have an ageing population, which means that we have got people living longer with multiple morbidities. We've got increasing chronic diseases, we've got the long-term consequences of obesity and alcohol consumption. We also have issues over finance; we never seem to have enough money for health and social care. We have got significant issues with certain populations being excluded from health and social care. Deprivation or poverty is a really big issue. We deliver our services in a fragmented manner. They are not person centred and they are extremely difficult to navigate. It shouldn't be like that". From these observations, and an international evidence base, comes the concept of integrated care.

Ann-Marie Hardiman
Managing Editor,
Think Media

Delivering healthcare differently

For Áine, integrated care is what happens when we think about how we can deliver healthcare differently, and is essentially very simple: "Our vision for integrated care was that we would have person-centred, co-ordinated care".

The programmes sit within the overall framework of Sláintecare, the Government's 10-year plan to reform health and social care services. Sláintecare includes a focus on moving services into the community: "We are hospital obsessed in this country. We judge our health system by waiting lists, by trolley counts, instead of actually asking: what do we need to do to stop this happening in the first place? With Sláintecare, we have this expressed desire to move services into the community, but that will require a fundamental change in how we provide our services, and in how we train and educate our staff".

This doesn't mean taking resources from hospitals, but rather means adequate parallel investment: "We need GPs to be properly resourced, we need the community teams to be properly resourced. We need the third-sector organisations, such as home care organisations, to be properly resourced. All of those things that will keep people well at home need to be resourced. That does not come cheap".

Also key is the realisation that a myriad of factors contribute to good health: "To remain well at home requires good housing, good transport, so it really does require a full governmental commitment".

Pilots

Integrated care is most needed by those with multiple morbidities, such as frail older people, people with chronic illnesses, or patients with complex acquired disabilities such as those Áine cares for in the NRH. Therefore, the first

integrated care programmes were for older people, chronic disease, patient flow, and children's health: "[The intention is that] services wrap themselves around the needs of the individual, rather than the expectation that the individual would be able to navigate their way around how we currently organise our services".

For the integrated care programme for older people, a 10-step framework was developed setting out the different steps required, from identifying the care needs of the older population in a particular area, to developing person-centred care pathways that use a case management approach to co-ordinate the supports needed by each individual, to ongoing audit and monitoring of the programme. This was tested in pilot sites around the country, and Áine says that they are now making a real difference. She mentions the programme in Waterford, led by geriatrician Dr John Cook: "They've got a clinical hub up and running and they are showing the benefits in terms of reduced admissions, reduced readmissions, and good evidence of people being managed at home, getting access in a timely manner to comprehensive assessment and support dependent on individual needs. It's an excellent example of a how things should be done".

Of course, it's not a one size fits all approach; integrated care programmes by their very nature need to suit the needs of specific areas and populations, and also need to be reviewed to reflect how those needs change over time: "You have to analyse as you go along, tweaking and being flexible, because you can't just take a 10-step framework and put it anywhere. It has to be interpreted locally because what works in Donegal is not going to work in inner city Dublin".

Getting all stakeholders on board, and maintaining that engagement, is particularly important in a strategy that, as Áine says, does not deliver fast wins: "We're starting to see the benefits, but you need to give it time to embed, to deliver the benefits, whereas we live in a society that demands immediate response".

In a world where resources can depend on the vagaries of election cycles and short attention spans, this can pose particular challenges, but Áine says it's something they're aware of: "There's lots of things I wish weren't the case – the short political cycles, the annual service planning processes for things that should be multiannual – but at the end of the day it is as it is. You have to get on with the work that needs to be done while being aware that these key stakeholders that you are reliant on to continue to support your programme – including patients and carers – need to be kept in the loop. To be true to the process of co-design is really important, and the programmes were built on that philosophy: 'nothing about me without me'".

Quality time

Áine loves to spend time with her family, including her four siblings. She also enjoys gardening, and has been known to indulge in some birdwatching, a hobby she picked up from her late father. She's also recently taken up Tai Chi: "Tai Chi is something that you can do for the rest of your life. You can start it young and keep it going for years and it keeps your joints moving. There's a lot of meditation associated with it as well. It's fantastic. Monday evenings, that's where you'll find me".

Challenges

So what are the other challenges that have to be surmounted to bring about significant change?: "Our biggest challenge is our ICT [information and communications technology]. If a crisis happens, how can you respond if you can't share information to find out what's available in that local area? It's a fundamental enabler of integrated care that we simply do not have".

Changing mindsets within servcies is also crucial: "We still work in siloes, whether organisational or professional, and [changing] that is about taking the time to develop relationships across those different areas. What we discovered was that people didn't know each other; they may have communicated by email or on the phone, but they'd never actually met to reach a shared understanding, and develop an appreciation, of what the other does, of the challenges that they're facing. Where you take the time to do that, we found that transformative". Money is, of course, always an issue, but Áine says it's not the be all and end all: "What people want is joy in their work and to get pleasure out of seeing people get better and improve. With my clinical colleagues, if I put it to them that if we do this thing, it will result in better outcomes for patients, I've never had anyone say no".

Role of dentistry

So where does dentistry and oral care fit into all of this? Unfortunately, in a formal sense, it doesn't yet, but Áine acknowledges its importance, and with talks hopefully about to begin on the new oral health policy, there may be a real opportunity to integrate oral health into the general health of the nation: "If you think about your continuum from cradle to grave, oral health is extremely important. It's exactly the same principle. When you need to have something done, do you have access in a timely manner to the treatment that you require? And the answer is, unless you're paying privately, no you don't. So what are the knock-on consequences of that in terms of the development of caries and additional procedures that you probably wouldn't require if you had the right treatment at the right time, in the right place? So you could look at it in any phase of someone's life cycle, and in terms of members of the multidisciplinary team, the dentist has got to be right there".

Taking it to the next level

There is much still to be done, and Áine's new role in UCD is about taking the best international evidence and making it available to those who are trying to implement an integrated care approach in their service. In particular, the role of the International Foundation for Integrated Care (IFIC) has been crucial: "IFIC was a huge support to me in setting up the integrated care programmes in the first place. We recognised that we need to be able to help Irish teams in Ireland to do the work that needs to be done, so IFIC were very agreeable to set up an Irish hub and that's what we've done".

IFIC Ireland was launched last year, and is very much open for business: "We have three main pillars: education and training; research and evaluation; and, knowledge mobilisation. Underneath those are a variety of activities, such as webinars and workshops. We have credible experts around the globe who can help with different aspects, and we've our own internal expertise now. Whether it is in the very early planning stages, whether it is in the design stage, whether it is in the evaluation space, we can help".

For more information about IFIC Ireland and its work, go to https://integratedcarefoundation.org/ific-ireland.

Urgent action needed to tackle burnout

The dental community must act urgently to tackle burnout among dentists. A Dental Protection survey of dentists in Ireland has revealed increasing levels of burnout among the profession. Some 44% do not feel that their personal well-being is a priority at work, and 35% have considered leaving the profession for personal well-being reasons.

In its new report, 'Breaking the burnout cycle', Dental Protection says that burnout is not only bad for the dentist concerned, but also for patients and the wider dental team. It calls on large dental organisations to consider establishing a 'Well-being Guardian', so dentists have access to someone trained to recognise burnout and offer support, with a similar dedicated person working with smaller clinics locally. It also calls for dentists' well-being to become a key performance indicator.

Raj Rattan, Dental Director at Dental Protection, said: "In our new report on burnout we recommend some potential steps that both large and small dental organisations can consider. We believe that change at organisational level is a significant root cause of burnout and this must be addressed effectively if we want to support dentists to remain in the profession".

New composite from Voco

Voco has released GrandioSO Light Flow, which it states is an extremely flowable yet highly stable composite with extra-fine cannula. Filling small cavities and the repair of defects are recurring tasks in the dental practice. According to Voco, the primary goal is minimally invasive treatment to minimise the loss of healthy tooth substance. For precise applications, dentists require a highly flowable material, which at the same time displays the familiar excellent physical properties and resilience of a packable restorative composite.

To meet this requirement, Voco states that it has now expanded the GrandioSO product range with a low-viscosity nano-hybrid composite – GrandioSO Light Flow. According to the company, the new flowable composite is thin-flowing, precise and high strength. Voco states that the product's assets lie in the possibility of targeted and precise application with an extra fine cannula, which is even finer than a periodontal probe. Voco also states that the product impresses with superb physical properties despite its excellent flowability; for example, with a filler content of 76% by weight and a three-point flexural strength of 151MPa, it attains values similar to those of a packable composite.

Baltinglass Dental joins Dental Care Ireland

Dr Lotte Ramsden (centre) is pictured with practice manager Sinead Dowling (left) and dental nurse Aisling O'Brien (right).

Dental Care Ireland has announced its acquisition of Baltinglass Dental, a well-established Wicklow practice led by Dr Lotte Ramsden.

As a result of the acquisition, Baltinglass Dental will relocate from Baltinglass to the recently refurbished Dental Care Ireland practice on Tullow Street in Carlow. Dr Ramsden will work alongside Dr Richard Gillman, Dr Colm Traynor and Dr Róisín Brady to provide a full range of dental treatments.

Commenting on the merger, Lotte said: "By merging with Dental Care Ireland in Carlow, we can greatly enhance our overall patient offering. The practice on Tullow Street has been upgraded to the highest possible standards, and it is an ideal opportunity to consolidate many years of experience under the one roof".

According to Colm Davitt, CEO at Dental Care Ireland: "Both practices have a strong heritage in family dentistry, and this development will allow us to further broaden our service to patients in the locality".

Quoris3D guided implant surgery services

Quoris3D states that it has helped dentists and technicians across Ireland and the UK to rethink their working processes. According to the company, it gives direct access to 3D printing, 3D design services, and the ability to purchase 3D printers and resins.

Quoris3D states that it offers a wide range of implant surgical guide services, from custom guides for a single tooth to full-arch guided surgery (CHROME). According to the company, it has designed and manufactured over 72,000 guides for all major implant systems and offers compatibility with all major design software. Whether you design surgical guides in house or require a technician to create them for you, Quoris3D says that it has you covered.

According to the company, it offers a flexible online ordering system, where users can select from the options 'We Design, We Print' and 'You Design, We Print'. Here, the company states, you can order accurately fitting guides that will increase your patients' comfort and reduce their recovery time.

From left: Mark McGowan, Quoris3D; Thomas Kuun, Roe Dental Laboratory; and, James Hamill, Quoris3D.

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The huge attendance rose to acclaim this year's overall winner with a standing ovation.

Anton Savage enjoyed his role as master of ceremonies.

Christina Havalder of Colgate presents Dr O'Reachtagain with the trophy.

Safe haven

A bumper entry in the 2019 Colgate Caring Dentist and Dental Team of the Year Awards was illuminated by a humbling story of help for a patient in a very difficult situation.

> "Taken together, the stories are similar in that our patients report the profession to be kind, understanding, good listeners, smiling, considerate, and try as far as possible to facilitate the patients in achieving their own goals, however simple or complicated. There were some special stories that we have picked out as outstanding, but overall we are delighted to report that the level of service given to patients in Ireland is fantastic and something of which we all can be proud."

These are the words of Dr Barry Harrington, Chairman of the judging panel, in his report of the Colgate Caring Dentist and Dental Team of the Year Awards for 2019. They were used by the President of the Association, Prof. Leo Stassen, in his address at the Awards Ceremony at the Clayton Burlington Hotel in December. They highlight that even though there were outstanding regional and national winners selected, being nominated for an award by a patient represents a mark of pride for all the profession.

Overall winner, Dr Padraig O'Reachtagain, spoke eloquently of how he had seen the brutality of domestic violence early in his career and vowed to help wherever he could. His nominator had come to him with a broken tooth. She had it repaired privately at his practice on a Saturday morning but she got more than dental care: she got gentle advice and assistance that enabled her to get herself and her children to a place of safety. In his acceptance speech, Dr O'Reachtagain also asked dentists to remember their colleagues facing difficulty by contributing to the Irish Dental Benevolent Society. His nominator indicated that she would donate her winnings to Women's Aid and this sum was matched by Colgate.

Christina Havaldar, Professional Oral Care Leader for Colgate in Northern Europe, and Prof. Stassen together presented the awards. The panel of judges were Dr Harrington, Dr Seton Menton, Dr Jennifer Collins and Dr Frances O'Callaghan. Another huge entry (in excess of 2,000 entries) resulted in more work for the judges and a slightly different approach to the winners this year. The Colgate Dental Team of the Year Award included a national runner-up for the first time, while the standard of entry in the Colgate Caring Dentist of the Year was such that the judges selected the five regional winners, plus a national winner. In previous years, the overall winner was one of the regional winners.

Colgate Caring Dentist of the Year

Overall winner

Dr Padraig O'Reachtagain

Padraig with his wife and Practice Manager, Virginia.

In one of the most heart-rending nominations ever received by the judges, Dr O'Reachtagain's patient described how she was the victim of domestic violence. Having had a tooth broken in one attack, Dr O'Reachtagain opened his surgery on a Saturday so she could get treatment. In doing so, the patient reports that he gently advised her on avenues she might explore to get herself and her children into a safer environment. Her words were: "I can't express how thankful I am. He not only repaired my tooth but showed me a way to get out of a violent situation. Myself and my children are now safe due to his care and understanding".

The judges' citation is:

For his outstanding care of the physical and emotional needs of a patient in distress and in immediate danger, and for his ability to provide critical support beyond dental care, Dr O'Reachtagain is the national winner of the Colgate Caring Dentist of the Year 2019.

Colgate Caring Dentist of the Year

Connacht winner

Dr Dorcas Whitney

A 12-year-old boy was on a school trip to the Aran Islands when he suffered an injury to his mouth as a result of an accident on a bicycle. The mother having been rung by the teacher, in turn rang her dentist, Dr Whitney, in something of a panic. She gave guidance and advice to the mother over the phone and said to collect the boy off the ferry and bring him straight to the surgery. Despite the fact that it was by then after hours, Dr Whitney returned to the surgery and applied a splint and stitches having minimised the considerable pain that the boy was suffering.

The judges' citation is:

For what the mother of the child described as "genuine kindness and concern during a scary and upsetting time for us", Dr Dorcas Whitney is the winner of the Connacht Regional title of Colgate Caring Dentist of the Year Award 2019.

Colgate Caring Dentist of the Year

Dublin winner

Dr Patrick Rooney

Anton and Lauren McClory (representing Dr Patrick Rooney) share a lough.

The owner of a guesthouse organised for a group of families in direct provision to stay at her guesthouse for the Christmas period last year. A small boy who was one of the group seemed to enchant the guesthouse owner. She described the boy as "happy and full of joy". Sadly, however, it was obvious to the guesthouse owner that the boy's teeth were rotten. So she put out an appeal on Facebook for a dentist that might treat the child on a pro-bono basis. Dr Patrick Rooney responded immediately and provided the treatment the boy needed over several visits. The family of the boy was naturally very happy that the child could get treatment, but also reported being overwhelmed by the kindness shown to them by Dr Rooney.

The judges' citation is:

For his act of human kindness in providing his professional services to a child badly in need of treatment, but also clearly in the one of the most vulnerable groups in society, Dr Rooney is the winner of the Dublin Regional title of Colgate Caring Dentist of the Year Award 2019.

Colgate Caring Dentist of the Year

Rest of Leinster winner

Dr Marcella Torres Leavy

A patient nominated Dr Marcela Torres Leavy for the care of her extended family. In doing so she indicated that her family included her father in his 80s who needed extensive treatment, and her son in his 20s who is on the autism spectrum and finds going to the dentist a challenge. According to the nominator, Dr Torres Leavy's ability to empathise with and put at ease two very different individuals so that their oral health needs could be fully met is a tribute to her great communications skills and understanding.

The judges' citation is:

For her ability to understand, empathise with, and then successfully treat people with a wide range of oral health needs, Dr Marcella Torres Leavy is the winner of the Rest of Leinster Regional title of the Colgate Caring Dentist of the Year Award 2019.

Dr Torres Leavy responds to Anton's questions.

Massive media coverage

The story of how Dr Padraig O'Reachtagain not only repaired a woman's tooth but showed her and her family a way out of a violent situation caught the imagination of the national media over several days. KIERAN GARRY of GarryPR Communications reports.

RTE presenter Ryan Tubridy with Padraig following the interview and below, just some of the coverage in newspapers nationwide..

Irish Dental Association awards for three Cork practices

Dental practice 'put a smile on my face'

Compassionate dentist honoured

Evelyn Ring

A Tipperary dentist who went out of his way to treat a victim of domestic violence has been named Caring Dentist of the Year.

Padraig O'Reachtagain not only repaired the woman's broken tooth but showed her and her children a way out of a violent situation.

Dr O'Reachtagain, who is almost 40 years in dentistry, said he worked in a practice in East London in the 1980s that was very close to a refuge for women experiencing domestic violence.

"I learned that domestic abuse and violence was a lot more prevalent than we all like to think," he said. "I also learned that it was an issue which, while shrouded in s...

Kinnegad dentist is Leinster's best

This year's 'Colgate Caring Dentist of the Year' received exceptional coverage in print, online, on radio and on social media. It began on Sunday with *The Irish Times* and *Irish Independent* online both covering the story. By Sunday evening the story was the most read on *The Irish Times* online and was generating thousands of likes on its Facebook page, and hundreds of shares and congratulatory comments.

On Monday the story was covered in the print editions of *The Irish Times*, *Irish Examiner*, *Irish Daily Mirror* and *Irish Daily Star*. On his RTÉ One radio show, one of the most popular in the country, Ryan Tubridy devoted five minutes of his news round-up to the story. In addition to praising Padraig for the compassionate care he provided, he praised the woman for taking the courageous step to safety and her generosity for donating the prize money to Women's Aid. He also praised the award sponsors: "In fairness the award sponsors are Colgate and they matched the donation and I admire them for doing that, because that's a decent thing to do…..this is just a marvellous story".

On Tuesday Ryan interviewed Padraig on his show, for 22 minutes. This interview generated a huge reaction among listeners, leading to a second *Irish Times* online story and a story on RTÉ online. The show posted the interview on its Facebook page where it received 63,000 likes. That afternoon Dr O'Reachtagain did a second national radio interview on Newstalk's *Sean Moncrieff Show*. On Wednesday Ryan Tubridy said the interview had generated a massive reaction and read out texts and emails from listeners praising Padraig for his empathy and compassion.

At the same time, Padraig and his award win was front page news in the local papers across counties Tipperary, Offaly and Laois, while he also featured on leading websites such as *irishhealth.com* and was interviewed on local radio. There was also widespread coverage of the other award winners in regional papers and on radio.

Dr O'Connor receives her award from Christina Havaldar and Prof. Stassen.

Colgate Caring Dentist of the Year

Munster winner

Dr Claire O'Connor

A patient presented to Bantry Dental complaining of significant pain in her jaw and mouth. The practice manager instantly realised she was in pain and arranged for her to be seen immediately by the principal, Dr Claire O'Connor. For a dentist, significant jaw and mouth pain is a relatively common presentation. However, in this instance, assessing the level of pain and the demeanour of the patient, Dr O'Connor correctly diagnosed shingles, which is a relatively rare and unusual presentation and a challenging diagnosis.

The judges' citation is:

For her clinical skill in immediately spotting and diagnosing a case of shingles in a patient, Dr Claire O'Connor is the winner of the Munster Regional title of Colgate Caring Dentist of the Year 2019.

Colgate Caring Dentist of the Year

Ulster winner

Dr Hannah Agnew

Again, care of an extended family including a father (suffering from MS), a husband, and a four-year-old child features in this nomination. However, it was Dr Agnew's persistence in dealing with the nominator's own jaw and ear pain that caught the special attention of the judges. The nominator described how Dr Agnew facilitated numerous appointments and phone calls until getting to the root of the problem. This reached its zenith when Dr Agnew asked the patient to email her an update on her condition while she (Dr Agnew) was on holidays.

The judges' citation is:

For her exceptional care of a patient suffering from persistent jaw and ear pain, Dr Hannah Agnew is the Ulster Regional title winner of the Colgate Caring Dentist of the Year Award 2019.

Dr Freda Guiney accepted the overall team award on behalf of her clinic.

Colgate Caring Dental Team of the Year

Overall winner

Guiney Dental Clinic

A man who has suffered from severe depression and anxiety since his teenage years nominated the team at Guiney Dental Clinic for successfully treating him. The patient writes of how he was housebound for many years, struggling badly with mental health issues. Panic attacks are a daily part of his life. Just attending the surgery was an enormous challenge for him; his first experience outside of family and friends for many years. Among the many actions that helped him, he described the relief of the team always being willing to answer his repeated phone calls to assuage his fears, and of the principal, Dr Freda Guiney, always coming into the waiting room to chat with him before the appointment which had the effect of calming him.

The judges' citation is:

For their outstanding kindness to and care for a patient struggling with a severe mental health challenge, the team at Guiney Dental Clinic is the winner of the Colgate Caring Dental Team of the Year for 2019.

Congratulating Dr Colm O'Neill of Wrightville Dental Clinic, Cork.

Colgate Caring Dental Team of the Year

Team runner up

Wrightville Dental Clinic

A bulimia sufferer wrote into the Awards to nominate Wrightville Dental Clinic for "how they helped me change my life". She spoke eloquently of the shame she felt at the state of her teeth and also at having a dental professional know how they got that way, but that from the moment she stepped into Wrightville Dental Clinic and met the team she felt at ease. While there was a long and complex treatment plan, involving several extractions, she said: "They rebuilt my front four teeth so that I feel confident to smile again".

The judges' citation is:

For their holistic care of a patient with bulimia, the team at Wrightville Dental Clinic are our runners-up in the 2019 Colgate Caring Dental Team of the Year.

Colgate Caring Dentist of the Year

Connacht winner

Unfortunately Dr Dorcas Whitney of Orantown Dental Centre could not attend the presentation but she was well represented by her colleagues Nicola Lane, Dr Aideen Buckley and Katherine Costello who accepted the award on her behalf.

The Colgate team (from left): Tom Farrelly; Christina Havaldar; Raul Sanchez; Stephanie Gribben; Paul Munro; and, Danni Amoah.

Association President Prof. Leo Stassen address the attendance.

Padraig and Virginia O'Reachtagain celebrate with their colleagues from Castle Street Dental Practice (from left): Eleanor Noelle O'Leary; Caroline Crean; Claire Ní Reachtagain; Padraig; Virginia; Tara Ní Reachtagain; and, Megan Coughlan.

Dr Aideen Buckley accepts the award on behalf of her colleague, Dr Dorcas Whitney.

Prof. Stassen with Nina Gompa and Dr Vidhya Gompa.

Representing Dr Patrick Rooney from Clear Dental (from left): Rebecca Carey; Niamh Galvin; Avril McManus; Lauren McClory; Bebhinn Kelleher; and, Dr Oonagh Couglan.

Ace Braces Orthodontics

From left: Aileen Duke; Susan Christie; Vikki Dunne; Regina O'Regan; Dr Kevin O'Regan; Anne-Marie Connolly; Tara Murphy; and, Dolores Ravenhill.

COLGATE CARING DENTIST

Anne's Lane Dental Centre
Back row (from left): Michaela Byrne; Dr Paul Hooi; Ema Mestrovic; and, Dr Shahzad Baig.
Front row: Dr Caitriona Kieran; and, Laura Dunne.

Ardrum Clinic
Dr Borbala Csordas.

Ashbourne Dental Care
From left: Dr Anna Guzik; Michaela Kosalko; and, Kristina Courtney.

Bantry Dental
Dr Claire O'Connor and Dr Olivea Morcos.

Blackrock Dental
From left: Dr Morgan O'Gara; Daphne O'Gara; Dr Tom Feeney; and, Mary O'Sullivan.

Bridge View Dental
Back row (from left): Sandra Byrne; Michelle Finney; Josephine Cunningham; and, Dr Doireann Ridge. Front row: Helen Finnegan and Dr Geraldine Honan.

Blessington Dental
From left: Emma Hastings; Dr Aoife Egan; Dr Niall Collins; Michelle Maher; and, Charlene Egan.

Dr PJ Byrne and Dr Johanna Glennon Dental Practice

Back row (from left): Emma Parsons; Katie Horgan; Maura McCormack; Rachel Moss; Marie Flanagan; Lorna Rigney; and, Ana Balan.
Front row (from left): Carol Doran; Dr Johanna Glennon; Dr PJ Byrne; and, Anna Parkinson.

Carlow Dental Centre
Back row (from left): Dr Adam Zsedenyi; Dr Zsofia Tarnai; Lydia Dunne; Arpad Szocs; and, Grace Byrne. Front row (from left): Dr Ivan Sasu; Dr William Hayfron; and, Dr Krisztian Sallai.

Clear Dental Care
From left: Rebecca Carey; Bebhinn Kelleher; Lauren McClory; Avril McManus; Niamh Galvin; and, Dr Oonagh Couglan.

Cleary Fitzgerald Dental Practice
From left: Dr Maurice Fitzgerald; Dr Siobhan Cleary; Sean Henry; and, Dr Eimear Cleary.

Court Street Dental Clinic
Dr Frank Rowe and Johnny Swan.

Crumlin Road Dental
Dr George Miller.

Dental Care Ireland
Back row (from left): Dr Roisin Brady; Dr Omar El Baradie; Lindi Barber; Stephen Norris; and, Dr John Barry.
Front row (from left): Dr Jennifer Huston; Dr Aoife Farrell; Donna Memery; and, Dr Jennifer Collins.

Dental Excellence
Dr Shahin Naji-Esfahan and Dr Eszter Zólyomi.

The Dental Suite
Dr Aysha Akbar Khan.

Dunboyne Orthodontics
Dr Mary Ngeh.

Expressions Dental & Cosmetic Clinic
From left: Dr Sarah Rymer; Fiona Bulfin; Norma Grace; and, Dr William Rymer.

Guiney Dental Clinic
Dr Freda Guiney and Michael Healy.

Tom Houlihan Orthodontics
Back row (from left): Emma Whelan; Dina Lazarenco; Catherine Houlihan; Dr Tom Houlihan; Aileen Carroll; Courtney Hannon; and, Sandra Mashall.
Front row (from left): Marriane Budiongan; Alma McNally; Ana Mc Nerney; and, Maeve Fahy.

Ivory Dental Care
From left: Dr Eamon Nugent; Linda Elebert; Dr Helen-Marie Lane; and, Dr Darach Judge.

Kinnegad Dental
Back row (from left): Edel Sutton; Charlene Smith; Dr Mihaela Stamatova; and, Greta Rudaviciute. Front row (from left): Iris Aherne; Dr Marcela Torres Leavy; and, Aidan Leavy.

Lucey Dental
From left: Maria Byrne; Dr Lisa Lucey; Conor Lucey; Kiara O'Neill; and, Dofia Dutu.

LUX DENT
From left: Dr Maria Stenka; Dr Dawid Stenka; Inesa Breidaka; Jolanta Kamlyuk; and, Dr Katarzyna Dobrylko.

David McConville Orthodontics Donegal
Back row (from left): Claire Hooper; Rachel Brennan; Dr Niamh Boyle; and, Siobhan Coughlin.
Front row (from left): Laura Wilson; Dr David McConville; and, Ann-Marie McConville.

Dr Claire McGrath & Associates
Dr Claire McGrath and Tom Foley.

Dental Department, Monaghan Hospital
From left: Dr Colleen Magennis; Dr Cathy-Jane Marshall; Mary Curran; and, Carmel Slowey.

Noonan Dental Care
Dr Eamonn Noonan and Dr Sarah Morrissey.

O'Keeffe Orthodontics
From left: Martina McGrath; Nicole Whelan; Kate Morris; Dr Mary O'Keeffe; Aine Power; and, Siobhan Cooley.

Orantown Dental Centre
From left: Nicola Lane; Dr Aideen Buckley; and, Katherine Costello.

Pembroke Dental Ballsbridge
From left: Lynn Keenan; Dr David Keenan; and, Dr André Collins.

Portlaoise Dental
From left: Karen Cosgrove; Dr David Cosgrove; and, Noelle O'Leary.

Rathmines Dental
From left: Amy Deverell; Dr Brian McEniff; and, Lynne McEniff.

Riverforest Dental Clinic
From left: Dr Akram Elhadi; Dr Paul Browne; and, Dr Miriam Grady.

Portobello Dental Clinic
Dr Aodh Grant.

Quirke Dental Surgeons
Dr Ursula Quirke and Dr Maurice Quirke.

Sandycove Dental Care
Back row (from left): Dr Lorna McCourt; Mary-Clare Mulloy; Fiona Heavey; and, Tara Blair. Front row (from left): Dr Sean Malone; Dr Garry Heavey; and, Dr Ciaran O hUiginn.

Smiles Dental

Back row (from left): Majella Koukoulis; Dr Michael Koukoulis; Dr Patrycja Nalewajska; Dr Fernanda Mesquita; Dr Ameerah Azeeza Fakim; Dr Sheila Hagan; Dr Louise Hagan; Dr André Collins; Dr Shazaid Baig; Dr Nausheen Raza Hussain; Dr Mollie-Ann Gallagher; Dr Deborah O'Reilly; and, Dr Shermeen Memon. Front row (from left): Dr Alaa Aljibour; Dr Edwina Meade; Dr Christopher Ford; Dr Martin Robledo; Dr Angel Ashtalkoski; Dr Salma Naz; and, Dr Rezart Rada.

Silverton Dental Surgery

Dr Declan Fuller and Cara Fuller.

South Dublin Dental

From left: Dr Alec Granville; Bebhinn Burke; Katie Coughlan; and, Stacey Shortall.

COLGATE CARING DENTIST

Square Dental
From left: Samantha Higgins; Dr Hima Bindu Meda; Shruti Pitta (behind); Dr Sheena McEniff; Miriam Doyle; and, Anita Doyle.

Summerhill Dental Centre
From left: Dr Zivile Nagumanova; Dr Peter Doyle; Lisa Kane; and, Gerry Kennedy.

Dental Department,
Temple Street Children's University Hospital

Back row (from left): Cathriona Byrne; Jessica Ennis; Deirdre Tackaberry; and, Dr Sarah Roux. Front row (from left): Angela O'Toole; Elizabeth Ellard; and, Dr Eleanor McGovern.

Vard Dental
From left: Ilaria Balconi; Sara Louise Murphy; Dr David Vard; Rosemary Bowe; Dearbhäile Larkin; and, Maria O'Rourke.

Wrightville Dental Clinic
Dr Colm O'Neill.

Colgate Caring Dentist of the Year

The nominated dentists

Every dentist photographed here was nominated for a Colgate Caring Dentist of the Year Award by a patient, or in many cases, by several patients.

Dr Ahmed Abdelsalam
Smiles Dental
O'Connell Street

Dr Aysha Akbar Khan
The Dental Suite

Dr Alaa Aljibouri
Smiles Dental Dundrum

Dr Angelko Ashtalkoski
Smiles Dental Tallaght

Dr Ameerah Azeeza Fakim
Smiles Dental Dundrum

Dr John Barry
Dental Care Ireland
Tullamore

Dr Nicola Barry
Fortfield Dental

Dr Niamh Boyle
David McConville
Orthodontics Sligo

Dr Roisin Brady
Callan Dental

Dr Paul Browne
Riverforest Dental Clinic

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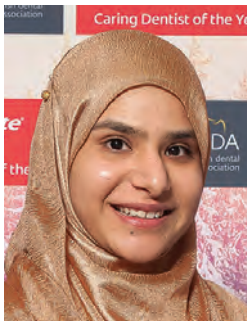

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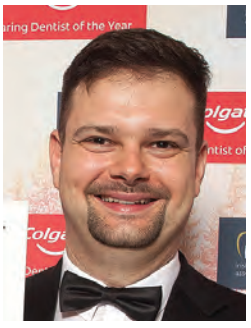

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NSAIDs may lead to onset of new hypertension or worsening of pre-existing hypertension and patients taking antihypertensive medicines with NSAIDs may have an impaired anti-hypertensive response. Fluid retention and oedema have been observed in some patients taking NSAIDs. NSAIDs may very rarely cause serious cutaneous adverse events such as exfoliative dermatitis, toxic epidermal necrolysis and Stevens-Johnson syndrome. Products containing ibuprofen should not be administered to patients with acetylsalicylic acid sensitive asthma and should be used with caution in patients with pre-existing asthma. Adverse ophthalmological effects have been observed with NSAIDs. For products containing ibuprofen aseptic meningitis has been reported only rarely. 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CLONMEL HEALTHCARE

Extraction error

The following case discusses the management of a complaint involving an incorrect extraction.

A patient attended a first consultation with a new general dental practitioner and they completed a routine check-up. During the consultation, the patient reported previous problems with both lower wisdom teeth, which had caused discomfort, swelling and infection in the past. He had been prescribed antibiotics at the time; however, he was not reporting any specific problems at the time of this consultation.

As part of the examination, the dentist believed that an assessment of the wisdom teeth was advisable and, after discussion, the patient agreed to the exposure of two periapical radiographs. The images were processed and the dental nurse placed the films into a plastic film packet. The LL8 was identified to be carious; however, during the appointment, this was incorrectly recorded as the LR8. The dental nurse recorded it as the LR8 under instruction from the dentist. The LR8 demonstrated an area of radiolucency around the crown of the tooth, which suggested to the dentist that there had been repetitive episodes of infection with potentially more in the future, so this tooth would require reviewing. The patient was informed that the LL8 was unrestorable due to caries, and the reason for removal was explained.

The patient returned the following week to have the tooth removed as per the dentist's advice. The dentist checked the records and x-rays, informed the patient what was involved in the procedure (numbing the tooth and removing it), and said that he believed it would be a straightforward removal.

The dentist double-checked the records, which correlated with the x-ray, and proceeded to numb and remove the LR8 without complication. The patient did not comment during the procedure.

The dentist then proceeded to give the patient postoperative advice, and checked the area for haemostasis. At that stage, during review of the socket and mouth, the dentist identified that the carious tooth was still present. The dentist checked the records and radiographs, as well as the tooth that had just been removed, and identified the mistake.

Solution

The patient was informed immediately of the error and this was documented in the records. The dentist apologised profusely, and the patient understood and accepted the situation.

As there was no complaint letter, Dental Protection advised the dentist to contact the patient again to ensure that they were healing well and invite them to attend a review appointment. Dental Protection also helped the dentist to draft a letter offering an apology and explanation, and advised that the issue be discussed at a practice meeting.

A risk assessment and analysis were also recommended, along with completion of a clinical incident form, to ensure that the incident was properly recorded and to determine how a similar situation could be avoided in the future.

The patient accepted the explanation and apology, and there was no further complaint.

The learning point in this case is that the responsibility for record keeping lies with the dental registrant. Even when a nurse adds a record to a computer system, or labels a radiograph, this should ultimately be checked by the dentist. Dentists who have concerns following a procedure can contact Dental Protection, or their dental defence organisation, for advice and support.

Clare Lawrence

Clare is a dentolegal consultant at Dental Protection.

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Pushing the envelope of digital dentistry

Combining the digital and conventional workflow to achieve optimised clinical outcomes in fixed prosthodontic rehabilitation.

With the continuing innovations in the world of digital dentistry and their advantages over the conventional workflow, the dental profession is showing a steady shift towards digital fabrication procedures in fixed prosthodontics.

The advantages of the digital workflow

The digital workflow offers many advantages over conventional procedures. Digital data acquisition procedures with intra-oral scanners are reported to be more user friendly,[1] are preferred by patients, and are more time efficient than conventional impressions.[2] They permit instant evaluation of their resultant virtual casts[3] and rapid transfer of clinical data to the dental laboratory.[4] The laboratory procedures are also more time efficient[2] and involve fewer fabrication steps, which in turn is thought to reduce the effect of error accumulation in the fabrication process. Therefore, digital workflow laboratory procedures permit the use of dental materials with enhanced mechanical and manufacturing properties and, since the method of fabrication of these restorations purports to involve fewer steps and fewer sources of potential error, more standardisation and predictability are available to the operator.[5] In terms of accuracy, the digital workflow appears to produce clinically acceptable fit in single-unit crowns and short-span fixed dental prostheses on natural teeth[6-11] and implants,[12,13] but it appears that it is not accurate enough to be applied to full-arch applications, particularly those involving dental implants.[14-18]

The limitations of the digital workflow

However, there are limitations with the digital workflow. For instance, during the data acquisition process, visual interferences such as soft tissue, saliva and blood can prevent the accurate capture of preparation margins.[19] In terms of laboratory procedures, methods are available to virtually emulate the functions of the facebow but no method yet fully replicates its functions.[20] Additionally, at this current point in time the digital workflow can only fabricate prostheses on the basis of the maximum intercuspation (MIP) position and no simplified provision is made to address dynamic articulation.[21]

Thus, in complex prosthodontics applications, considerable occlusal adjustments will be required intra-orally when fitting multiple definitive prosthodontic units if they were fabricated using a fully digital workflow, which may limit the advantages of the workflow altogether.[22]

Combining conventional and digital workflows

As such, it can be seen that both the conventional and digital workflows have advantages and disadvantages of their own, and that each technique should be viewed merely as a different method of achieving a similar result at this current point in time. Therefore, the decision to use one method over the other, or indeed to combine the digital and conventional workflow, should be based on the needs of the patient being treated.

This clinical example illustrates a posterior fixed implant and dental reconstruction involving 11 gold-palladium metal-ceramic units. The restoration was organised into a mutually protected occlusion.[23] The clinical results were achieved by combining the advantages of the digital and conventional workflow.

Clinical application

The patient was a lady, aged 43 years, in good health, whose chief complaint was that her "back teeth are breaking down faster than they can be fixed". Extra-oral assessment revealed a high functional lip line, while intra-oral examination (**Figures 1a-1e**) displayed a heavily restored posterior dentition associated with multiple restoration repairs, complicated by stained, vertical cracks in the remaining tooth structure. There was evidence of generalised mild-moderate clinical attachment loss and Miller I recession in the context of a thin gingival biotype; however, the periodontal status was stable with good oral hygiene, no evidence of periodontal pocketing greater than 3mm, and no evidence of bleeding on probing. Ongoing evidence of bruxism and high caries risk status were suspected. Patient expectations of treatment were high.

Initial treatment

Following multidisciplinary assessment, an initial course of mouth preparation treatment was implemented. Teeth UR4, UL4, UL5 and LL6 were deemed non-restorable due to a lack of coronal tooth structure and were extracted with

This clinical article is expanded from a poster presented in Chicago, Illinois, at the American Academy of Fixed Prosthodontics 67th Annual Scientific Session.

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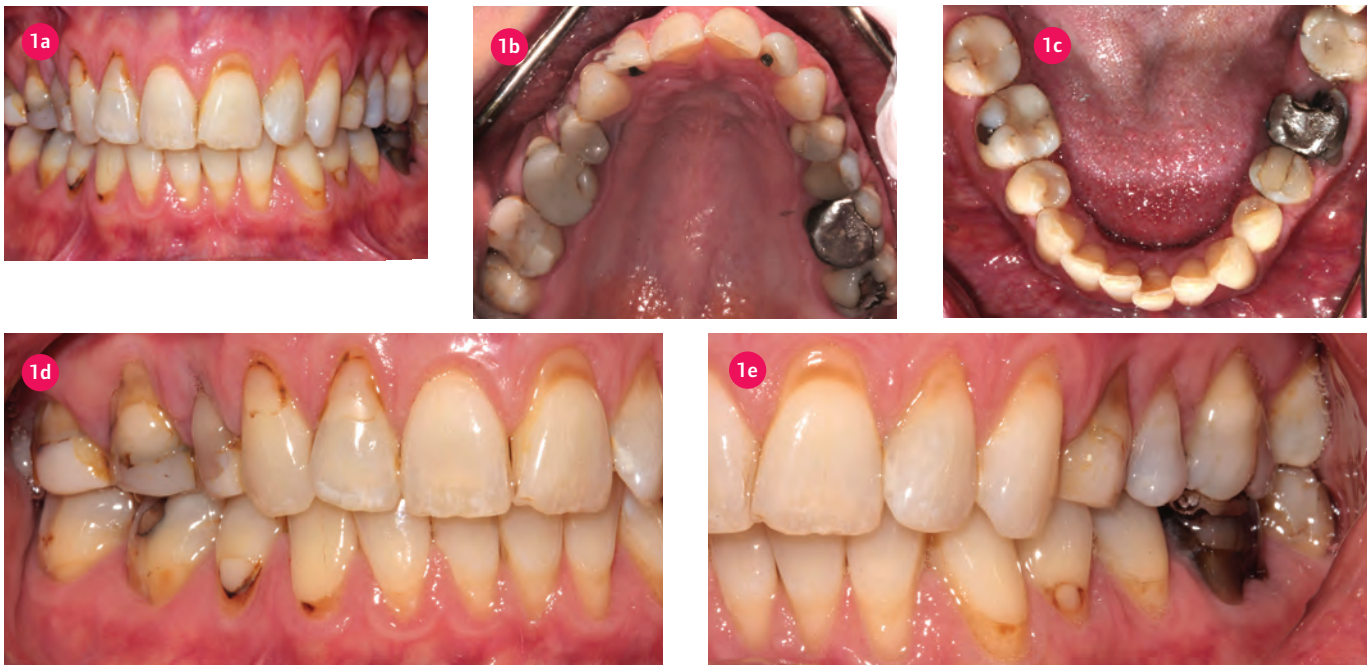


FIGURE 1: The pre-operative presentation of the patient in the maximum intercuspation position. On initial presentation, teeth UR4, UL4, UL5 and LL6 were deemed non-restorable due to a lack of coronal tooth structure. Generalised Miller class I recession was evident in the context of a thin gingival biotype. Preliminary treatment involved connective tissue grafting and placement of dental implants at sites UR4, UL4 and LL6.

socket preservation.[24] Generalised Miller class I recession was treated with bilateral connective tissue grafts. All existing direct restorations were removed from heavily restored posterior teeth. In the absence of opposing wall intra-coronal retention, pin-retained and resin-bonded amalgam cores were placed.[25] Following initial preparatory treatment, disease stability was established and maintained for an extended period of time prior to comprehensive fixed reconstructive dentistry, which included the placement of implant fixtures at sites UR4, UL4 and LL6.

Diagnostic records

Based on conventional pre-operative records, mounted casts were fabricated in triplicate to form pre-operative, wax-up and shell crown casts.[26] Mounted pre-operative (**Figures 2a-2b**) and wax-up models (**Figures 2c-2d**) in the conventional workflow permit dynamic occlusal analysis and planning for occlusal re-organisation, while the digital fabrication of milled polymethylmethacrylate (PMMA) shell crowns (**Figures 2e-2f**) based on the wax-up contours permitted the marriage of enhanced material properties with optimised loading strategies.

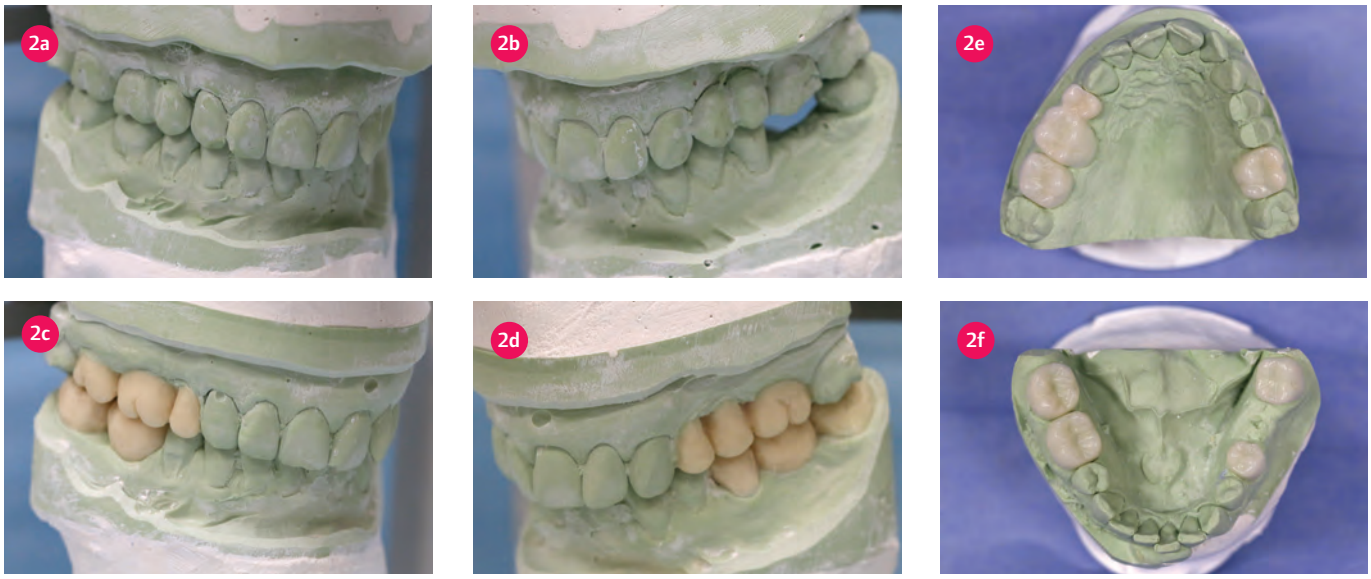
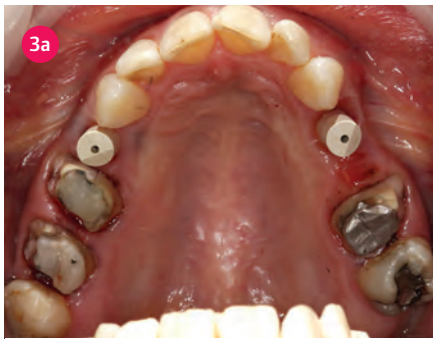
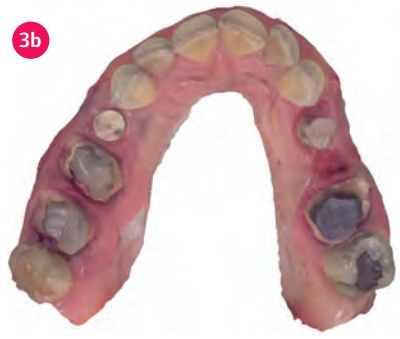
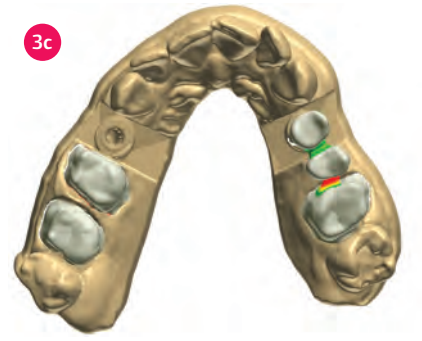
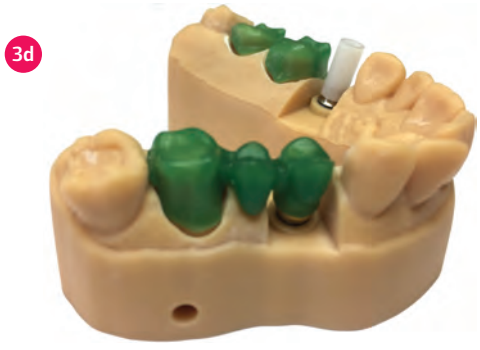


FIGURE 2: Based on conventional pre-operative records, mounted casts were fabricated in triplicate to form pre-operative, wax-up and shell crown casts. Mounted pre-operative and wax-up models in the conventional workflow permit dynamic occlusal analysis and planning for occlusal re-organisation, while the digital fabrication of milled PMMA shell crowns based on the wax-up contours permit the marriage of enhanced material properties with optimised loading strategies.









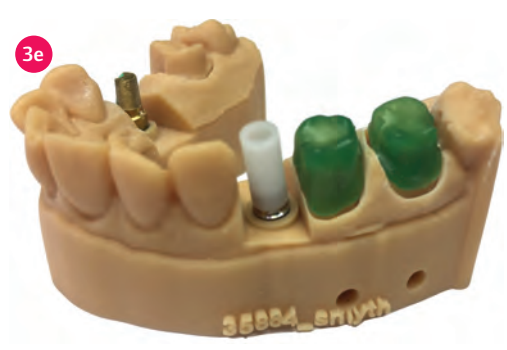


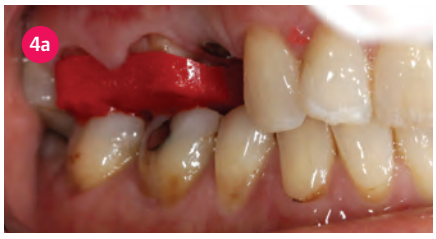
FIGURE 3: Chairside digitisation of the maxilla. Digitally designed cut-back copings offer the advantage of uniform reduction with appropriate support for veneering porcelain. Machine-fabricated wax patterns permit investment casting procedures, allowing the use of premium alloys such as gold-palladium, which are otherwise not accessible in a fully digital workflow.

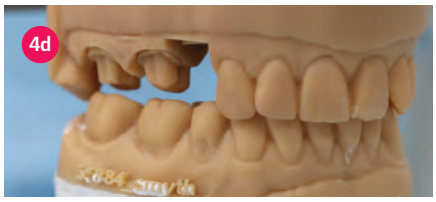
Chairside digitisation of the maxillary arch

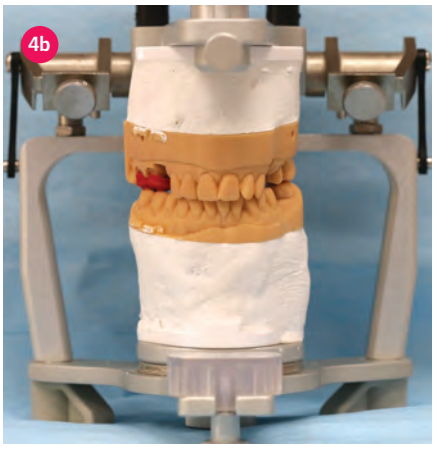
Tooth preparations were made for metal ceramic crowns on the UR7, UR6 and UL6 posterior maxillary teeth (**Figure 3a**). These tooth preparations were provisionalised using the aforementioned shell crowns, which were relined chairside with autopolymerising PMMA, with the aid of positioning jigs.[26] Following an extended provisional phase to assess for biomechanical stability and patient acceptability of the proposed definitive crown contours, chairside digital impressions were recorded (**Figure 3b**).[5]

Based on the digital impression, computer-aided design and computer-aided manufacturing (CAD-CAM) technology permitted the digital design of cut-back copings (**Figure 3c**), machine-fabricated in a milled wax material (**Figures 3d-3e**). The milled wax pattern was subsequently investment cast to form gold-palladium copings. This combined digital-conventional workflow offered the advantage of uniform reduction of the copings with appropriate support for hand-stacked veneering porcelain. Gold-palladium was selected due to its castability, its favourable oxidising properties as a noble alloy for porcelain bonding, and its warm underlying hue as a so-called aesthetic metal.[27] Due to the expense of using such high-noble alloys, they are not readily accessible for machine fabrication.

In this particular example, as bruxism and occlusal overloading conditions were suspected, and since the patient declined full-contour metallic restorations owing to their aesthetic unacceptability, metal-ceramic crowns were selected as the choice restoration. By their very nature, conventional metal-ceramic crowns cannot be fabricated in a fully digital workflow. Thus, conventional jaw relation records (**Figures 4a**) and conventional mounting (**Figures 4b-4d**) become necessary in the absence of a stable occlusion. This conventional approach also permits the development of a mutually protected occlusal relationship with relative accuracy when tooth-guided movements are simulated, and this offers the advantage of an optimised occlusal loading strategy being designed into the definitive crowns. The definitive metal-ceramic crowns (**Figures 5a-5c**) were fitted in the posterior maxilla, before proceeding to restoration of the posterior mandible (**Figures 5d-5e**).







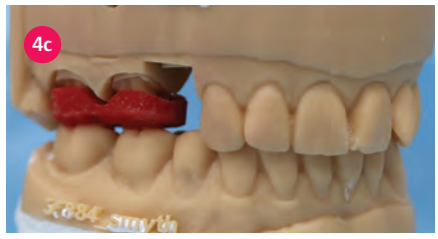


FIGURE 4: The selection of metal-ceramic crowns necessitates the use of conventional jaw relation records as the hand layering of porcelain cannot currently be automated. Conventionally mounted mastercasts are essential to re-organise dynamic articulation.

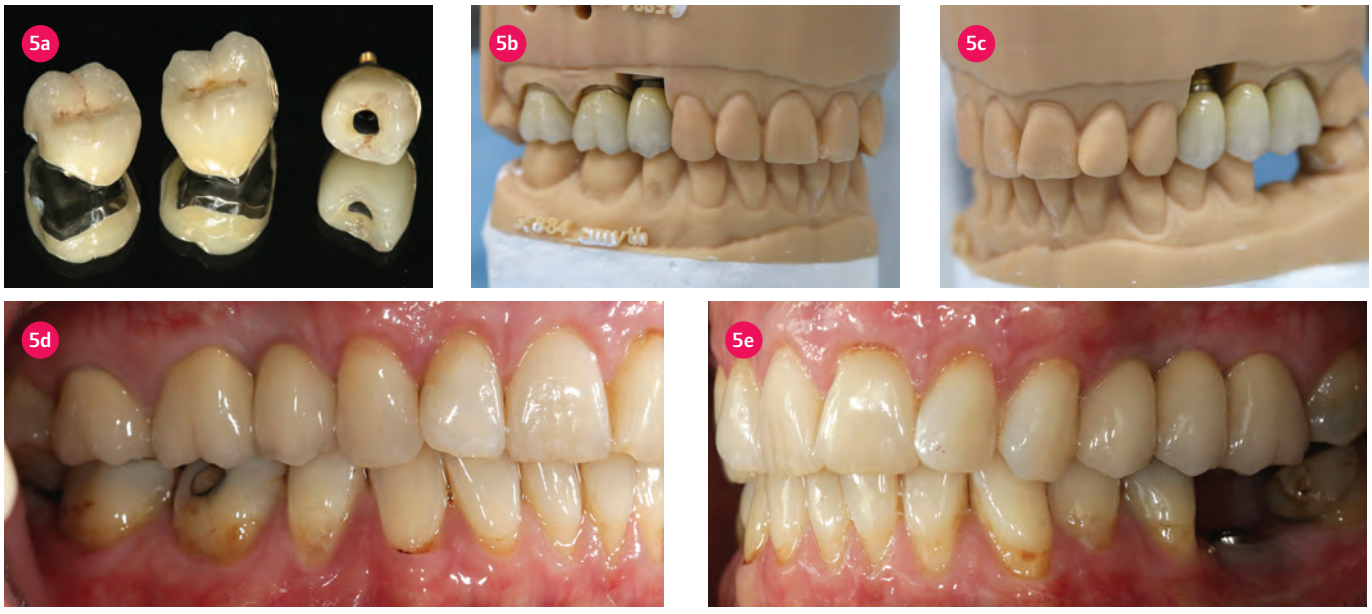


FIGURE 5: Beautiful definitive metal-ceramic crowns fabricated using a combined digital-conventional workflow at the dental laboratory. Note the excellent gingival response and shade matching, two weeks post cementation.

Chairside versus laboratory digitisation of the mandibular arch

Following definitive restoration of the maxillary arch, tooth preparations were made for metal-ceramic crowns on the LL7, LL5, LR6 and LR7 mandibular posterior teeth (**Figures 6a-6b**), and this arch was provisionalised as stated previously. During the provisional phase of treatment, multiple debonds of provisional crowns occurred despite an optimum occlusal relationship being established, and definitive cements being used. As such, intra-crevicular preparation of the aforementioned posterior mandibular teeth was carried out to increase preparation height and thus retention and resistance form.[28] An attempt at chairside digitisation of the mandibular arch was made (**Figures 6c-6d**); however, due to deep sulcular soft tissue development, visual interferences prevented accurate capture of the crown margins (**Figures 6e-6f**).

As a result, conventional elastomeric impressions (**Figures 7a-7c**) were made from which gypsum mastercasts were fabricated. These mastercasts were laboratory digitised to permit the fabrication of metal-ceramic crowns using the methods previously stated. A mutually protected occlusal arrangement was achieved on the dental articulator (**Figures 8a-8d**) and was carried forth into the mouth without the need for chairside adjustment (**Figures 9a-9e**).

Conclusion

This clinical example illustrates how an optimised treatment outcome may be achieved when combining the advantageous elements of a digital and conventional workflow. Clinicians will find that when managing more complicated cases, conventional techniques may offer solutions that digital

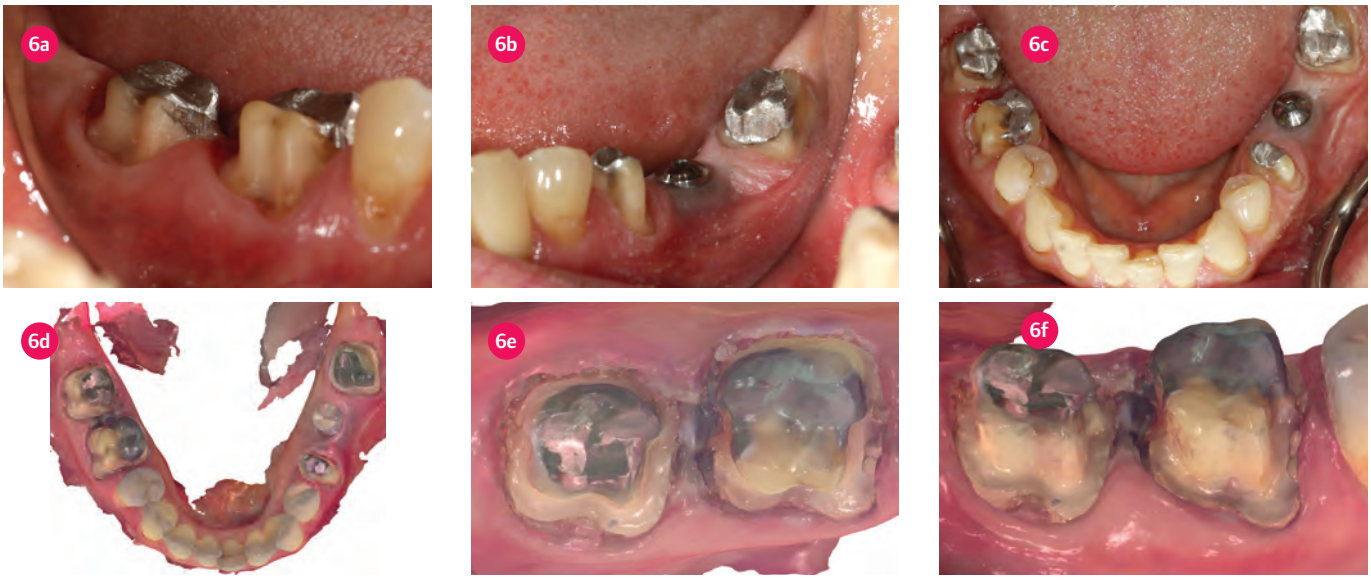


FIGURE 6: In this example, deep sulcular soft tissue development created visual interferences in the mandibular right molar region, which obscured the tooth preparation margins. In such circumstances, conventional elastomeric impression techniques offer advantages over the digital workflow.

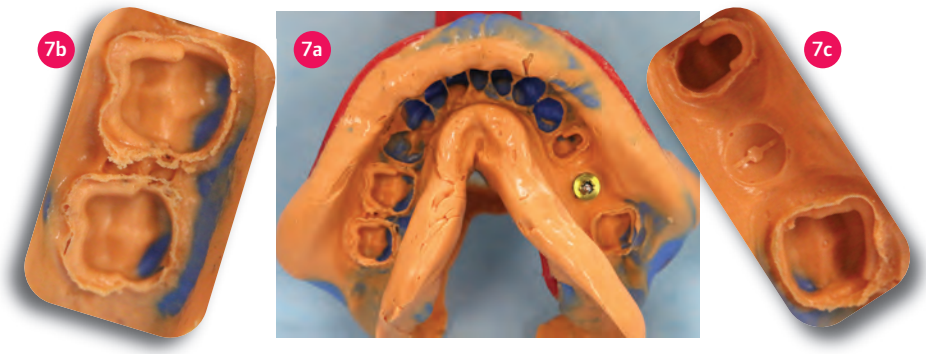


FIGURE 7: Conventional polyvinylsiloxane impressions with laboratory digitisation were selected as a pragmatic alternative to chairside digitisation, to permit accurate recording of the tooth preparation margins.

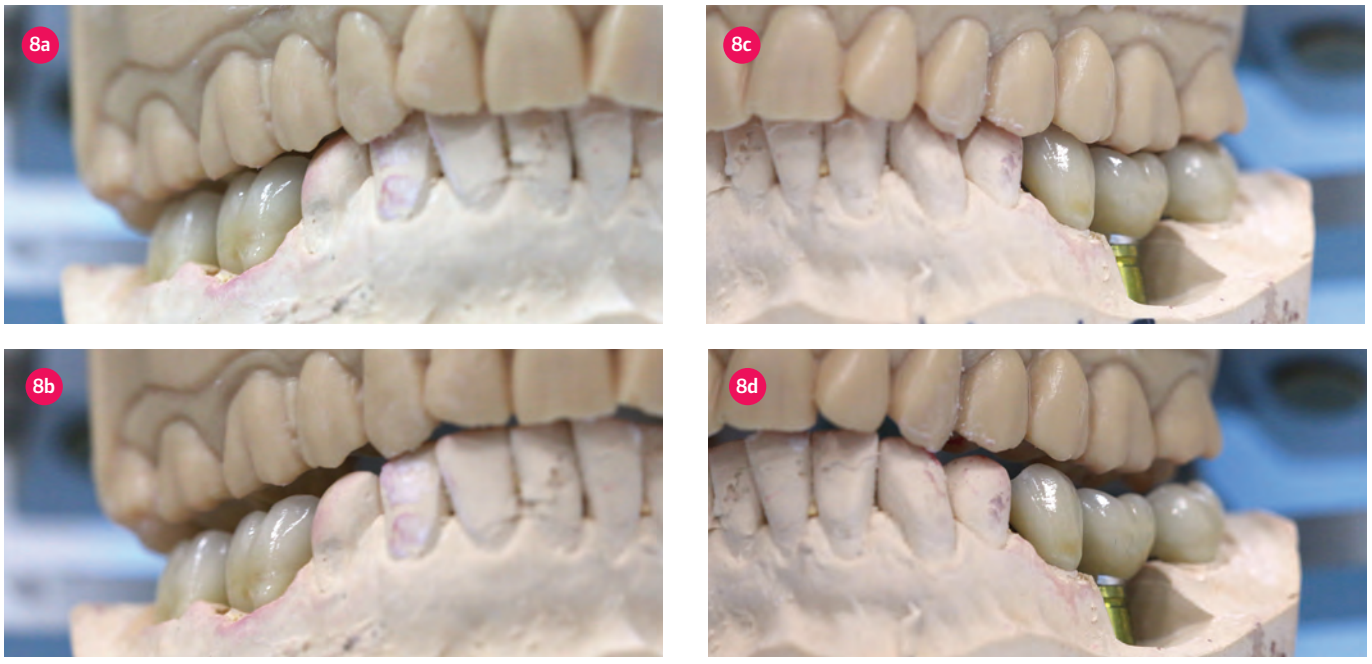


FIGURE 8: Definitive mandibular units organised into a mutually protected occlusal arrangement. A 3D printed polyurethane maxillary model articulates with a conventional gypsum mandibular model due to the peculiarities of the examplee.

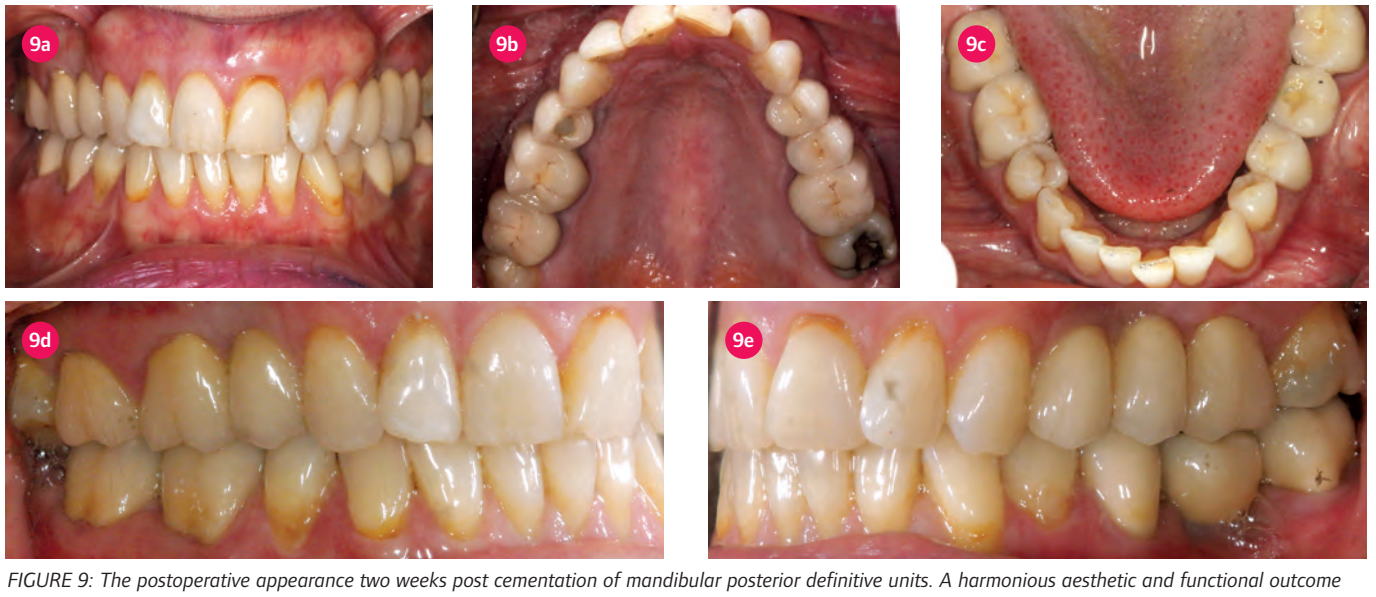


FIGURE 9: The postoperative appearance two weeks post cementation of mandibular posterior definitive units. A harmonious aesthetic and functional outcome has been achieved for the patient.

techniques presently cannot, especially where the need for robust restorative outcomes are concerned. That being said, the digital workflow still offers numerous advantages to the patient, clinician and laboratory technician alike. Clinicians may choose to digitise their case chairside or in the dental laboratory. Both options have their advantages and limitations, and can be selected depending on the needs of the patient. Similarly, at the dental laboratory, fabrication steps can, and in many instances should, incorporate steps from conventional as well as digital workflows in order to realise excellence.

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Hypomineralised second primary molars may be indicative of future molar incisor hypomineralisation

Précis

General dental practitioners should be familiar with the signs of hypomineralised second primary molars (HSPM), as these children are high caries risk and may be more likely to develop molar incisor hypomineralisation (MIH).

Abstract

Background: The term hypomineralised second primary molars (HSPM) describes a prevalent qualitative developmental defect of enamel. Children with HSPM are at a high risk of caries, and are reportedly five times more likely to develop molar incisor hypomineralisation (MIH).

Aetiology: There is an overlap in the development of the second primary molar and the first permanent molar. It is likely that MIH and HSPM have some shared aetiological factors, but in the case of HSPM the insult likely occurred earlier.

Diagnosis: HSPM can be identified as soon as the second primary molar erupts. It has a distinct clinical presentation and many clinical similarities with MIH. HSPM should be differentiated from typical early childhood caries.

Conclusion: Early dental visits for all children would allow early diagnosis of HSPM, which is essential to prevent future problems. Dental teams who work with children should be familiar with the signs of HSPM and use high caries risk preventive strategies, as well as increased vigilance during eruption of the first permanent molars.

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Introduction

Molar incisor hypomineralisation (MIH) is a well-recognised qualitative dental defect often associated with increased treatment needs (**Table 1**).[1] It has an estimated global prevalence of 14.2%,[2] yet the aetiology of MIH is still not fully understood.[1,3] As a result, dentists are not able to predict which children are at an increased risk of developing MIH prior to eruption of the first permanent molars. However, a recent systematic review suggests that detection of a similar hypomineralisation defect in the primary dentition could identify those at an increased risk of developing MIH in the future.[4] This finding is significant, as it may be the only dental risk indicator potentially available to dentists in predicting MIH, and it is something that could be easily identified by routine examination alone (**Figure 1**).

HSPM and MIH

Although by definition MIH refers to hypomineralisation of first permanent molars (FPMs) and incisors,[5,6] MIH-like defects can also affect the tips of canines, second permanent molars and second primary molars.[7] When hypomineralisation occurs in the primary dentition, the second molars are most commonly affected.[8] MIH-like defects affecting second primary molars have been termed "hypomineralised second primary molars" (HSPM).[8] This is defined as "idiopathic hypomineralisation of one to four second primary molars".[8] A recent systematic review determined that the prevalence of HSPM varies from 5-20%, with a mean of approximately 11%.[4] This figure may be underreported because severe caries of the second primary molars could mask the detection of HSPM. Elfrink (2006) reported that occlusal caries is

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TABLE 1: Glossary of key terms.

Molar incisor hypomineralisation (MIH):	Hypomineralisation of systemic origin of one to four first permanent molars frequently associated with affected incisors.[5]
Hypomineralised second primary molars (HSPM):	Idiopathic hypomineralisation of one to four second primary molars.[8,10]
Enamel hypoplasia:	A quantitative defect resulting from disturbance to the ameloblasts during enamel matrix secretion.[5,10]
Enamel hypomineralisation:	A qualitative defect resulting from disturbance during calcification or maturation.[10]

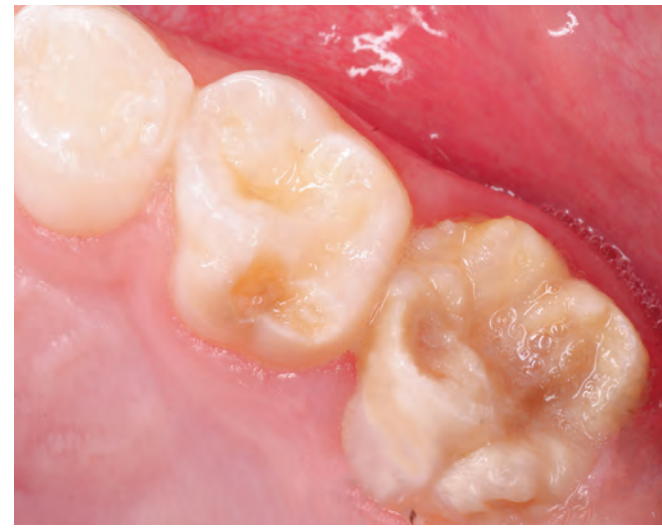


FIGURE 1: HSPM with PEB affecting 65 and MIH with PEB affecting 26. Early identification of HSPM defect in 65 may have predicated the future occurrence of MIH.

significantly more prevalent on second primary molars than first primary molars, and this finding may be attributed to an underlying enamel defect of that particular tooth surface.[8,9] While HSPM is reportedly a prevalent condition, there are very few publications on this topic compared to MIH.[8]

Many studies have reported an association between HSPM and MIH.[4,10-13] One cross-sectional study examining almost 2,000 children reported that MIH was six times more likely to occur in children with HSPM.[13] A recent systematic review, which included five other studies, found that, overall, children with HSPM were approximately five times more likely to develop MIH, and the more molars affected by HSPM, the greater the risk.[4] Interestingly, there may be higher odds of developing MIH for mild HSPM presentations rather than severe.[11] The explanation given is that the disturbance causing milder HSPM is more likely to occur later in their development, which coincides with the earlier, more active mineralisation phases of the FPMs.[10,11] While the absence of HSPM does not exclude the possibility of future MIH,[12] identification of HSPM prior to eruption of the FPMs can be considered a risk indicator. Consequently, children with signs of HSPM should be monitored closely during eruption of their FPMs.[11] Targeting patients who are most likely to develop MIH with early intervention could potentially minimise the complications of MIH[4] or prevent excessive dental visits. It is well documented that children with MIH undergo much more dental treatment and may develop more dental fear as a consequence.[14]

Aetiology of HSPM

Both MIH and HSPM occur as a result of a developmental disturbance of enamel formation during maturation. A common cause could simultaneously affect the FPMs and the second primary molars as they develop in parallel and in a similar jaw location.[10] There is an 11-month overlap in the mineralisation period of the second primary molar and the first permanent molar. The second primary molar begins to calcify at around four months *in utero* and the crown is complete at around 10-11 months of age.[15] The first sign of calcification of the FPM is at birth. By age one the occlusal half of the FPM crown is formed, but it takes much longer for crown mineralisation to complete.[15] Some authors have suggested that the most critical period for enamel defects of FPM is within the first year of life, or more specifically during the first six to seven months, as this coincides with early maturation.[16] Any insult during this timeframe could also affect the second primary molar.

It is likely that MIH and HSPM have some shared aetiological factors, but in the case of HSPM the insult likely occurred earlier in life[10] – perhaps prenatal or perinatal.[3,8,17,18] The aetiology of both MIH and HSPM, while still not fully understood, is likely to be multifactorial and associated with environmental factors and a possible genetic predisposition.[3,18] A recent systematic review concluded that early childhood illness (especially fever) appears to be associated with MIH, and that prenatal or perinatal factors are less frequently involved.[3] The aetiology of HSPM on the other hand may be related to a number of prenatal and perinatal factors, including: maternal alcohol intake; low birth weight; general perinatal morbidity; and, fevers within the first year of life.[18] Others have suggested that perinatal and neonatal factors may be more commonly associated with HSPM rather than prenatal factors.[3] It is important to note that there is significantly less evidence relating to the aetiology of HSPM compared to MIH, and it is clear that more high-quality prospective studies are needed.[3]

Diagnosis of HSPM

Elfrink *et al.* (2015) suggested that the ideal timing for diagnosing HSPM is at five years of age, when the second primary molars have been present in the mouth for approximately two years and the child is more likely to be co-operative.[19] However, signs of HSPM can be detected on second molars as soon as they erupt, so the child should be examined as early as possible. The first step in risk assessment for HSPM is to review the medical history in detail, including the prenatal, perinatal and postnatal period.

Clinically, the European Academy of Paediatric Dentistry (EAPD) diagnostic criteria[6,8] used to diagnose MIH can be adapted for scoring HSPM. The second primary molars should be cleaned and inspected for any of the following signs:

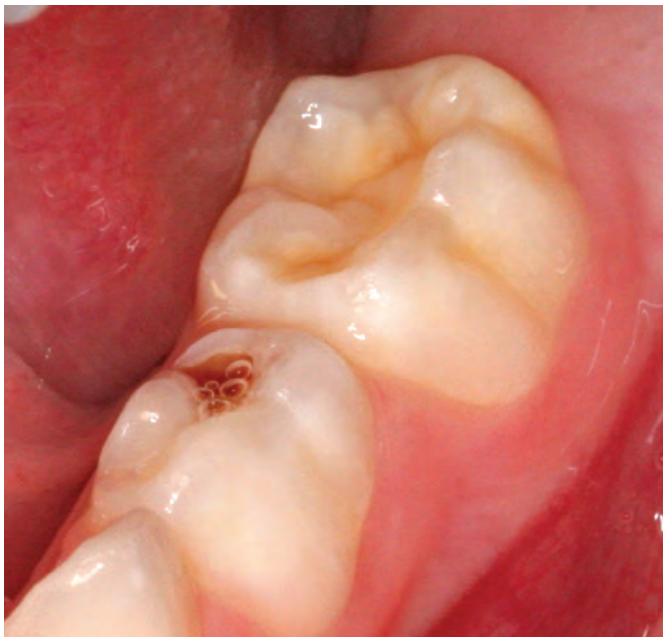


FIGURE 2: Demarcated enamel opacities tooth 75.

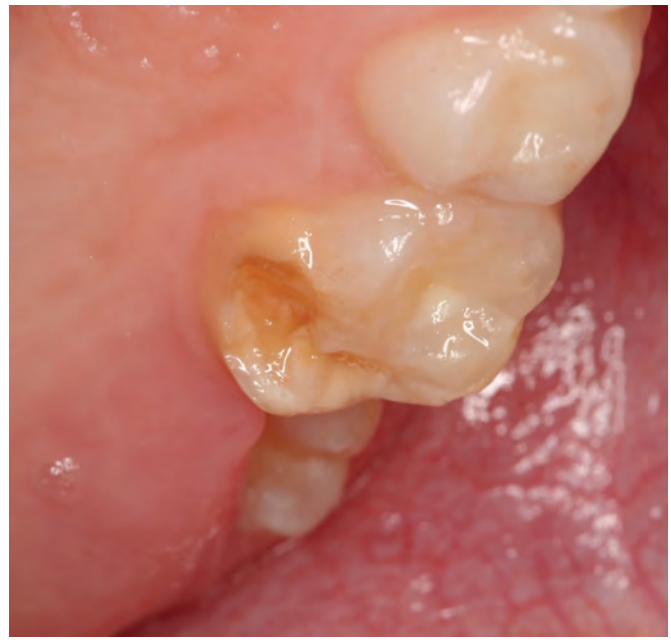
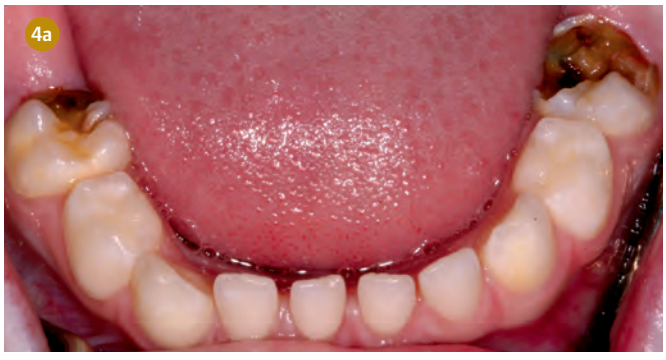


FIGURE 3: Atypical caries and PEB tooth 65.

demarcated enamel opacities (**Figure 2**); post-eruptive enamel breakdown (PEB) (**Figure 3**); atypical caries (**Figure 4a**); and, atypical restorations or extractions that do not match the caries pattern of the child.[8,9,20] A demarcated opacity is an area of altered enamel translucency with a clear border, which can be white, yellow or brown in colour.[8] Darker coloured defects indicate more severely hypomineralised enamel with reduced mineral density.[21] Most often, a diagnosis of HSPM is made by detecting demarcated enamel opacities.[11] The defects in HSPM are predominantly located on the occlusal and buccal surfaces, and generally have an asymmetrical distribution (**Figures 4a** and **5a**). Like MIH, the severity and colour can vary within the same mouth.[5,7,10] Once PEB occurs, HSPM can be considered severe.[10] It can also be hard to distinguish hypomineralisation from enamel hypoplasia once the enamel has broken down.[10] Atypical restorations are uncommonly seen as most of the decay in this age group remains untreated.[8,20]

Hypomineralisation is a key risk factor for caries in the primary dentition[10] and children with HSPM are therefore at an increased risk of developing caries[8] (**Figures 4a** and **4b**). Caries prevalence increases in line with HSPM severity and the rate of progression is also accelerated.[20] Furthermore, the chance of presenting with severe untreated caries is greater in children with HSPM than those without.[22] Anecdotal evidence suggests that HSPM is often overlooked as typical early childhood caries (ECC), so the clinician needs to examine the entire primary dentition carefully to differentiate HSPM from the typical pattern of ECC. Once PEB occurs this can be difficult.[20] ECC is generally a symmetrical disease in which teeth that have been exposed to the cariogenic environment the longest tend to be more severely affected. The second primary molar is the last primary tooth to erupt; therefore, breakdown of second primary molars in an otherwise sound dentition should arouse suspicion of a diagnosis of HSPM (**Figures 4a** and **4b**). Likewise, breakdown of the distal surface of a second primary molar before the FPM has erupted (i.e., in the absence of a contact point) is atypical for caries and more likely to suggest HSPM (**Figures 4a** and **4b**). The use of bitewing radiographs to identify interproximal carious lesions is very useful in distinguishing a diagnosis. A vertical bitewing technique may be easier for the child in the primary dentition stage (**Figures 4b** and **5b**).



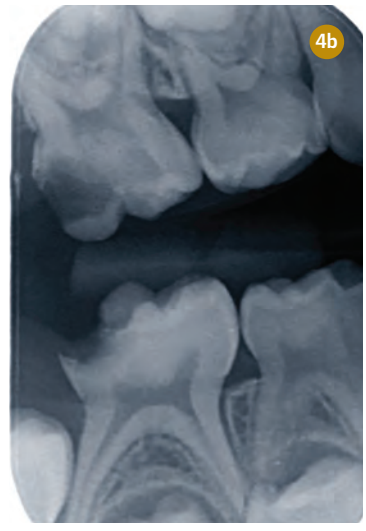
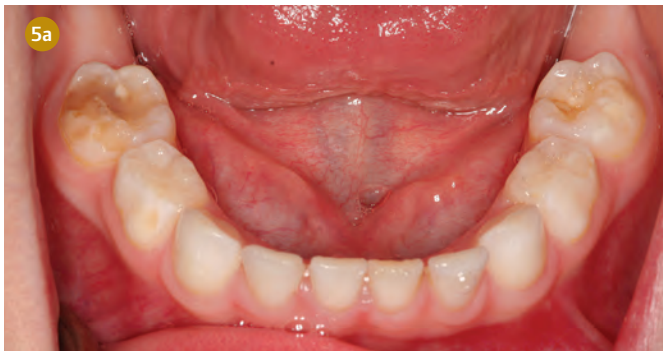


FIGURE 4a: PEB and severe caries affecting 75 and 85, in an otherwise sound dentition.

FIGURE 4b: Right vertical bitewing of patient in Figure 4a. Note first primary molars appear caries free.



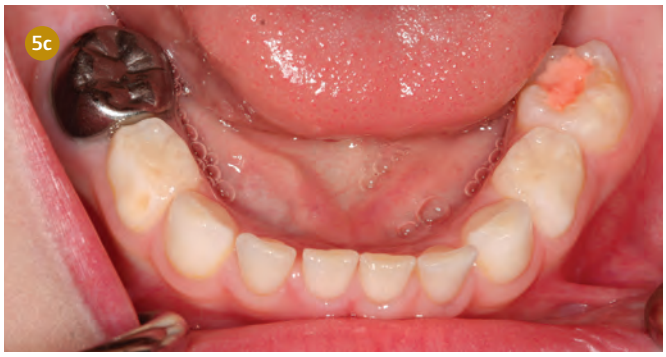


FIGURE 5c: Stainless steel crown placed using Hall technique on 85. FS placed on occlusal of 75 using GIC (Fuji triage) to prevent PEB.

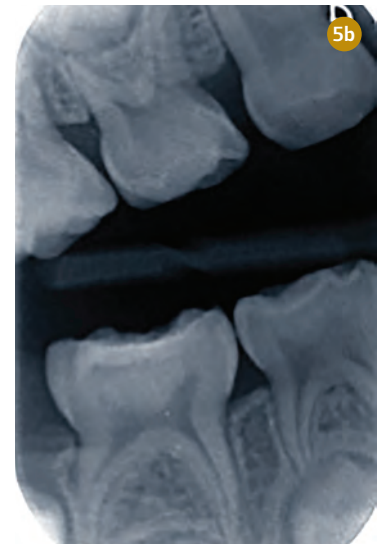


FIGURE 5a: HSPM affecting 75 and 85 with PEB affecting 85. Note the asymmetrical distribution of HSPM. Tooth 85 has been temporised occlusally with a well-placed tooth-coloured RMGIC. Note 74 and 84 are intact.

FIGURE 5b: Right vertical bitewing of patient in Figure 5a following caries control of 85 with RMGIC, taken prior to SSC placement. Note there are no radiographic signs of pulpal pathology.

Management of HSPM

The principles of managing HSPM are similar to those of managing MIH. William *et al*. (2006) suggested a useful six-step management plan for MIH,[23] which can be extrapolated as an overall management strategy for HSPM (**Table 2**).

Preventive

Children with HSPM should be managed using best practice guidelines for those at high caries risk.[24,25] Regular visits give the opportunity to educate parents about both HSPM and the potential implications for the FPMs. Usual high caries risk preventive advice should be delivered at each visit, including dietary counselling and oral hygiene instruction. Parents must assist in brushing their child's teeth twice daily with toothpaste containing 1,000-1,450ppm fluoride.[25] Patients should receive biannual fluoride varnish (22,600ppm) application[24,25] to high-risk sites. Fissure sealants using either resin, glass ionomer cement (GIC) (**Figure 5c**) or resin-modified glass ionomer cement (RMGIC) should be placed before enamel breakdown occurs.[7] Co-operation may be limited in younger patients, so prevention of enamel breakdown is paramount to minimise the need for invasive treatment requiring local anaesthesia.

Operative

If enamel breakdown has occurred, vital primary molars can be stabilised with atraumatic restorative techniques such as a well-placed RMGIC (**Figure 5a**). This type of interim therapeutic restoration is very useful for caries control in children, especially young children.[26] Silver diamine fluoride (SDF) could also be used to arrest caries, but only if there is cavitation and exposed dentine, with no signs of pulpal pathology. SDF has been shown to be an effective and inexpensive method of arresting caries in primary teeth; however, permanent dark discolouration of the carious dentine results.[27] Contemporary guidelines for placement of interim therapeutic restorations and for SDF application are available from the American Academy of Pediatric Dentistry.[26,27]

Composite resin could be used to restore small defects limited to one or two surfaces in HSPM based on their successful use in MIH molars.[7] Difficulties in bonding to hypomineralised enamel in HSPM is likely to be comparable to MIH,[7] so placement under ideal conditions using rubber dam is recommended. However, the use of conventional intracoronal restorations is not always successful due to the atypical location of the defects in HSPM, so full coverage with stainless steel crowns (SSCs) may be more predictable. As conventional SSC preparation using local anaesthesia requires significant co-operation from a young child, the Hall technique[28] may be a useful alternative. In this technique, SSCs are placed without caries removal or local anaesthetic so it is

TABLE 2: Management plan for HSPM (adapted from William et al.).[23]

1. **Risk identification**	Review medical history including prenatal, perinatal, postnatal and infancy period up to age one
2. **Early diagnosis**	Examine teeth as soon as they erupt
3. **Remineralisation and densensitisation**	Dietary counselling; assisted brushing with fluoride toothpaste (1,000-1,450ppm); professionally applied fluoride varnish (22,600ppm F)
4. **Prevention of caries and PEB**	Fissure sealants (GIC, RMGIC or resin); SDF
5. **Restorations or extractions**	RMGIC; composite resin; Hall SSCs; conventional SSCs; extraction
6. **Maintenance**	Regular review (vigilance during eruption of first permanent molars)

much easier for the child to tolerate.[28] Using the Hall technique, SSCs can be placed on second primary molars even before eruption of FPMs[28] (**Figure 5c**). This is a valuable and relatively simple treatment option, assuming any signs of irreversible pulpitis or pulp necrosis have been excluded both clinically and radiographically (**Figure 5b**). A user's manual describing this technique is available.[28]

Once the second primary molars become severely affected or symptomatic, extraction may be the only feasible option. Very often this procedure will necessitate a general anaesthetic due to the young age of the child. While early loss of any primary tooth is undesirable, loss of the second primary molar is particularly unfavourable for the developing occlusion.[29] The subsequent mesial tipping and migration of the FPM[29] results in space loss for the developing second premolar. The earlier the second primary molar is lost, the greater the opportunity for unfavourable drifting of the FPM[29] and future orthodontic disruption.

Maintenance

Children with HSPM are more likely to have caries and poor oral hygiene compared to those without,[30] so regular review to reiterate preventive advice is key. Recall intervals should not exceed four months for these high-risk children, as hypomineralised enamel can deteriorate rapidly.

Conclusion

HSPM is an important diagnosis, which is often overlooked as typical ECC. Dental teams who work with children should be familiar with the signs of HSPM because these children are at high risk of caries, and are more likely to develop MIH. Once identified, high caries risk preventive strategies are essential and practitioners should increase vigilance during eruption of the FPMs. The high reported prevalence of HSPM supports the case for earlier dental visits for all children, to minimise development of future problems and to maximise its potential predictive capacity for MIH.

There is a great need for further prospective studies comparing the prevalence of HSPM and MIH to expand our knowledge of their association.[19] Future research should utilise a standardised protocol as described by Elfrink, to enable comparability of studies from around the world.[19]

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CPD questions

To claim CPD points, go to the MEMBERS' SECTION of www.dentist.ie and answer the following questions:

1. Which of the following best describes the enamel defect in HSPM?

- ○ A: A quantitative defect with demarcated enamel opacities
- ○ B: A quantitative defect with diffuse enamel opacities
- ○ C: A qualitative defect with demarcated enamel opacities
- ○ D: A qualitative defect with diffuse enamel opacities

2. The typical clinical presentation of HSPM is best described by which one of the following?

- ○ A: Chronological hypoplasia along the occlusal and buccal surfaces of the second primary molar
- ○ B: Symmetrical demarcated opacities along the cervical margin of the second primary molar
- ○ C: Asymmetrical demarcated enamel opacities on the occlusal and buccal surfaces of the second primary molar
- ○ D: Demineralisation along the gingival margin of the first and second primary molar

3. Which of the following is incorrect regarding HSPM?

- ○ A: The absence of HSPM excludes the possibility of future MIH
- ○ B: Identification of HSPM prior to eruption of the first permanent molars can be considered a risk factor for MIH
- ○ C: Hypomineralisation is an important risk factor for caries in the primary dentition
- ○ D: Mild HSPM may be at higher odds to develop MIH than severe presentations

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Extraction of a severely impacted mandibular third molar using a sagittal split osteotomy – a case report

Abstract

Statement of the problem: Mandibular third molar tooth impaction is a frequently encountered pathological phenomenon in oral and maxillofacial surgery. Deeply impacted mandibular third molars require extensive bone removal to facilitate extraction. Sagittal split osteotomies provide an alternative treatment option, which can preserve bone and reduce the risk of pathological or iatrogenic jaw fracture in high-risk cases.

Purpose of the review: Clinical awareness of alternative extraction techniques is fundamental to the attainment of optimal patient outcomes. This case report provides an overview of the indications, risks, procedure and outcomes of the sagittal split osteotomy as a technique for the removal of a deeply impacted mandibular third molar.

Method: A case report of surgical removal of an impacted third molar and associated dentigerous cyst by sagittal split is presented. Patient consent was obtained prior to surgery. The chart was reviewed, and clinical information gathered and compiled into a case report. A review of the literature was then carried out to compare the technique presented with similar cases.

Conclusion: This case report highlights the value of sagittal split osteotomy for the removal of deeply impacted mandibular third molars. As part of informed consent, clinicians should consider the sagittal split osteotomy as an alternative treatment option for patients with a high risk of mandibular fracture.

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Case report

Clinical presentation

A 47-year-old woman presented to the Oral and Maxillofacial Surgery (OMFS) Department at the Dublin Dental University Hospital (DDUH) following referral from her general dental practitioner (GDP) regarding a cystic lesion associated with a displaced mandibular third molar. On initial presentation, the patient was complaining of a "lump" along the lower border of her right mandible, which she believed to be a swollen gland. The patient was not complaining of any pain from the site but did, however, note the presence of purulent discharge intra-orally, resulting in a foul taste and smell.

Clinical examination revealed a palpable lump at the lower border of the right mandible, which was neither painful nor mobile. She had no asymmetry, swelling, lymphadenopathy or altered sensation in the region. Intra-orally, the patient was partially dentate with retained roots and caries. The lower right second molar was found to be vital on testing with Endo-Frost.

Radiographically, the lower right third molar was vertically impacted with its apex extending below the lower border of the mandible. The orthopantomograph (OPG) also revealed a large radiolucency from the cementoenamel junction (CEJ) of the tooth, encompassing the crown. The extent of the radiolucent area was significant, as shown in **Figure 1**. Furthermore, there was some difficulty in evaluating the proximity of the lesion to the inferior alveolar nerve from the OPG alone.

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Table 1: Common differential diagnoses of radiolucency associated with an impacted mandibular third molar.

Differential diagnoses	Features
Dentigerous cyst	▸ Epithelium-lined developmental odontogenic cyst enclosing the crown of an unerupted tooth at the cementoenamel junction ▸ Typically diagnosed in patients between 30 and 40 years of age ▸ Identifying the crown of a tooth projecting into the cystic cavity is pathognomonic
Keratocystic odontogenic tumour (KCOT)	▸ Characteristic lining of parakeratinised stratified squamous epithelium ▸ Tend to grow in an anteroposterior direction within the jawbone without causing considerable expansion ▸ The lesion is multiloculated, often with daughter cysts that extend to the surrounding bone; therefore, high recurrence rate after resection
Ameloblastoma	▸ Neoplasm of odontogenic epithelium, principally of enamel organ-type tissue that has not undergone differentiation to the point of hard tissue formation. The slow growth of the tumour can lead to significant expansion of the mandible ▸ Classified as unicystic, multicystic or solid, and histologically can be plexiform or follicular ▸ The expansile, radiolucent tumour can be unilocular or multilocular, with a characteristic 'soap bubble-like' appearance ▸ Erosion of the roots of adjacent teeth is unique to ameloblastoma and indicates the aggressive behaviour of the tumour ▸ Patients typically present in the third to fifth decades of life with a slow-growing, painless mass

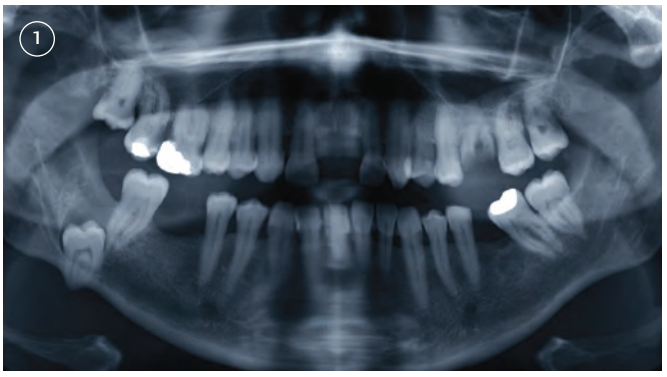


FIGURE 1: Baseline orthopantomograph showing displaced tooth 48 and associated radiolucency.

Differential diagnosis

At presentation the most common differential diagnoses for consideration included: a vertically impacted lower right third molar with associated dentigerous cyst; a keratocystic odontogenic tumour; or, an ameloblastoma (**Table 1**).

Investigations

A biopsy of the radiolucent area was planned in order to gain a definitive diagnosis and enable further treatment planning. In addition to this, a cone-beam computed tomography (CBCT) scan was arranged to more accurately determine the relationship of both tooth and lesion to adjacent anatomic structures.

The CBCT displayed the buccal location of the inferior alveolar nerve with thinning of the lingual plate and a superior location of the cyst (**Figures 2** and **3**). It also identified the proximity of the roots of the lower right second molar to the crown of the lower right third molar (**Figure 4a** and **4b**).

Management

The diagnostic biopsy of the site was carried out under local anaesthetic with

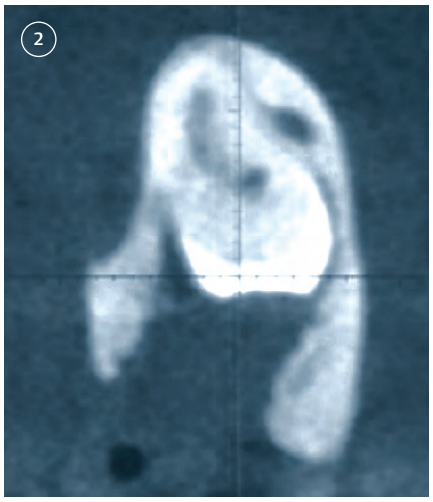


FIGURE 2: Coronal section of CBCT showing the proximity of the inferior alveolar nerve to the displaced wisdom tooth (located buccal to the tooth) and the cyst (located superior to the tooth from the CEJ).

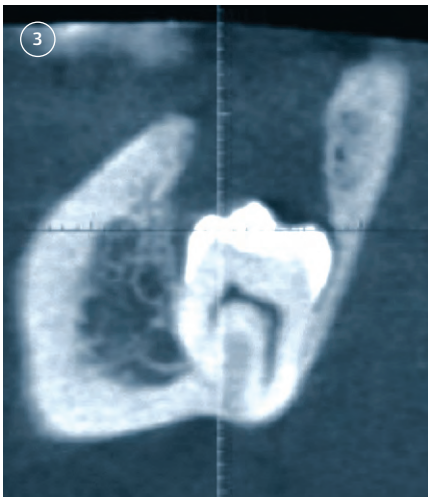


FIGURE 3: Sagittal section of CBCT showing the wisdom tooth to be placed lingually, with thinning of lingual bone in this area. Again, the cyst is visible superior to the tooth, and the inferior alveolar nerve is visible buccal to the tooth.

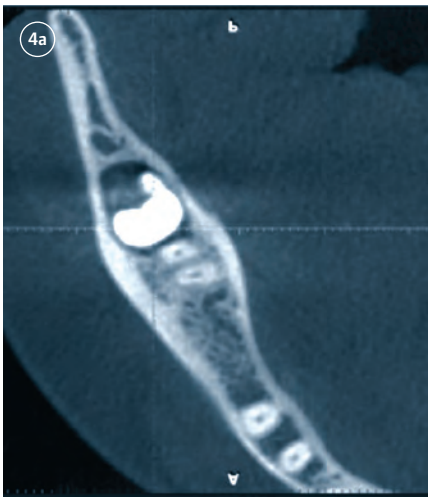


FIGURE 4a: Axial section of CBCT showing the crown of the wisdom tooth to be located adjacent to the tips of the roots of the second molar.

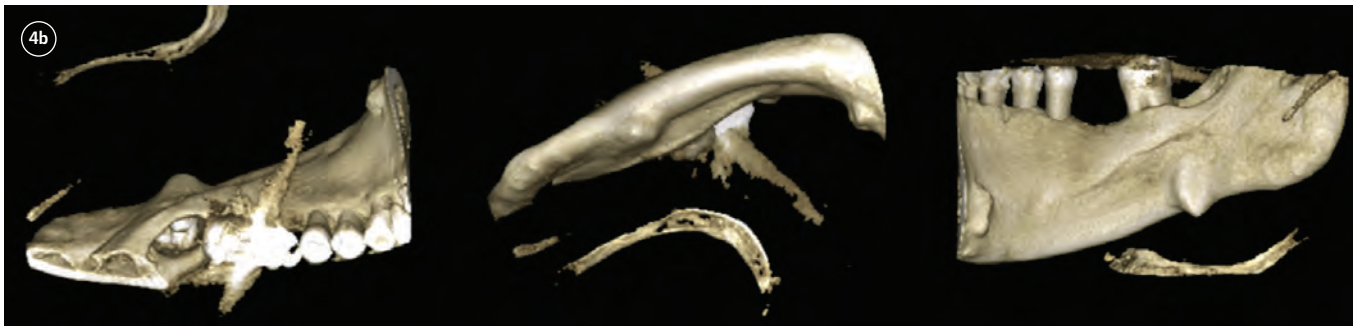


FIGURE 4b: 3D CBCT images in three views.

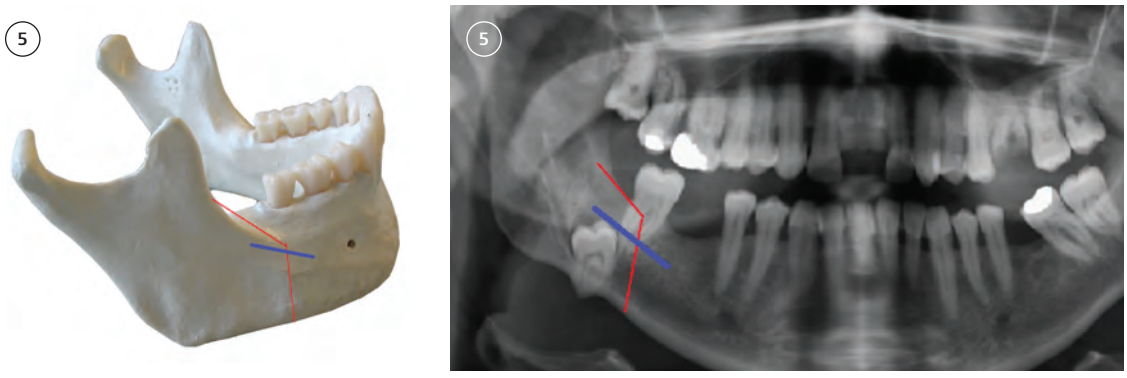


FIGURE 5: Sagittal split bony incisions (red) and plating (blue).

Table 2: Treatment modalities for removal of displaced third molars.

APPROACH	ADVANTAGES	DISADVANTAGES
No treatment	• Least invasive approach	• Potential for life-threatening infection at the site • Patient was aggravated by purulent discharge and the extra-oral lump • Progression of the lesion with possible pathological fracture of the mandible
Conventional approach (buccal mucoperiosteal flap) with extraction or decoronation	• Less invasive than extra-oral or mandibular sagittal split approaches	• Risk of pathological or iatrogenic fracture of the mandible by excessive bone removal • Poor access to surgical site • Increased risk of damage to the inferior alveolar nerve due to poor access • Technically difficult
Cyst marsupialisation	• Less invasive than extra-oral or mandibular sagittal split approaches • Minimal risk of damage to the inferior alveolar nerve • Potential to apply traction to the impacted tooth into a position that allows conventional surgical extraction	• Requires maintenance, regular appointments, and long-term follow-up • Source of the problem, i.e., the impacted tooth, remains
Extra-oral approach	• Good access to site • Relatively lower risk of damage to inferior alveolar nerve due to good visualisation	• Risk of damage to marginal mandibular branch of the facial nerve, resulting in drooping of the lower lip and face • Extra-oral scar postoperatively
Mandibular sagittal split osteotomy	• Allows visualisation of the inferior alveolar nerve, resulting in a relatively lower risk of damage • Allows good access to the surgical site • Minimal scarring, with no extra-oral scarring • Minimal risk of damage to the marginal mandibular branch of the facial nerve	• Risk of damage to inferior alveolar nerve • Risk of 'bad split' • Possible devitalisation of adjacent teeth • Operator skill dependent • Possible malocclusion postoperatively if incorrect realignment

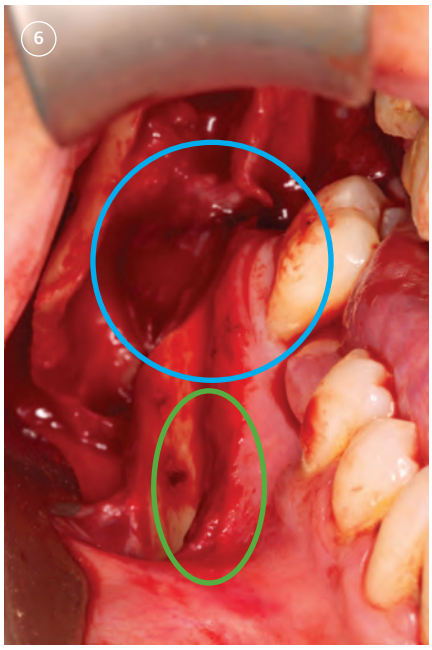
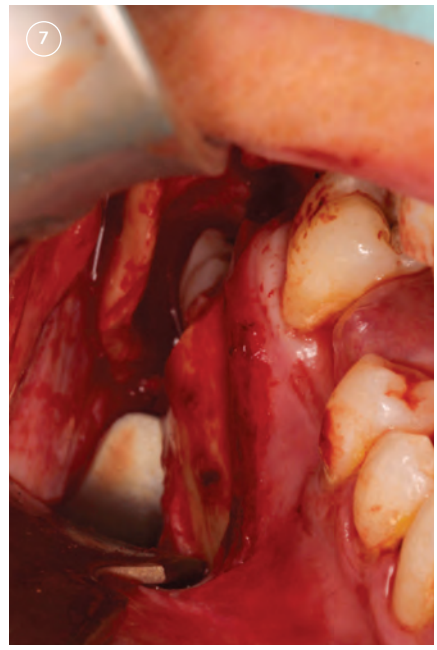
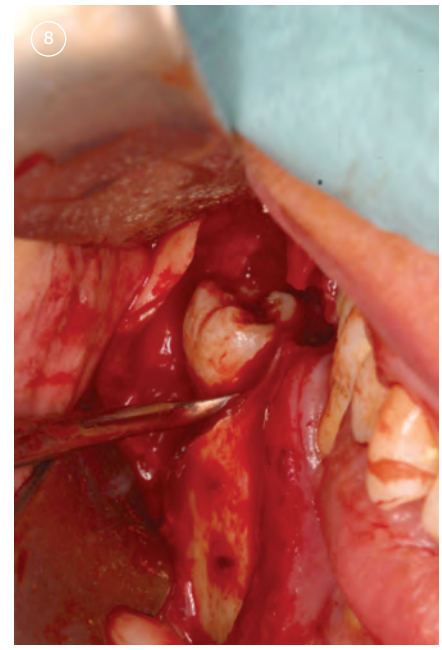
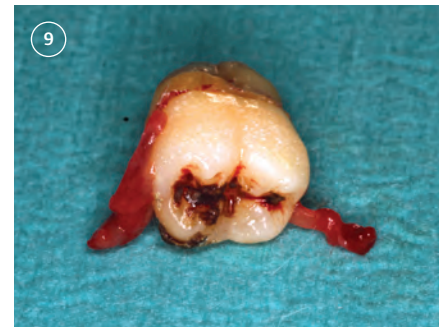


FIGURE 6: Sagittal split with cyst lining circled in blue and screw perforations circled in green.





FIGURES 7, 8 and 9: The tooth before elevation, during elevation and following removal (with cyst lining attached at the CEJ).



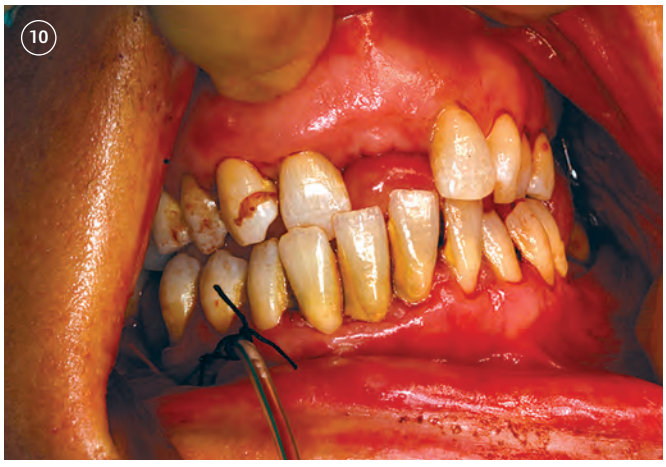


FIGURE 10: The patient's occlusion was confirmed prior to final closure.

intravenous conscious sedation. An envelope flap was raised with distal relieving incision, allowing sufficient access to the site. A small amount of buccal bone was removed and samples of the cyst lining and cyst contents were sent for histological examination.

The histology report confirmed a dentigerous cyst. As the patient was symptomatic, it was decided to surgically remove the tooth and cyst. However, given the extent of the cyst, the risks to the patient were significant, including possible fracture of the mandible and damage to the inferior alveolar nerve. In order to provide adequate informed consent, a number of treatment options were discussed with the patient (**Table 2**). Taking into consideration the risks and benefits of each technique, the patient opted for removal of the tooth and cyst using the sagittal split approach under general anaesthetic (GA).

Under GA, a full thickness mucoperiosteal flap was raised to allow access to bone. The initial sagittal split osteotomy cut was made and a four-hole, two-spaced plate was sited (**Figure 5**). Four 6mm screws were then removed and the split was completed. This measure ensured that the plates could accurately re-approximate the split once the procedure was done. Following this, the sagittal split was completed, thus separating the two segments of the mandible.

On separation of the two segments, the cyst lining and associated wisdom tooth were readily visible (**Figure 6**).

Once access and visualisation was obtained, the cyst was enucleated and sent for histological evaluation. The tooth was then elevated with a curved Warwick James instrument, resulting in its complete and intact removal (**Figures 7**, **8** and **9**). It is worth noting at this stage that the inferior alveolar nerve was visible inferior to the surgical site and appeared to be intact prior to closure.

With both the tooth and the cyst removed, the segments were realigned and held in handheld occlusion. The plate and screws were resited. Before final tightening of the miniplate was completed, the occlusion was re-evaluated to ensure that no changes in the patient's occlusion had been created (**Figure 10**). Finally, the soft tissues were sutured with 3/0 Vicryl Rapide to allow healing of the mucosa by primary intention. A 'grenade' drain was also placed to reduce haematoma formation. This drain was removed the following morning at review. The patient was prescribed co-amoxiclav (625mg three times daily for

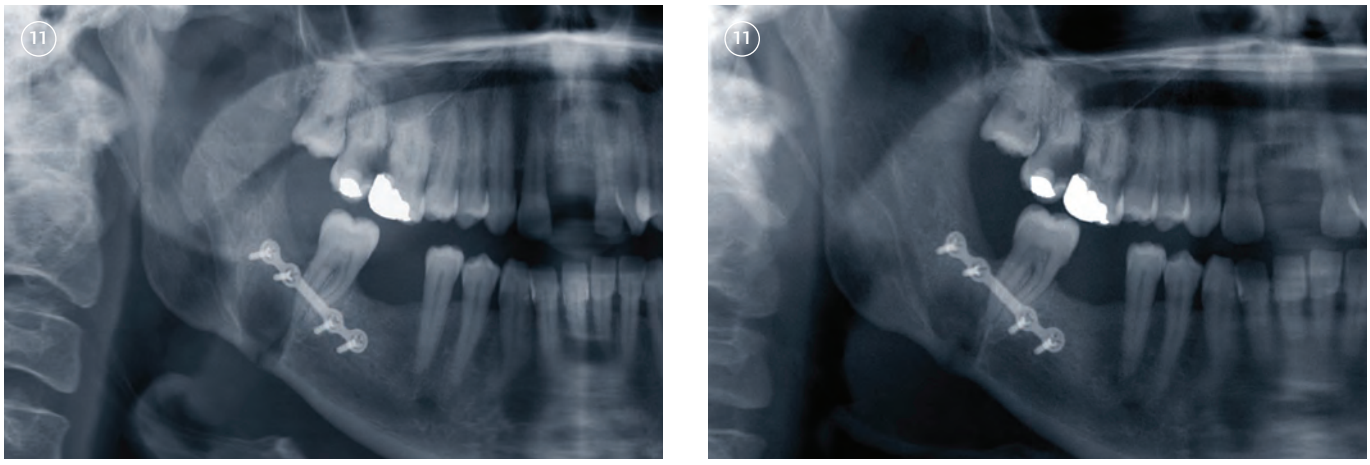


FIGURE 11: Postoperative OPGs at three-month and six-month reviews, respectively.

five days) and given postoperative instructions, with particular emphasis on a soft diet until healing of the surgical site occurred.

The patient was reviewed at one week and 12 weeks after the procedure. At one-week review, the patient reported postoperative numbness on the right hand side. However, at 12-week review, the patient reported the return of some sensation and tingling of the lip and chin. At six-month review, the patient regained some sensation in the lower lip but was still complaining of a 'pins and needles' sensation. It is hoped that this numbness will resolve entirely at further review, as often occurs following sagittal split procedures. The improvement in the patient's sensation at 12 weeks is encouraging, and indicative that healing of the nerve has commenced. The patient noted at review that her occlusion appeared and felt unchanged. A hemi-OPG was taken at 12 weeks and at six months, which showed good positioning of the plate and some bony infill at the site (**Figure 11**). Furthermore, at subsequent appointments it is expected that additional bony infill at the site where the tooth and cyst were previously situated will be visible radiographically.

Discussion

This case report highlights an alternative treatment option for removal of a lower right third molar. Removal of third molars is among the most frequently undertaken procedures in oral and maxillofacial surgery (Coulthard *et al*., 2014). However, the technique suggested in this case report is undertaken far less frequently, as more conservative measures are usually sufficient.

Various treatment options were considered for the management of this case, as outlined in **Table 2**. Ultimately, the sagittal split osteotomy was decided upon by the patient and clinicians as the most effective course of treatment.

Fracture of the mandible is a very rare complication of routine removal of third molars, with an approximate incidence of only 0.0049% (Libersa *et al*., 2002). Given the large size of the dentigerous cyst associated with the tooth in this case, it was felt that a conventional approach to the removal of this tooth would likely result in pathological or iatrogenic fracture of the mandible. Access to the tooth by conventional techniques would have required excessive bone removal, which is known to increase the risk for such fractures during treatment (Iizuka *et al*., 1997).

The use of a mandibular sagittal split osteotomy to remove displaced mandibular third molars has been documented to be a safe and predictable technique when good case selection is applied (Catherine and Scolozzi, 2017; Jones *et al*., 2004; Sencimen *et al*., 2009). Another technique that has been documented in the literature is the removal of a displaced tooth by an extra-oral approach. Pitfalls with this technique have historically included damage to the marginal mandibular branch of the facial nerve and the presence of an extraoral scar postoperatively (Jones *et al*., 2004). This leads to an unacceptably poor aesthetic result, potentially affecting both facial expression and facial aesthetics.

In this case, the impacted tooth was associated with the presence of a dentigerous cyst, which had first been biopsied under LA and conscious sedation to ensure the correct diagnosis before management was undertaken. In 2008, Wang *et al*. recorded the characteristics of 11 mandibular third molars that were displaced into the ramus region of the mandible. Although not well documented throughout the literature, approximately 72.7% of the displaced mandibular third molars reported in this study had an association with a cystic lesion. Furthermore, 67.5% of those teeth found to be associated with a cystic lesion transpired to have a diagnosis of dentigerous cyst on histologic evaluation (Wang *et al*., 2008). Our findings in this case are consistent with this consensus from the literature, as the final diagnosis of the cyst following complete removal was that of a dentigerous cyst.

The mandibular sagittal split osteotomy approach is not without shortcomings. The most significant of these is the risk of damage to the inferior alveolar nerve and the likelihood of postoperative numbness. There is extremely variable reporting on the incidence of inferior alveolar nerve injury post sagittal split osteotomy, varying from 1.3% to 18% apparent at operation, and from 9-85% postoperatively (Agbaje *et al*., 2015). The authors in this study concluded that the significant variation in incidence reported was due to lack of a standardised assessment and variation in reporting of the paraesthesia. Sagittal split osteotomy is a technique more frequently used in orthognathic surgery. Incidence of postoperative paraesthesia in orthognathic cases has been documented at 22-78% immediately following the procedure, and reduces to 5-25% of patients six months postoperatively (Yip and Korczak, 2001).

Conclusion

This case report highlights the value of sagittal split osteotomy for the removal of deeply impacted mandibular third molars. As part of informed consent, it should be considered as a treatment option for patients when the risk of jaw fracture is high.

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CPD questions

To claim CPD points, go to the MEMBERS' SECTION of www.dentist.ie and answer the following questions:

1. Dentigerous cysts arise from:

- ○ A: Reduced enamel epithelium
- ○ B: Epithelial rest of Malassez
- ○ C: Dental lamina

2. By definition, a dentigerous cyst occurs in association with:

- ○ A: An impacted tooth
- ○ B: An unerupted tooth
- ○ C: A deciduous tooth

3. The most common odontogenic cyst in the jaw is the:

- ○ A: Radicular cyst
- ○ B: Dentigerous cyst
- ○ C: Odontogenic keratocyst

IDA irish dental association CPD

Evolution of aesthetic dentistry

Blatz, M.B., Chiche, G., Bahat, O., Roblee, R., Coachman, C., Heymann, H.O.

One of the main goals of dental treatment is to mimic teeth and design smiles in a most natural and aesthetic manner, based on the individual and specific needs of the patient. Possibilities to reach that goal have significantly improved over the last decade through new and specific treatment modalities, steadily enhanced and more aesthetic dental materials, and novel techniques and technologies. This article gives an overview of the evolution of aesthetic dentistry over the past 100 years from a historical point of view, and highlights advances in the development of dental research and clinical interventions that have contributed to the science and art of aesthetic dentistry. Among the most noteworthy advancements over the past decade are: the establishment of universal aesthetic rules and guidelines based on the assessment of natural aesthetic parameters, anatomy, and physiognomy; the development of tooth whitening and advanced restorative as well as prosthetic materials and techniques, supported by the pioneering discovery of dental adhesion; the significant progress in orthodontics and periodontal as well as oral and maxillofacial surgery; and, most recently, the implementation of digital technologies in the three-dimensional planning and realisation of truly natural, individual, and aesthetic smiles. In the future, artificial intelligence and machine learning will likely lead to automation of aesthetic evaluation, smile design, and treatment planning processes.

Journal of Dental Research 2019; 98: 1,294-1,304.

Fracture resistance of additively manufactured zirconia crowns when cemented to implant supported zirconia abutments: an in vitro study

Zandinejad, A., Methani, M.M., Schneiderman, E.D., Revilla-Léon, M., Morton, D.

Purpose: To compare the fracture resistance of implant-supported milled zirconia, milled lithium disilicate, and additively manufactured zirconia crowns.
Materials and methods: Maxillary cast with a dental implant replacing right second bicuspid was obtained. Custom abutments and full-contour crowns for milled zirconia, milled lithium disilicate, and additively manufactured zirconia crowns (n=10/group) were digitally designed and fabricated. The crowns were cemented to implant-supported zirconia abutments and mounted onto polyurethane blocks. Fracture resistance was determined by vertical force application using a universal testing machine at a crosshead speed of 2mm/minute. The Kruskal-Wallis test was used to analyse data and failure mode was determined for all the groups.
Results: Milled zirconia crowns demonstrated the highest median fracture resistance (1292±189 N), followed by milled lithium disilicate (1289±142 N) and additively manufactured zirconia (1243.5±265.5 N) crowns. Statistical analysis showed no significant differences in fracture resistance between the groups (p=0.4). All specimens fractured at the implant-abutment interface.
Conclusion: Additively manufactured zirconia crowns demonstrated similar fracture resistance to milled ceramic crowns, when cemented to implant-supported zirconia abutments. The results of this in vitro study signify the promising potential of additive manufacturing for the fabrication of all-ceramic zirconia crowns.

Journal of Prosthodontics 2019; 28: 893-897.

Overdenture prostheses with metal copings: a retrospective analysis of survival and prosthodontic complications

Chhabra, A., Chhabra, N., Jain, A., Kabi, D.

Purpose: To retrospectively evaluate complications associated with overdentures and abutment teeth restored with metal copings, including post-procedural and prosthetic problems; also to analyse the frequency and influencing factors associated with these problems.
Materials and methods: A total of 80 subjects (48 females, 32 males; mean age 62 years) wearing root-supported overdentures were enrolled in the study. All participants were thoroughly examined by a single examiner, and appropriate maintenance care was performed. The 80 subjects had 270

abutments, which were endodontically treated teeth. All 80 subjects were carefully interviewed, inspected, and evaluated for post-procedural and clinical problems with their overdentures for an observation period of up to five years. **Results:** Of the post-procedural problems evaluated, the most common problems were gingival inflammation (69%) and root caries (36%) because of poor oral hygiene (41%) and loss of metal copings (34%), followed by overdenture base fracture over abutment teeth (34%). Other post-procedural problems reported were loss of overdenture stability (23%), incidence of overdenture repair (20%), poor retention (18%), incidental finding of root fragments (unplanned) in the jaws (15%), and up to two grade net change in the mobility of overdenture abutments (8%). All prostheses were in use at the time of data collection and observation up to five years.
Conclusions: Overdenture therapy was satisfactory; however, post-procedural and prosthetic complications and aftercare maintenance must not be underestimated.

Journal of Prosthodontics 2019; 28: 876-882.

Epigenetic approaches to the treatment of dental pulp inflammation and repair: opportunities and obstacles

Kearney, M., Cooper, P.R., Smith, A.J., Duncan, H.F.

Concerns over the cost and destructive nature of dental treatment have led to the call for novel, minimally invasive, biologically based restorative solutions. For patients with toothache, this has resulted in a shift from invasive root canal treatment (RCT) toward more conservative vital pulp treatment (VPT) procedures, aimed to protect the pulp and harness its natural regenerative capacity. If the dental pulp is exposed, as long as the infection and inflammation can be controlled, conservative therapies can promote the formation of new tertiary dentine in a stem cell-led reparative process. Crucially, the volume and quality of new dentine is dependent on the material applied; however, currently available dental materials are limited by non-specific action, cytotoxicity and poor clinical handling. Looking to the future, an improved understanding of the cellular regulators of pulpal inflammation and associated repair mechanisms is critical to predict pulpal responses and devise novel treatment strategies. Epigenetic modifications of DNA-associated proteins and the influences of non-coding RNAs have been demonstrated to control the self-renewal of stem cell populations as well as regulate mineralised tissue development and repair. Notably, the stability of microRNAs and their relative ease of sampling from pulpal blood highlight their potential for application as diagnostic inflammatory biomarkers, while increased understanding of their actions will not only enhance our knowledge of pulpal disease and repair, but also identify novel molecular targets. The potential therapeutic application of epigenetic modifying agents, DNA methyltransferase inhibitors (DNMTi) and histone-deacetylase inhibitors (HDACi), have been shown to promote mineralisation and repair processes in dental pulp cell (DPC) populations, as well as induce the release of bioactive dentine matrix components. Consequently, HDACis and DNMTis have the potential to enhance tertiary dentinogenesis by influencing the cellular and tissue processes at low concentrations with minimal side effects, providing an opportunity to develop a topically placed, inexpensive, bio-inductive restorative material. The aim of this review is to highlight the potential role of epigenetic approaches in the treatment of the damaged dental pulp, considering the opportunities and obstacles, such as off-target effects and delivery mechanisms, for the therapeutic use of miRNA as an inflammatory biomarker or molecular target, before discussing the application of HDACi and DNMTi to the damaged pulp to stimulate repair.

Frontiers in Genetics 2018; 9: 311.

Quiz answers

Questions on page 294.

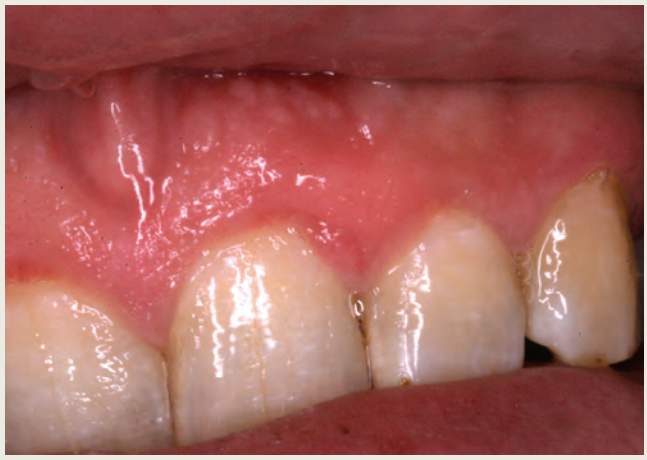

FIGURE 4.

1. C – Fibroepithelial polyp
   Results of histological analysis: benign fibroepithelial polyp with surface ulceration and dystrophic calcification and ossification.

2. Differential diagnosis:
   - mucocele;
   - giant cell fibroma;
   - solitary neurofibroma;
   - palisaded neuroma;
   - epulis fissuratum;
   - peripheral reactive lesion; or,
   - peripheral odontogenic lesion.

3. Treatment plan:
   - referral;
   - an excisional biopsy and gingivoplasty was performed under local anaesthesia using a microvascular #sm 67 blade and 7/0 seralene sutures; and,
   - review and post-op 2/52 (**Figure 4**).

SITUATIONS WANTED

Leinster/Midlands: registered specialist orthodontist available. Part-time, very experienced with strong work ethic. Excellent written and spoken English, plus additional language skills. Own car. Seeks position in specialist centre with good support staff. Contact Niall@innovativedental.ie.

Ambitious dentist with 15 years plus experience is looking for a part-time position in south Dublin and suburbs. Available on Saturdays. Replies to dentistaa@ymail.com.

SITUATIONS VACANT

Associates

Associate required in established private-only (no GMS) practice in Kilkenny/Carlow. Be part of a multidisciplinary team including orthodontist, hygienist, implantologist, oral surgeon and endodontist. Excellent backroom support. Cerec, in-house laboratory, scanner, CBCT. Please send CV to Bpm.gmedical@gmail.com.

Dental associate required to cover maternity leave in an established family practice in Killarney. Part-time role, starting January/February 2020. Apply with CV to info@gleesondental.ie.

Dental associate required for maternity leave from the start of January 2020. Part- or full-time hours available. Practice located in south Dublin. Please send a CV to info@merrionroaddental.ie.

Modern, busy, expanding multi-surgery practice in north east seeks enthusiastic associate for six-month maternity cover beginning the start of January 2020. Two and a half days per week. Fully computerised with digital x-rays. CVs to info@blackrockdentist.com.

Full-time associate dentist required for busy north Dublin practice (Dublin 5). Email CV to northcitydental@gmail.com.

Part-time associate required for a busy expanding Northside Clinic. Well-established and friendly practice with a good support team. Applications to recruitadentistdublin5@gmail.com.

Experienced associate required for busy practice in Tullamore, Co. Offaly. Part-time and flexible options considered. Modern computerised practice with excellent support staff. Strong book with a mix of private and public patients. CVs to careers@dentalcareireland.ie.

Experienced associate required part-time for vibrant, long-established, south Dublin private practice, to replace departing colleague. Please email sandyforddentist@gmail.com.

Experienced part-time associate wanted for busy practice in south Dublin, initially two days per week. Great support staff and fully computerised. Applications to info@dunlaoghairedental.ie.

Northeast one hour from Dublin. Full-/part-time experienced associate required in long-established seven-surgery award-winning multidisciplinary practice. Specialist orthodontist, specialist oral surgeon, full-time hygienist. Crown and bridge experience necessary. Applications to drcolmsmith@gmail.com.

Ennis/Limerick – Associate wanted to work full-time in two practices. Both computerised with friendly and supportive staff. Email CVs to gbrowne.ennis@gmail.com.

Experienced associate required for two days in a busy, long-established practice, Dublin 9. Friendly and supportive staff. Start January 2020. Email CV to dentalassociatea@gmail.com.

Associate required for two days/week in a busy, computerised general dental practice in Ballincollig, Co. Cork. Mondays and Fridays with view of adding time. Please email CVs to associate4KDP@gmail.com.

Part-time dental associate required for a busy friendly practice in Co. Kerry to replace a departing colleague three days a week (Wednesday, Thursday and Friday). Excellent experienced staff. Applicant must have experience and a genuine interest. Applications to laurie8@eircom.net.

Part-time associate (Thursday, Friday and Saturday) wanted to join a long-established dental practice in Shankill, Dublin. Email CV to shankillvillagedental@gmail.com.

Dental associate required for a well-established practice in Cavan Town. Please email on your CV to frances@railwaydentalsurgery.com.

Experienced associate required for busy practice in Meath. Full-time and part-time options considered. Modern computerised practice with excellent support staff. Located 30 minutes drive from M50. Strong established book and lots of new patients. Applications to careers@dentalcareireland.ie.

Part-time associate needed to join our happy, friendly and professional team in south Co. Dublin. Flexible hours, multidisciplinary practice. Applications to dublindentist@gmail.com.

Experienced, reliable dental associate required to work one to two days in general practice in Malahide, Co. Dublin. Please email CV to dentistjobmalahide@gmail.com.

Experienced associate required for an established practice in Dublin working with our multidisciplinary team including hygienists, implantologist, periodontist, oral surgeon, endodontist, and orthodontist. Cerec on-site. Apply with cover letter, CV and portfolio to helen@portobellodental.com.

Newly renovated practice with all the best "toys" is looking for a part-time highly motivated, experienced associate to join our award-winning team. Requirements include an evening surgery and some Saturdays. Send CV and portfolio to orthoapplications479@gmail.com.

Advertisements will only be accepted in writing via fax (01-295 0092), letter or email (liz@irishdentalassoc.ie). Non-members must pre-pay for advertisements, which must arrive no later than **Friday, January 24, 2020**. Classified ads placed in the *Journal* are also published on our website www.dentist.ie for 12 weeks. **Please note that all adverts are subject to VAT at 23%.**

Advert size	Members	Non-members
up to 25 words	€80	€160
26 to 40 words	€95	€190

The maximum number of words for classified ads is 40.
If the advert exceeds 40 words, then please contact:
Think Media, The Malthouse, 537 North Circular Road, Dublin 1.
Tel: 01-856 1166 Fax: 01-856 1169 Email: paul@thinkmedia.ie

Please note that all classified adverts MUST come under one of the following headings:

- Positions Wanted
- Positions Vacant
- Practices for Sale/To Let
- Practices Wanted
- Equipment for Sale/To Let

Classified adverts must not be of a commercial nature. Commercial adverts can be arranged by contacting Paul O'Grady at Think Media.

Part-time associate wanted (Tuesday, Wednesday, Friday) to cover six months maternity leave. We are a long-established, modern practice based in north Co. Dublin. Please email your CV to swordsdental@live.ie.

Part-time associate required for two to three days a week in modern general practice, based in the Midlands, with three surgeries, digital x-ray and OPG. Must be IDC registered. Applications to david@medaccount.ie.

Dublin – Flexible, experienced full-time associate for well-established, busy, two-surgery modern practice. Excellent equipment including CBCT. Knowledgeable support staff. Excellent figures. Good long-term remuneration for suitable candidate. Interest in cosmetic/aesthetics – large advantage. Email: niall@innovativedental.com.

Dentists

We are looking for an experienced dentist to join our team. Must be IDC registered. Part-time. Email CVs to contact@freedomdental.ie.

Enthusiastic dentist needed for a busy, modern, long-standing practice in Dublin 22. Initially two days per week, with a view to full-time. Five plus years' experience and interest in endodontics are preferred. Send CV to practicemanager221@gmail.com.

Full-time general dentist required for busy, friendly 12-surgery north Dublin practice. High earning potential in a fully computerised, modern practice with an orthodontist, endodontist, implantologist, dental technician, hygienists and OPG there to assist you. Please contact northdublindentalclinic@gmail.com.

Exciting opportunity for dentist and hygienist to join a busy modern established multi-surgery practice in Westmeath. Replacing departing colleagues. Full-time positions. Must be IDC registered. Please email your interest to westmeathclinic@gmail.com.

Busy, multi-surgery practice in Ballincollig, Cork requires experienced dentist to cover associate's maternity leave three to four days per week. January/Feburary 2020 to July 2020. Please email CV or queries to marian@corkdentalclinic.com.

Full-time dentist wanted. Wicklow, computerised with OPG, etc. Daily retainer and accommodation with reduced rates can be arranged but only those with a long-term view need apply. Please send CV to James.turner@centricdental.ie.

Exciting opportunity for an enthusiastic general dentist to join our team in Rathfarnham. Part-time and flexible options considered. Modern computerised practice with excellent support staff. Email management.kbmdental@gmail.com.

Experienced general dentist required for purpose-built dental surgery in Roscommon Town, well-established list. Excellent opportunity, low cost of living, large catchment area. Excellent support staff, modern equipment, digital x-rays, OPG, rotaries, apex locator, etc. Applications to dr.odonovan@alexandradental.ie.

We are looking for a friendly, enthusiastic, experienced general dentist part-time in Naas, Co. Kildare. Modern computerised practice with excellent support staff. Email dentalsurgeoncv@gmail.com.

Galway City Centre modern practice looking for qualified dentist full-time or part-time. Full book, all private practice, computerised, OPG, great patient list. Looking for a caring personable dentist. Please send email to galwaydentalpractice123@gmail.com.

Primary care setting – Dentists required for Dublin/Kildare/Wicklow/Laois/Offaly. Full-time or part-time. Email CV to unagaster@gmail.com or call Una on 087-917 4831.

A novel opportunity in southeast Ireland. Expense sharing opportunity. Autonomy. Replies from dentists/specialists. Contact Eoin newdentalpracticesolutions@gmail.com. Include CV.

Part-time dentist required Thursdays, Fridays, Saturdays starting January 2020. Experience essential, preferably qualified in facial aesthetics, 40 mins from Galway. Fantastic opportunity for right candidate. Applications to dentaljobmayo@gmail.com.

Looking for an enthusiastic dentist available for part-time maternity cover from January 2020 in a lovely private practice in south Dublin city. Please send us your CV by email to dentistdublin10@gmail.com.

Drogheda – Smiles Dental (part of Bupa Dental Care) are looking for a passionate dentist to join our state of the art, well-established practice in Drogheda, Co. Louth. Position offers established book and five days per week. CVs to Joanne.bonfield@smiles.co.uk.

Limerick – Smiles Dental (part of Bupa Dental Care) are looking for a passionate dentist to join our private, state of the art, well-established practice in Limerick. Practice offers established list and five days per week. CVs to Joanne.bonfield@smiles.co.uk.

Full-time dentist. Wicklow. Excellent support staff and equipment. Busy I/O cameras OPG Surg motors I/O scanners, etc. Training in Invisalign, aesthetic dentistry available. Excellent earnings for the right candidate. Please send CV. Full support from experienced colleagues. CVs to Info@rathdrumdental.ie.

Specialist/limited practice

Orthodontist for Galway City Centre practice. Modern practice fully equipped with lateral ceph and ortho instruments. We currently have two to three full days per week of private endodontic work. Excellent remuneration, flexible hours. Emails to galwaydentalpractice123@gmail.com.

Endodontist for Galway City Centre practice. Modern practice fully equipped with microscope and full endodontic materials. We have two to three full days weekly of private endodontic work. Excellent remuneration flexible hours. Extra endodontic training required. Please email galwaydentalpractice123@gmail.com.

Orthodontist required part- or full-time to take over established book. Wexford and Kildare region. Full backup provided in specialist practice. Please email for further details bpm.gmedical@gmail.com.

Opportunity for a specialist dentist to join a growing specialist practice in Galway city. Modern clinic, great location, parking, digital x-ray, OPG. Applications to patwbusiness@gmail.com.

Oral surgeon required to join our modern, friendly, country practice in Ballinrobe Co. Mayo (40 mins from Galway). Part-time, fully equipped surgery and support staff provided. Digital OPG, ceph, etc. Rates and days negotiable. Please email CV to obeirne1@hotmail.com.

Experienced orthodontist required to take over established book in Dublin. Flexible days, two to three days/month. Digital OPG, lat ceph. CVs to job@crowndental.ie.

Orthodontist – Smiles Dental is looking for a motivated specialist orthodontist to join our well-established, specialist orthodontic practice in Dundalk. Practice offers modern, state of the art working environment and full support teams. Initially two days Fridays and Saturdays. Contact joanne.bonfield@smiles.co.uk.

Orthodontist required to join established practice in Ballinrobe, Co. Mayo. (40 mins from Galway City). Modern three-surgery practice with digital radiography and lat. ceph. Relaxed, friendly country practice. Part-time, flexible days, hours, super rates to suit you. CVs to obeirne1@hotmail.com.

Orthodontist required part-time for busy multi-surgery Cork City practice. Applications to corkdentalassociate@gmail.com.

Orthodontist required to join established practice in Swords, north Dublin. Modern four-surgery practice with well-established orthodontic service and strong patient base. Typically, one day per week commitment with flexibility. CVs to careers@dentalcareireland.ie.

Endodontist required in Co. Wicklow to replace departing colleague. Busy practice with orthodontist, oral surgeon, prosthodontist and periodontist. Please email CV to louisdevereux@msn.com.

Oral surgeon, periodontist, endodontist, implant dentist – Smiles Dental is looking for specialists to join our well-established practice in Enniscorthy, Co. Wexford. Practice offers modern, state of the art working environment, full support team and great referral base. Enquiries to joanne.bonfield@smiles.co.uk.

Specialist orthodontists – Smiles Dental is looking for specialist orthodontists to join our well-established practices in Limerick and Galway. Practices offer modern, state of the art working environments and full support teams, also with great referral bases. CVs to joanne.bonfield@smiles.co.uk.

Specialist oral surgeon required for one session per month in Mullingar town centre. Session/referrals already established. Other specialists on site, endodontist, periodontist and orthodontist. Send CVs to referrals@familydentist.ie.

Locums

Dublin 17. Full-time locum required for well-established single-dentist practice. Friendly, enthusiastic, general dentist with two-year minimum experience required. Position starting immediately. For more information or to apply please send CV to jobs@meridianclinic.ie.

Dental nurses/managers/receptionists

Dental nurse required for a beautiful state of the art modern orthodontic and multidisciplinary practice in north Dublin. The ideal candidate will be given the opportunity to apply for the Orthodontic Therapy Diploma in the DDUH funded by the employer. Applications to jobs@ncdental.ie.

Experienced dental nurse required to join our team in Dublin 7. Positive attitude, friendly, team player, organised available to start from 2pm. Applications to davincidentalcv@gmail.com.

Dublin – practice manager. An enthusiastic, efficient, experienced 'front of house' to join our friendly team. Fully private dental surgery in north Dublin. Empathetic personality crucial. Computer proficient/team player a must. Excellent remuneration for suitable candidate. Forward applications to niall@innovativedental.com.

We are excited to announce an opening for an administrator to join the team. A rewarding career awaits someone who wants to be part of a practice. A dental nursing qualification is desired but not essential. Applications to gmncdental@outlook.com.

Glenville Dental is looking for two qualified dental nurses, one full-time, one part-time for immediate start. We are based in Dundrum, just a short walk from Dundrum Town Centre. Please reply to dr.moroney@dentalclinic.ie.

Position available for qualified or experienced dental nurse in fully private, digitalised Limerick City Centre practice. Excellent terms for right candidate. Apply with CV to dentalpostlimerick@gmail.com.

Ennis. Newly or recently qualified nurse required for busy practice. Full-time. Must be prepared to work on Saturdays and to undergo further training in sedation nursing. Email: barryhillery@ymail.com.

Dental nurse/receptionist required part-time for D12 dental practice. Please forward any information to no87dental@gmail.com.

Dental nurse required for southside Dental practice. Blackrock area. Working one day a week on Wednesdays. Contact Sheila at 086-338 6785.

Part-time and/or full-time dental nurse assistant required for D12 general dental practice, immediate start available. Please forward detail to no2dental@gmail.com or phone 087-981 0131.

Enthusiastic qualified dental nurse to join our friendly, caring and patient-focused practice in Dublin 18. Positive attitude, team player with fluent spoken/written English essential. Excellent rates of pay. CVs to dentalnursed18@gmail.com.

Rathfarnham Dental Practice are looking for a full-time dental nurse. We are a well-established, friendly, family practice. Will consider trainee. Applications to info@rathfarnhamdental.com.

Dental nurse/assistant required for D12 dental practice. The position may suit either full-time or part-time interests. There is the possibility of accommodation available with the position. Please call 087-981 0131 or forward CV to no2dental@gmail.com.

Full-time position available for a qualified dental nurse at a busy, modern practice in Limerick city. Please send CVs to bowedentalclinic@gmail.com.

Enthusiastic, qualified dental nurse required to join our friendly, patient-focused, expanding dental practice in the west Dublin area. Positive attitude, team player with fluent spoken/written English essential. Apply with CV westdublindental@gmail.com.

Dental nurse position available part-time/ full-time in modern friendly patient-focused Cork City Centre practice. Experience preferred but not essential. Suitable for enthusiastic person looking to join a friendly progressive dental team. Applications to dentalteam12a@gmail.com.

Experienced dental nurse required for a Friday and half-day Saturday at modern north Co. Dublin practice. Please send CVs to swordsdental@live.ie.

Full-time position available for a qualified dental nurse at a busy, modern practice in Edenderry, Co. Offaly. Experience using Exact software would be an advantage. Immediate start. Applications to Bernie@drronankennedy.ie.

Part-time dental nurse required for busy north Dublin practice. Must be enthusiastic, friendly and patient focused. CV to annamodonovan@gmail.com.

Hygienists/orthodontic therapists

Hygienist wanted for Clare area part-time, good remuneration. Contact jfssheehan@yahoo.ie.

Orthodontic therapist required for a full-time position in a beautiful state of the art modern orthodontic practice in Dublin. Extremely attractive working conditions and remuneration package with an annual salary of 60,000 euro plus per annum. Applications to hiringcontactemail@gmail.com.

Dental hygienist required in Co. Meath for two to three days per week. Full book with great patients ranging from periodontal to orthodontics. Excellent remuneration for the right candidate. Email your CV to dentalpracticemeath@gmail.com.

Enthusiastic and motivated hygienist required for our busy three-chair practice in lovely Carrick on Shannon, Co. Leitrim. Good remuneration. Please forward your CV to summerhilldentalgerry@gmail.com.

Swords – orthodontic therapist/part-time orthodontic therapist required for maternity cover contract. An average of 26 hours a week (Monday to Wednesday) cover starting from January 2020 to August 2020. Call in confidence on 01-810 7622 or email info@swordsortho.com.

Dental hygienist required to replace departing colleague one day per week in long-established family practice in Dundrum. Please reply to dr.moroney@dentalclinic.ie.

Exciting opportunity for hygienist and dentist to join a busy modern established multi-surgery practice in Westmeath. Replacing departing colleagues. Full-time positions. Must be IDC registered. Please email your interest to westmeathclinic@gmail.com.

PRACTICES FOR SALE/TO LET

Excellent opportunity for start-up dental practice with large existing practice base in Kilkenny City. Modern premises, free parking. Informal enquiries. Ger 083-040 96339

Mayo – two surgeries, leasehold low rent. Reasonable equipment/OPG. Very busy, long established, good footfall. Large new patient numbers. Well-established hygienist service. Good profits. Priced to sell. Area wide open. Excellent potential for growth. Email

Niall@innovativedental.com.

Fully equipped dental surgery. Previously in operation for 15 years. Location: Castleblayney, Co. Monaghan. Enquiries to condorp@eircom.net.

Fantastic dental clinic for sale on the Costa del Sol (Spain). Located in a very busy location. Low rental. Three dental chairs. Top equipped (CBCT, Kavo Surgical motor, centrifuge, etc.) Over 6,000 registered patients. Mostly international. Enquiries to davidt@progresodental.es.

Co. Tipperary – Active busy surgery – ready to go, room to expand, excellently equipped. Well established in the area/good footfall. Low GMS. Good core practice profits. Priced to sell. Large potential for growth. Principal available for transition. Email niall@innovativedental.com.

Kerry – well-established, very busy, full-time surgery – prime location. Experienced loyal staff. Excellently equipped including serviced second room. High patient numbers, low medical card. Immediate sale. Area wide open. Custom build freehold property. Contact niall@innovativedental.com.

Surgery space to let in a state of the art, modern, specialist practice on the south of Limerick City. Ideal location for an orthodontist, prosthodontist, or a periodontist with free patient parking. Enquires to dnapp999@gmail.com.

Killybegs, Co. Donegal: Private practice for sale – established 2011. Two fully equipped surgeries, great location, high patient volume. Enquiries to vajda.istvan@yahoo.com.

South Tipperary town practice for sale. Freehold or leasehold title. Three surgeries. Computerised. Great location with parking. Excellent opportunity. Flexible lead-in arrangements negotiable. Email seiredent@gmail.com.

Co. Kildare – Two surgeries, low rent, leasehold premises with large potential to expand. Well equipped, digitalised, computerised. Very busy, long established, Excellent footfall. Very low medical card. Transition phase possible. Good core practice profits, excellent potential for growth. Email niall@innovativedental.com.

Alicante, Spain. Well-established private dental practice. Large, English-speaking ex-pat patient base. Freehold with low overheads and low stress. Enquiries to molar23@gmail.com.

Mid-west practice for sale. Multi-surgery, long-established practice in a large catchment area, low overheads, high turnover and profits, full books. Great potential for growth. Principal retiring. Ideal for ambitious dentist or couple. Enquiries to midwestdentalpracticeforsale@gmail.com.

Dublin – south city centre. Long-established, busy three-surgery general practice, prime location. Ample room to expand, digitalised/computerised. Well equipped, fully private. Strong hygienist service. Excellent new patient numbers, large potential. Speedy sale, priced to sell. Email: niall@innovativedental.com.

South east major town. Long-established busy general practice with up to six surgeries. Fully equipped, inclusive of OPG. Large catchment area and room to expand further if required. Keenly priced. Email roger@horganbarrett.ie.

Recently renovated computerised single-handed sole surgery in small Midlands town. Private parking. Room to expand. Accommodation on site. Experienced trained staff. Rental or freehold purchase of property. Enquiries to dcdental66@gmail.com.

Co. Kerry – Busy surgery, almost fully private practice, ample room to expand. High new patient numbers, well located. Excellent staff, modern equipment. Priced to sell. Freehold/leasehold options. Email kerrypracticeforsale@gmail.com.

Equipment for sale

Complete contents of a two-surgery practice for sale. Chairs, lights, x-rays, cabinetry, small equipment, probes, forceps, materials, etc. Suit someone expanding or setting up. Dentist retiring. Contact 087-245 3850.

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Quality work

DR GERALD O'CONNOR is Chair of the IDA Quality and Patient Safety Committee and talks about its work in an increasing regulatory environment.

What led you to get involved with the IDA?

When I relocated from the UK with my family back to Ireland in 2013, I joined the IDA as a regular member and initially had little contact with the Association as I was busy establishing a new dental clinic. I was eventually approached by an outgoing member of the Quality and Patient Safety Committee (QPSC) and asked if I wanted to join.

What form did that involvement take and how did it progress?

After I was nominated and accepted by Council, I joined the QPSC. It was a very steep learning curve to be honest. I'd never sat on a committee before and knew little about the structure and corporate governance of an association as large and professional as the IDA. My overwhelming memory of my first meeting was the encyclopaedic knowledge around the table: Dr Eamon Croke, Dr Barney Murphy, Dr Jane Renehan, Dr Nick Armstrong. They were all very well versed in governance and compliance issues. Happily, everyone was patient and polite with this opinionated Corkman. The chair at the time was Dr John Adye-Curran, who was adroit at handling the newcomers with kid gloves and included us all in the Committee's activities. I never looked back from there.

This year I had the honour of being nominated as chair when Dr Adye-Curran stepped down. The new role has more responsibilities and requirements, but the dedicated and experienced Committee members we have require little guidance from the Chair.

Could you tell dentists about the QPS Committee?

It's there to help IDA members with compliance and regulatory issues applicable to dental surgeries, and to ensure and promote quality and safety for patients. It's a very simple brief, but it's wide ranging, spanning everything in the governance side of dentistry. With the extra regulatory environment we're coming into now via HIQA and the EPA, and with the new regulations coming down the line whenever the new dental act comes in, the QPSC is essentially there to guide dentists on how best to comply.

What has your participation in the Association meant to you?

In the UK, I lived through the rigour of the gradual increase in governance bureaucracy that culminated with the CQC [Care Quality Commission]. Obviously, good governance is a necessity and cornerstone of patient and staff welfare. What I saw over there, the onerous requirements that were foisted upon us, they kind of crushed morale. So when I returned to Ireland I swore that if I ever had the opportunity to prevent this repeating itself here, no matter how small the input, I felt duty bound to do so.

What is the single biggest benefit of membership in your opinion?

In the current era, we're plagued by excessive indemnity premiums, litigiousness, increasing regulatory environments, stiffer competition, higher overheads – having something like the IDA that you can call on for advice, guidance or even just a welcome ear in any of these areas to me is the biggest benefit.

What developments would you like to see in the Association?

I would like to see more involvement from the younger dentists – the grassroots of the profession. After all, it will be those younger dentists and students who will likely live with any changes we make the longest. Fortunately, the Council is presently working on a plan to be more youth inclusive, and encourage more active student and young dentist participation. So watch this space!

Gerald is originally from Blarney, Co. Cork. After graduating from UCC, he spent 15 years in the UK and owned a group of practices in Essex. In 2013, he and his partner, fellow dentist Dr Rosemarie Maguire, decided to move back to Wicklow and set up Killiney Dental in south Dublin.

Most of his family still resides in Cork, but he has siblings in Perth, Australia, and "as far afield as Cavan". He is currently undertaking postgraduate studies in endodontics with the University of Chester. Outside dentistry, he once had a wide range of interests from sport, music and books to creative writing. He now has three young children and, happily, the hobbies are no more.

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