

Journal of the Irish Dental Association

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about to start orthodontic treatment

new

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References: 1. Burwell A et al. J Clin Dent 2010; 21(Spec Iss): 66-71. 2. LaTorre G, Greenspan DC. J Clin Dent 2010; in press. 3. Effiant SE et al. J Mater Sci Mater Med 2002; 26(6):557-565. 4. Clark AE et al. J Dent Res 2002; 81 (Spec Iss A): 2182. 5. GSK data on file. 6. Du MQ et al. Am J Dent 2008; 21(4): 210-214. 7. Pradeep AR et al. J Periodontol 2010; 81(8): 1167-1113. 8. Sallan S et al. J Clin Dent 2010; in press. SENSODYNE® and the rings device are registered trademarks of the GlaxoSmithKline group of companies. Prepared November 2010. GSKCH/2011/0026.

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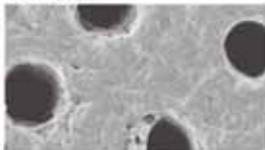
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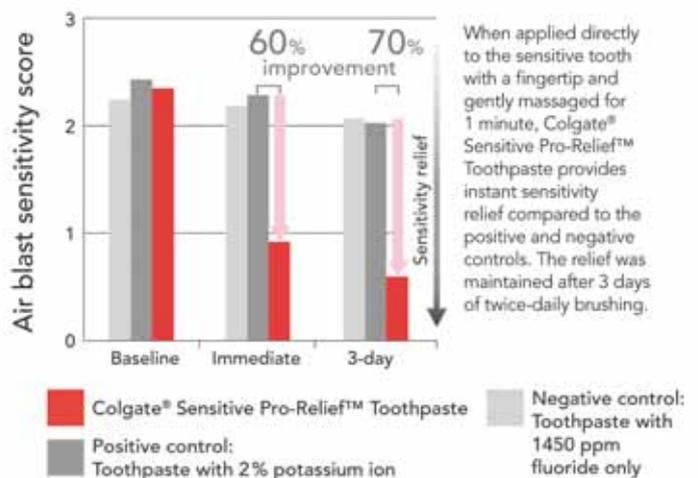
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References: 1. Petrou I et al. J Clin Dent. 2009;20(Spec Iss):23-31. 2. Cummins D et al. J Clin Dent. 2009; 20(Spec Iss):1-9. 3. Nathoo S et al. J Clin Dent. 2009;20(Spec Iss):123-130.

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Cutbacks beginning to bite

Findings of an IDA survey are evidence of the impact of Government decisions on our patients.

In this packed June/July edition, we welcome Dr Conor McAlister as the new President of the Irish Dental Association (p126) and wave a sad goodbye to one of our greatest colleagues, Dr Art McGann (p130). Dr McGann was the only person to hold the office of President of the Irish Dental Association twice – in 1970 and 2000.

It is notable that we have picture of Art from a 1966 edition of our *Journal* taken at that year's AGM in Galway, as this edition features a report from this year's AGM and Conference in Cavan. At that event, Chief Executive Fintan Hourihan revealed the findings of a survey of our members (p132), 82% of whom say that they have seen an increase in the number of patients presenting in pain. This, and many more of the findings such as the increase in patients presenting with gum disease, are both alarming and depressingly predictable.

Consequently, the meetings of the Association with the new Ministers Reilly and Burton are even more important than normal (p128). As a profession, we need to leverage every possible ounce of influence that we can, and to communicate to those in power the impact of the decisions that they make on the oral health of our patients.

Dr Tom Feeney explains the significance of the EU's Professional Qualifications Directive and the CED's position on its modernisation on p140. Interestingly, the CED advocates the incorporation of a minimum of 5,000 hours of full-time theoretical and practical study to qualify as a dentist into the Directive. This is to avoid the proliferation of weekend diplomas by private universities.

Good advice

Good decontamination practice is an essential ingredient for the proper operation of any dental surgery. Dr Nick Armstrong provides an invaluable step-by-step guide to good decontamination practice on pp142-144. It is based on the new paper on this topic from the Association's Quality and Safety Committee. The full paper will appear on the new website to be launched by the IDA shortly. In the meantime, I recommend that every dentist familiarise themselves with the contents of Dr Armstrong's article.

We have two excellent peer-reviewed papers. The first is a report of two cases of maxillary reconstruction using zygomatic implants (pp146-155); and the second is an audit of the caries status of patients about to start orthodontic treatment (pp156-160). These have been thoroughly researched and prepared, and as is appropriate, add to our knowledge.

Business is being carried out in a difficult climate for everyone at present. Hence our practice management articles and fact file are both useful and timely. Leanne Papaioannou, who spoke at a recent IDA meeting, is an expert in marketing and says that finding out what your patients want now is critical to surviving the recession (pp163-164).

As always, the *Journal* is the product of a great deal of hard work by many parties – to all of whom we are very grateful for their commitment and delivery. I trust you will gain as much from reading it as we did from bringing it to you.



Leo F. A. Stassen

Prof. Leo F. A. Stassen
Honorary Editor

Setting priorities for the year ahead

New President CONOR McALISTER acknowledges the challenges and sets out his priorities for the coming year.

It is a pleasure and indeed a great honour to write my first column as President for the *Journal of the Irish Dental Association*. Go raibh míle maith agaibh as an onóir mhór sin. Geallaim díbh go ndéanfaidh mé mo chroí dichill ar feadh na bliana.

Our recent conference in Cavan was a great success and I hope all of you who attended the event enjoyed it as much as I did. Our delegates ranged from 10-week-old Aideen Tuohy to 83-year-old Paddy King, a local dentist who was president of our Association 30 years ago. As usual it was the delegates who generated the buzz that made the conference so enjoyable. Sincere thanks to our speakers, from home and abroad, whose brief was to educate and entertain. All of them proved more than equal to the task. A personal favourite was Sean McGowan, whose story of his epic journey across the Atlantic inspired us all for the year ahead. Thank you to all who made the conference such a wonderful success, especially the organising committee, under the chairmanship of Rachel Doody, and our wonderful team at IDA House. A special word of thanks to our trade partners who continue to offer wonderful support, for which we are most grateful.

Good oral health is essential

Our profession and indeed our patients face many challenges in the year ahead. The recent draconian cuts to the funding of dental services in Ireland has resulted in a situation where the health, well being and dignity of our population are being threatened unnecessarily. In our recent meetings with the new Government, we endeavoured to make it clear that 'a person cannot have good general health without good oral health', as stated by former Surgeon General Koop in the USA. Denying our population access to the dentist, particularly those who can least afford it, is already resulting in significant cost to their health and well being.

During my year as President, I hope to prioritise the importance of early detection of mouth cancer. The idea is to build on the success of the free screening day, initiated by mouth cancer survivors, held at the Cork and Dublin Dental Hospitals last September. With this in mind, we launched Mouth Cancer Awareness Day 2011 at the recent conference. Participating dentists will offer free mouth cancer examinations at their practices and clinics, in a bid to increase awareness among the public and the profession, on Wednesday September 21, 2011. We were greatly encouraged by the response to this initiative, by delegates and the media, at the conference in Cavan. If you would like to participate on September 21, further

information will soon be available on the dedicated website – www.mouthcancerawareness.ie.

Loss of a special friend and colleague

Finally it would be remiss of me not to mention the recent passing of our colleague and friend, Art McGann. Art made a unique contribution to our Association. He was President in 1970 and again for the millennium year 2000. He attended 55 AGMs of the Irish Dental Association, most recently in Kilkenny in 2009. Our sincere sympathies go to his wife Anne, his son Garrett (recently Hon. Treas. IDA) and all the family. Ní bheidh a leithéad arís ann.

I look forward to meeting you and working with you in the year ahead.

Dr Conor McAlister
IDA President



Letters to the Editor

Dear Editor,

I refer to the recent editorial entitled 'New era' (*Journal of the Irish Dental Association* 2011; 57 (2): 3), and specifically to the editorial comment: "Dr Hendron employs neurolinguistic programming to assist patients who are experiencing anxiety. It is evident from the interview that there are aspects of her technique that all of us can use in our daily routines".

I feel this comment may be misconstrued as an endorsement of neurolinguistic programming (NLP) as a genuine treatment modality. NLP 'practitioners' have no clinical evidence base to support their extremely dubious claims and it is my understanding that NLP has been discredited by mental health professionals since the 1980s.

The treatment of anxious patients is a difficult area for all dental practitioners. We, as dentists, are rightly proud of our evidence-based dentistry and we should be exploring best practice for the treatment of the anxious patient. We should not allow our judgement to be clouded by 'quick fix' claims that cannot be reproduced or verified, and we have a duty of care to our patients to inform them of the validity of such questionable remedies.

Yours sincerely,

Dr Jonathan Middleton

BA (Mod) BDentSc

Editor's response

Dear Dr Middleton,

Thank you for your letter to the Editor, published above. The *Journal* endorses evidence-based dentistry and supports the principles of your letter, mindful of the fact that we must maintain an open receptive attitude to ideas.

The Editorial comment is to encourage readers to read the *Journal* and to consider all aspects of dental treatment but is certainly not to be seen as supporting one particular treatment.

Yours sincerely,

Professor Leo F A Stassen

Editor

Journal of the Irish Dental Association

Dear Editor,

Re: 'The cyclooxygenase-2 inhibitor celecoxib and alveolar osteitis' (*Journal of the Irish Dental Association* 2011; 57 (1): 50-53).

This was a very interesting article and, if validated in further studies, will make "dry socket" alveolar osteitis a relic of the past and remove a condition that is the bane of every dental practitioner.

We have been advised for years of the dangers of the overuse of antibiotics and to prescribe appropriately and carefully. In this study, the routine use of amoxicillin after every surgical procedure might be inappropriate, ineffective and potentially harmful.

I hasten to caution the use of cox2₁, with its history of cardiovascular events (even in small doses) and am not confident that their use had been proven to be the "socket grail" we all wish for.

Yours sincerely,

John F Hackett BDS MGDS RCSI

General Dental Practitioner

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Lining up to take on the Minister for Health with Association President Conor McAlister were (from left): Drs Ryan Hennessy, Sean O Seachnasaí, Jane Renehan, Anne Twomey, and James Turner, with Chief Executive Fintan Hourihan.



On their way to meet Minister Burton were Association President Conor McAlister with delegates (from left): Chief Executive Fintan Hourihan; and, Drs Anne Twomey and John Nolan.

New Government hears Association views

Meetings of Association leaders with the Minister for Social Protection, Joan Burton, and the Minister for Health, Dr James Reilly, were held at the end of May. Association views on all matters relating to oral health were related to both Ministers. There was a particular emphasis on the

damage done to the oral health of the most vulnerable in society by the cuts in the Dental Treatment Benefits Scheme at the meeting with Minister Burton. While a wide range of topics were also discussed with Minister Reilly, there was an emphasis on the need for a greater awareness of and need for improved oral health in Ireland.

Welcome for decision on fee display

The Association has welcomed the new Code of Practice from the Dental Council relating to the display of professional fees.

According to the new Code, dentists in general practice will have to display a single fee for a minimum range of specified treatments, such as an examination or an x-ray, as well as a range of fees for more complex treatments, such as restorations, surgical extractions, crowns, etc.

IDA Chief Executive Fintan Hourihan said a recent survey by the Consumer Association showed that real price competition existed across the country and this would become more apparent with fees on public display. "We advise patients to build a relationship with a local dentist and to focus on the quality of work done and the value it delivers rather than on superficial price comparisons," he said.

New CEO at DDUH



Pat O'Boyle has been appointed Chief Executive Officer of the Dublin Dental University Hospital. Pat was formerly Secretary/General Manager of the National Maternity Hospital in Holles Street, Dublin, and prior to that she was Director of HR & Operations at Cappagh National Orthopaedic Hospital.

She has a double Masters in Industrial Relations and Human Resources Management, is married to Michael and lives in Dublin. Pat replaces Brian Murray, who has retired following many years' service to the Dublin Dental University Hospital.



Quiz questions

Submitted by Dr Tom Feeney.

1. What is the lesion in the photograph?
2. What conditions give rise to localised gingival swellings?
3. What are the clinical features of this lesion?
4. How is diagnosis confirmed?
5. What is the treatment?

Answers on page 162

Volunteers needed for Ploughing Championships

For the second year running the IDA, in conjunction with Wrigleys, will attend the National Ploughing Championships, which take place this year from September 20-22 in Athy, Co. Kildare.

Over 250,000 people attended the Championships last year and the event proved to be very successful in terms of meeting with the public and communicating good oral healthcare messages. Volunteers are welcome – and needed! – to help out on the stand during this year's event. For further details, please contact Elaine at IDA House.

Trade thanked for support

On behalf of Council and the organising committee of the Annual Conference, the Association thanks all trade companies who supported the Trade Show at the Annual Conference in Cavan in May. Assistant Chief Executive Elaine Hughes said: "Your support and commitment to IDA events is much appreciated and we hope to see you in Killarney in 2012!"



New Editor-in-Chief of the Journal of Dentistry, Dr Chris Lynch (right), is congratulated by his predecessor, Professor Damien Walmsley.

New Editor-in-Chief at the *Journal of Dentistry*

Elsevier has announced that following a successful nine-year term as Editor-in-Chief of the *Journal of Dentistry*, Professor Damien Walmsley, University of Birmingham, is stepping down from this role. The new Editor-in-Chief is Dr Chris Lynch, Senior Lecturer and Honorary Consultant in Restorative Dentistry at Cardiff University. Dr Lynch graduated from University College Cork and was appointed to his current post at Cardiff University in 2006.

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Fintan Hourihan, IDA Chief Executive, and Elaine Hughes, Assistant Chief Executive, with (from left) John O'Connor, Declan Egan and Darragh Turley of Omega.

Income protection deal for members

The Association has appointed Omega Financial Management as the preferred suppliers of income protection to IDA members. As part of this exclusive deal for members, Omega is offering €150 towards your IDA membership subscription for those who sign up for income protection with them. Omega Financial Management acts on behalf

of Dentists' Provident, Dentists and General, Friends First, Irish Life, New Ireland and Aviva.

For all enquiries contact John O'Connor or Declan Egan at Omega quoting your IDA membership number.

Seal of approval for Wrigleys

The Wrigleys Extra range of chewing gum has recently been awarded accreditation by the IDA. Wrigleys already has accreditation for the Orbit Complete range. The Association is pleased to add the Extra range to its accreditation product mix.

Roll of Honour for Dr Donal Tully

At the AGM in Cavan recently, Dr Donal Tully was presented with the Roll of Honour of the Association. Donal was nominated by the South Eastern branch for the Roll of Honour and this was unanimously endorsed by Council and the AGM. Donal, a life-long member of the IDA, has worked tirelessly over the years on behalf of the Belarus Dental Charity that was started by the South Eastern Branch of the IDA.

Obituary: Art McGann

Neart in ár lámh, glaine in ár gcroí, is beart do rèir ár mbriathar
(Strength of hand, purity of heart and faithful to one's word)

Many people believe the words of Francis Bacon that "the genius, wit and spirit of a nation are discovered in its proverbs". The character and nature of the recently deceased Art McGann is aptly portrayed in the seanfhocail above.

Art was a highly respected and much-loved dentist and consummate professional who practised in Fairview, North Dublin, for 44 years. He had a love of many things in his life: his family, his faith, his keen sporting interests of golf and Dublin GAA, his grá for the Irish language, his commitment to St Vincent De Paul, and his profession. Art's righteousness and sense of propriety and his Christian values of honesty, kindness, truthfulness and charity were seen on a daily basis. A tireless dentist with a boundless curiosity, he was a pillar of the Irish Dental Association, which he passionately and fervently supported throughout his professional life. He was unique among his colleagues, being the only person to have served as President of the Irish Dental Association on two occasions – 1970 and 2000. He remained a strong advocate and firm believer of organised dentistry up to his illness.

Quality of care for his patients was paramount at all times; he had pride in his work and a dedication to the interests of his patients, with a sincere desire to help. This is illustrated by the fact that no less than 12 of his patients went on to qualify as dentists.

His keen professional interest is also illustrated by his spirit of public service, when he served on the dental regulatory authority, The Dental Board, in the '70s and '80s, and on the Dental Council in the



Art McGann attended a remarkable 55 AGMs of the Association. He was pictured in the Journal of the Irish Dental Association of August/September 1966 (Volume XII, number 4, p116) demonstrating at that year's AGM in Galway.

'90s, where his sharp intellect, his humanity of disposition and the logical manner in which he solved problems was always in the best interests of patients and the general public.

Throughout his life Art was inordinately generous with his time towards colleagues who sought out his help. Many people will recall with gratitude his loyalty, sense of humour, and his ability and willingness to impart solid sound advice. Everyone who knew him counted themselves privileged as Art was a truly wonderful and charitable friend.

The Association conveyed its deepest sympathies to his wife Anne, daughters Caroline and Maria, sons Art, Timmy and Garrett, his sister Brid, and his 10 grandchildren.

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IDA President, Conor McAlister (second right) with his Guests of Honour at the Association's Gala Dinner in Cavan. From left: Dental Council of Ireland President, Dr Eamon Croke; the President of the Northern Ireland Branch of the British Dental Association, Dr Ed Levingston; and President of the British Dental Association, Dr Amarjit Gill.

Patients presenting in pain and rise in gum disease

The Association's Annual Conference in Cavan was a whirlwind of activity - both business and social. Among the highlights was the release of a survey of dentists showing that the dental health of Irish people has seriously worsened due to cutbacks to the two main dental schemes.

Details of the survey were presented to the annual conference in Cavan by Chief Executive Fintan Hourihan (pictured above). It showed that 82% of dentists report an increase in patients presenting in pain, while 84% say they have seen an increase in gum disease. Three-quarters of respondents say that more patients are presenting with loose teeth, while nine out of ten dentists say that they are extracting more teeth as a result of the cutbacks.

Fintan said the survey showed that due to a mixture of official neglect and ongoing cutbacks, Irish dental care is in a state of emergency and requires urgent assistance.

"It does not surprise us that over 70% of respondents said that patients are frustrated and angry when they learn of the cutbacks to the medical card scheme (DTSS) and the PRSI scheme. Two-thirds of dentists say they are now referring more patients to hospitals, while 73% are referring more patients to HSE dental clinics. We predicted

this would happen when the cutbacks were announced. We now fear that patients are in for a lot more pain and delays because the system is buckling under the pressure," he said.

Eighty eight per cent of the dentists polled do not believe that the public are aware of their entitlements under the two dental health schemes. To help address this information deficit the Association has launched a new information campaign. The poster and web campaign will target the eight out of ten Irish citizens - covered by the PRSI or medical card schemes - who are entitled to free dental checks, and the entitlement of medical card holders to a number of other free treatments including up to two fillings per annum.

"We know the State is under tremendous financial pressure but a strategy whereby very modest savings are made in the short term by providing minimal treatment to patients is simply not sustainable. These 'savings' are then wiped out when patients require much more

Massive decline in dental treatments provided for medical card patients

The Association has described the decline in dental treatments being provided under the medical card scheme (DTSS) as alarming. New figures from the HSE show that the number of above the line treatments provided in the first two months of the year, such as cleanings, fillings, extractions, gum treatments, etc., are down 40% on the same period last year - from 227,325 treatments to 137,004. The figures for more complex below the line treatments such as root canal work, providing or repairing dentures, etc., are down by a massive 69% - from 22,250 to 6,944.

Vice President Elect of the IDA, Dr Andrew Bolas, said "The HSE figures for above the line treatments show that the state funded 90,000 fewer treatments to medical card patients in the first two months of the year alone. That's equivalent to 540,000 fewer treatments in a full year. Our fear is that hundreds of thousands of people are no longer receiving appropriate dental care. This has very serious implications for the dental health of the nation and indeed will lead to significant expenditure in the future as patients will require more extensive and expensive treatment," he said.



Dr Paddy Crotty presented the winner of the Moloney Award, Dr Una Lally, with her prize.



Emma McDonald and Paul Parker of Tekno-Surgical/Sisk Healthcare demonstrate elements of the Eschmann range to Association President Dr Conor McAlister.



Drs Niamh Gormley and Jacqueline Clune at the endodontics hands-on demonstration.

expensive treatments in the medium term causing more pain for the patient and the State's coffers. The new Government promised to reinstate the medical card scheme and to review the PRSI scheme, and we urge them to do so without delay," said the Chief Executive.

The survey also shows that a massive 95% of dentists said they were under financial pressure, suggesting that further practice closures are inevitable. Sixty three per cent of dentists reported redundancies in their practice, while 74% have introduced reduced working hours.



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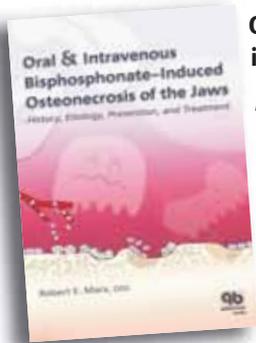
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www.quintpub.co.uk

Professor Marx's book is essential reading for any medical or dental practitioner who cares for patients before or after bisphosphonate treatment. The Professor, from the Miller School of Medicine in Miami, has treated 238 cases of bisphosphonate-induced osteonecrosis of the jaws (BIONJ) to date, and presents in some detail 16 case studies most representative of the spectrum of patients he has seen.

In the US it is estimated that 14 million patients take oral bisphosphonates for osteoporosis or 'off label' osteopenia. Alendronate (Fosamax) has caused 96% of the BIONJ known to Professor Marx, primarily because of dosing. Oral and intravenous bisphosphonate treatment precludes extractions or implant treatment for years or, more likely, indefinitely after treatment, as the half-life of these drugs in bone is over 11 years.

This important, comprehensive and graphic publication shows that bisphosphonate-induced osteonecrosis is the same disease as 'phossy jaw', which was first described in the *BMJ* in 1899, and was due to heated phosphate vapour exposure in the matchstick industry.

The preface to both the first and second editions is a compelling read, where the realities of complications related to bisphosphonate treatments are uncovered, and lessons that were learned too late from relying on too short a time frame in drug trials for complications to surface, are described.

Zoledronate (Zometa) taken intravenously in the treatment of metastatic bone disease and alendronate taken orally for the treatment of osteoporosis are singled out as the most toxic, and are documented to produce the vast majority of BIONJ.

Orthopaedic surgeons are seeing spontaneous and/or low-energy femur fractures related to long-term (seven-year) use of alendronate (mostly as Fosamax). Prof. Marx describes a case of atypical fracture of the femur caused by extended use of alendronate. Prednisolone increases the toxicity of bisphosphonates, and those with steroid-induced osteoporosis are at greater risk of developing osteonecrosis.

The action and pharmacokinetics of the bisphosphonate family is clearly explained, as well as how intravenous and/or oral doses of bisphosphonate accumulate in the bone matrix. Osteoclasts that resorb bone containing a bisphosphonate ingest the bisphosphonate, which causes osteoclast cell death. Hypermineralisation is seen with bisphosphonate toxicity as sclerosis of the lamina dura followed by more generalised osteosclerosis in the alveolar bone.

Dental radiographs

A dental peri-apical radiograph may clearly show sclerosis of the

lamina dura. An example is shown in a patient treated for osteoporosis with an oral bisphosphonate for four years.

Widening of the periodontal ligament space, tooth mobility unrelated to alveolar bone loss, and deep bone pain without an apparent dental aetiology are signs of significant bisphosphonate bone toxicity.

Prof. Marx refers to Dixon *et al.*, who documented the remodelling rate of alveolar bone. It is, for instance, many times that of the tibia and similarly, the mandible, which accounts for the higher uptake of bisphosphonates in the alveolar bone and mandible, the main sites of pathology associated with bisphosphonate-induced osteonecrosis. In other words, the jaws get an overdose of bisphosphonates.

Spontaneous bone exposure related to oral bisphosphonates (triggered by occlusal forces axially loading), particularly in the lingual cortex in the molar regions, accounts for more than 50% of cases, and this cannot be prevented, even with the best dental care. The incidence of BIONJ is ten times that in femurs and vertebral bones.

After bisphosphonate accumulation the lamina dura cannot remodel as normal and becomes sclerosed. If trauma such as tooth extraction occurs instead of new bone forming it becomes necrotic. Root canal treatment and crown amputation are better options. Where teeth are mobile grade 1 or 2, splinting is preferable. Edentulous areas under dentures may also develop bisphosphonate-induced osteonecrosis.

Professor Marx advises practitioners (medical and dental) to not only note the fact that a patient has had treatment with a bisphosphonate, but the dose, duration, frequency and mode of intake of treatment, as well as a note of steroid or methotrexate treatment at the same time as bisphosphonates.

He advises: "Medical oncologists would be well advised to refer all patients who have indications for bisphosphonate therapy to an experienced dentist for an urgent examination to achieve optimum dental health".

Trigger events leading to BIONJ:

- any dental procedure that increases the demand for bone renewal in the jaws, such as periodontal disease, dental abscesses and traumatic occlusion;
- invasive dental procedures: extractions, implant placement, periodontal surgery, apicectomy, etc.; and,
- edentulous areas under dentures may also develop BIONJ due to the occlusal pressure causing remodelling of the alveolar crest.

Established osteonecrosis is best referred to an oral and maxillofacial surgeon. Professor Marx recommends a treatment schedule that is specific to the clinical stage of the osteonecrosis. Discontinuation of the oral bisphosphonate may lead to gradual improvement and even spontaneous healing of exposed bone responsive to local debridement after six to 12 months, and the CTX C-terminal cross linking telopeptide value increases, reducing the risk of ONJ. CTX is an index of osteoclast function.

Dr John A Hogan BDS (UBristol) MB BCH DCH (NIrel) LRCP&Srel Slievemore Clinic, Old Dublin Road, Stillorgan, Co Dublin.



IRISH MEDICINES BOARD

Bisphosphonates and Osteonecrosis of the Jaw: Current Guidance on Risk Minimisation Measures

Bisphosphonates are a class of medicines approved for various indications related to their inhibitory effect on bone resorption in certain malignant and benign diseases, including prophylaxis and treatment of osteoporosis; treatment of Paget's disease; and as part of some cancer regimens, particularly for metastatic bone cancer and multiple myeloma.

The risk of osteonecrosis of the jaw (ONJ) in association with the use of bisphosphonates has been closely monitored and reviewed at EU level on several occasions, with a number of risk minimisation measures taken, including updates to the product information and communication to healthcare professionals¹. The most recent review of this issue, in 2009 concluded that the risk is greater for patients receiving intravenous bisphosphonates for cancer, than for patients receiving oral bisphosphonates for osteoporosis or Paget's disease of bone. The IMB highlighted the outcome of the EU reviews via publications in its *Drug Safety Newsletter*, *MIMS Ireland* and the *Irish Medical Formulary* (IMF).

ONJ related to bisphosphonates is defined as an area of exposed or dead bone in the jaw that has lasted for more than 8 weeks, in a patient who has been or is currently being exposed to a bisphosphonate and has not had radiation therapy on the jaw.

Monitoring and Recommendations

All patients receiving intravenous bisphosphonates should have a dental check-up before bisphosphonate treatment. Urgent bisphosphonate treatment should not be delayed; however, a dental check-up should be carried out as soon as possible. All other patients who start oral bisphosphonates should only have a dental examination before starting treatment if they have poor dental health.

Whilst it is recognised that risk factors for ONJ are multiple and currently not fully elucidated, the most significant risk factors for the development of ONJ in association with bisphosphonates, together with current recommendations for patient management to support risk minimisation are outlined in the shaded panel, given the important role of dentists in the assessment and management of patients, including those referred or presenting with symptoms.

The Summaries of Product Characteristics for the individual products (available on www.imb.ie) should be consulted for full prescribing recommendations, including details of potential adverse reactions and risk minimisation measures.

ADVICE FOR HEALTHCARE PROFESSIONALS AND PATIENTS

- *The risk of developing ONJ in association with oral bisphosphonates seems to be low. The risk of ONJ is substantially greater for patients receiving intravenous bisphosphonates for cancer indications than for patients receiving oral bisphosphonates for osteoporosis or Paget's disease.*
- *There is clear evidence to suggest bisphosphonate-specific and indication-specific risk factors for the development of ONJ such as potency (highest for zoledronic acid), route of administration (e.g. intravenous ibandronic acid, pamidronic acid and zoledronic acid); and cumulative dose. The evidence base is less robust for other proposed risk factors (e.g. duration and type of malignant disease, concomitant treatment, smoking, and comorbid conditions). However, healthcare professionals should consider these risk factors when evaluating an individual's risk of developing ONJ.*
- *A history of dental disease – including invasive dental procedures, dental trauma, periodontal disease, and poorly fitting dentures – is associated with an increased risk of ONJ.*
- *All patients on treatment with bisphosphonates should be encouraged to:*
 - *maintain good oral hygiene*
 - *receive routine dental check-ups*
 - *report any oral symptoms such as dental mobility, pain, or swelling.*

Other potential safety concerns related to use of bisphosphonates have also been considered at EU level and highlighted by the IMB, including the outcome of evaluation of data related to the risk of atrial fibrillation, a review of publications related to an association between oral bisphosphonates and oesophageal cancer and evaluation of the risk of atypical femoral fracture. Further information on these issues is available from the IMB and EMA websites (www.imb.ie and www.ema.europa.eu)

Dentists are requested to report suspected adverse reactions, including any cases of ONJ to the IMB using the online reporting facility at www.imb.ie. A downloadable ADR report form is also available from the IMB website (www.imb.ie) which can be sent by freepost to the IMB. Envelopes should be marked "FreePost", Pharmacovigilance Unit, Irish Medicines Board, The Earlsfort Centre, Earlsfort Terrace, Dublin 2. Alternatively, completed forms may be submitted by fax (01- 676 2517). Post-paid report cards are also available from the Pharmacovigilance Unit at the IMB (01- 676 4971).

* Bisphosphonates currently authorised in Ireland include:
alendronate, clodronate, ibandronate, pamidronate, risedronate and zoledronate.

REFERENCES

¹ *IMB Drug Safety Newsletter* Oct 2006, May 2008 & Feb 2010 (available on www.imb.ie).

Evidence says it all for Colgate



Colgate has stated that it is committed to developing products and services to help support dental professionals in their clinical practice. According to the company, Colgate Total was the first, and remains the only toothpaste clinically proven to deliver sustained antibacterial protection for 12 hours. The unique formula of triclosan and copolymer in Colgate Total provides superior plaque control for a healthier mouth, and continues to meet the evolving needs of dental professionals and their patients.

Evidence-based dentistry includes the integration of best evidence, clinical judgement, and patient values and circumstances. There are varying levels of filtered and unfiltered information, which determine the quality and strength of the evidence. The strength of evidence found within the guidance document 'Delivering Better Oral Health - an evidence-based tool kit for prevention' published by the UK's Department of Health (second edition, July 2009), ranges from level V evidence ('opinions of respected authorities based on clinical evidence and descriptive studies'), to level I evidence, ('strongest evidence from at least one systematic review, of multiple, well designed, randomised control trial/s').

'Delivering Better Oral Health' states that level I evidence suggests that a toothpaste containing triclosan in combination with a copolymer is more effective than fluoride toothpaste in improving plaque control and gingival health.

New from DMI

According to Dental Medical Ireland (DMI), distributors of the A-dec 200 patient chair (right), it is a complete system packed with features for



added accessibility and comfort – all at great value and within a neat compact package. Including the dental chair, delivery system, assistant's instrumentation, dental light, and support centre with cuspidor, every detail on the new Adec 200 is designed to enhance patient care and treatment efficiency, and showcases the best of design with purpose.

DMI has also announced the Irish launch of two outstanding new Melag decontamination products:

- the Melag MELAtherm 10 Washer Disinfector features short processing times, efficient and paperless process recording, and documentation control and traceability; and,
- the Melag Premium 41B+ Class B Autoclave, advantages of which include: speed – Fastest B Class Autoclave on the market, convenience – new colour touch screen for ease of use, and results recorded and electronically stored.

Melag is a family-owned German manufacturer, which has manufactured autoclaves since 1961.

Education drive



Association President Conor McAlister gets acquainted with the second edition of Oral Health News from DeCare Dental Insurance watched by (from left): Maureen Walsh, Edel Jordan and Dr Gerry Gavin of DeCare.

DeCare Dental Insurance has just launched the second edition of its *Oral Health Zone* magazine at the IDA Conference in Cavan. The magazine is one of a number of initiatives undertaken by DeCare to enhance and improve oral health awareness among Irish consumers attending dental practices in Ireland. *Oral Health Zone* has been developed as a quality, informative dental waiting room magazine and was first launched in January 2011. It is distributed free of charge to dental practices throughout Ireland for display in waiting rooms as an educational resource for patients.

Hamper winners



Winners of the rescheduled IDA Golf Society Christmas outing were (from left): Dr Frank Ryan; Dr Kevin O'Regan; David Mathews from the sponsors Denplan; and Dr John Fahey. Dr Billy Delaney was also part of the winning team.

Less intense and alcohol free

Johnson & Johnson has launched a less intense, alcohol-free version of Listerine Mouthwash – Listerine Zero. The new product is alcohol-free for a less intense taste, but still contains the classic Listerine four essential oils: menthol, thymol, methyl salicylate and eucalyptol. Listerine Zero kills up to 99% of plaque bacteria *in vitro*, more than the leading alcohol-free, daily-use mouthwash. Listerine Zero also contains 220ppm (0.05%) fluoride for effective enamel protection.



For dental professionals, there is now a less intense and alcohol-free, yet highly effective daily use mouthwash within the Listerine range to suit the individual needs of some patients and to help them achieve a cleaner, fresher and healthier mouth beyond toothbrushing and interdental cleaning alone.

Dr. Paul A. Tipton

B.D.S., M.S.c., D.G.D.P., U.K.

Specialist in Prosthodontics

TG Medical (Ireland)



Dr. Paul A. Tipton

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- Principles of Occlusion
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- Bridge Design
- Veneers / Porcelain Inlays
- Smile Design
- Posts
- Private Practice Conversion
- Marketing
- Fee Setting
- Treatment Planning
- Direct and Indirect Composites
- Adhesion and Bonding
- Implants
- Aesthetics
- Preparation Techniques
- Articulators

Having completed Paul Tipton's 1 year Restorative Course I can say that I found it extremely useful for general practice. I would recommend it to dentists looking to update or refresh their knowledge at a clinical and theoretical level. I found the occlusion aspects of the course brilliant and have applied them nearly every day since in practice. The variety of topics covered is broad and dips into all areas of dentistry.

Annette o'Donovan, Limerick

I found Paul to be an excellent lecturer and team motivator. His practical tips are especially useful in everyday practice.

Dr Brian Byrne, Sligo

For further details of the course brochure please contact
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TG Medical launch

TG Medical (Ireland) Ltd will officially launch its training facilities at the Plaza Hotel, Tallaght, on Saturday September 17. Dentists are invited to a reception with ample opportunity to talk to trainer Dr Paul Tipton, as well as to some delegates who are attending or have attended Paul's courses in Dublin. The invitation is open, but is limited to 30 dentists, and registration is on a first-come, first-served basis prior to the event. For dentists who are contemplating taking Dr Tipton's 'Hands-on Tooth Preparation and Practical Restorative Dentistry (Phantom Head) Course', TG Medical is offering the opportunity for dentists to sit in at Paul's one-hour morning lecture

and stay around for another 15 minutes during the start of the hands-on session. During the morning coffee break there will be an opportunity to speak to Dr Tipton and/or attending delegates.

Dates	Programme
July 2, 10.00am	Posts
July 3, 9.00am	Porcelain inlays
September 24, 10.00am	Posterior composites
September 25, 9.00am	Bridge lecture

Admission is free but limited places require registration prior to attending.

Newmed Kronos range

The Kronos range of Newmed autoclaves, distributed by HDMS, is built to comply with all the relevant European directives and standards, including BS EN13060. They are designed for quality, speed, reliability and simplicity. One of the main features of the Kronos range is that all models incorporate a vaporiser unit, injecting steam directly into the chamber. This enables the units to operate with faster cycle times while using less power.

Features include: a motor-operated door closure with triple safety protection; steam generator for quick sterilisation and reduced water consumption; internal thermal printer as standard with last 10 cycle reprint facility; optional internal USB Data logger facility; multi-



The Newmed Kronos B18 five tray autoclave, distributed by HDMS.

language graphic display for easy operation and control; practical water loading from the front with self-priming pump; suitable for connection to separate water system for automatic filling; suitable for connection to waste system for automatic draining; and, separate loading and drains tanks for improved hygiene.



QSC services

Denis Doyle of QSC-Medical in Waterford is a qualified test person for the decontamination cycle and equipment, who specialised in validations to EU standards for hospitals for 20 years. He has run courses for hospital CSSD staff and intends to offer courses to

dental staff soon. He also offers support after validation by phone and email on decontamination issues.

QSC-Medical offers certified validation services to EU standards for autoclaves and washer disinfectors, which should be done yearly at least. Denis welcomes the announcement of a new document on decontamination in the dental surgery by the Irish Dental Association.

ZirLite crowns from McDowell + Service



ZirLite is a monolithic solid zirconia crown and

bridge restoration with no porcelain overlay and is ideally suited for posterior applications. Each and every crown, bridge or inlay can provide your patients with exceptional strength that will last and last. All ZirLite restorations can be created with a minimum occlusal reduction of 0.5mm, 1mm is ideal and, because ZirLite has a flexural strength of 1,100mpa, the

thinner occlusal fossa will not compromise the structure of the load-bearing tooth. ZirLite is future proof. All restorations are designed using 3shape CAD technology, one of the world's most renowned dental CAD software companies. Every ZirLite crown and bridge case will be "articulated" using 3shape's virtual semi-adjustable articulator software, thus ensuring a more accurate occlusal harmony.

By offering this type of restoration at a fixed price (ZirLite crowns are available from €79 or stg£69), McDowell + Service say that you avoid the uncertainty that surrounds precious metal pricing.



Lynne Lynas from McDowell + Service Dental Laboratory with ZirLite crown competition winner Dr Jane Montague-Peters at the IDA Conference in

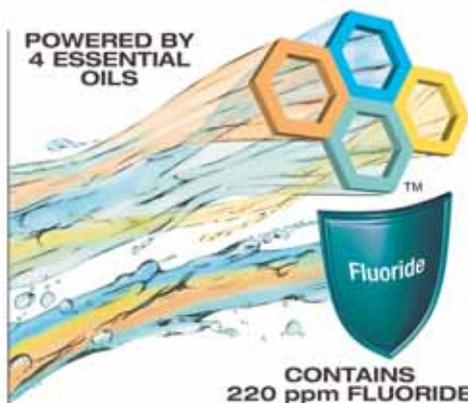
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LISTERINE® ZERO™

Adds zero alcohol to the LISTERINE® range

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References: 1. Data on file 45348, McNEIL-PPC, Inc. 2. Data on file, microbiology dossier, McNEIL-PPC, Inc. 3. Data on file 103-0214, McNEIL-PPC, Inc.

CED speaks out on Qualifications Directive

DR TOM FEENEY discusses the Professional Qualifications Directive and the CED's position on the modernisation of this important document.

The Professional Qualifications Directive (PQD) is a set of rules, consolidated in a single Directive (Directive 2005/36/EC), which establishes mutual recognition of qualifications across EU states. A legislative proposal to modernise the PQD is scheduled for 2012.

As part of its review of the workings of the PQD to date, the European Commission organised a workshop on minimum training requirements for the professions of dental practitioner and doctor on May 6, 2011, in Brussels. This workshop was attended by national experts appointed by the Ministries of the Member States.

In this workshop, the Commission invited the experts to comment on:

- how compliance with the minimum training requirements of Directive 2005/36/EC on the Recognition of Professional Qualifications by the training institutions is ensured in their Member State;
- how the transparency of the training programmes could be enhanced;
- possible modifications of the minimum training requirements, on the basis of a specific set of questions for each sectoral profession; and,
- whether and how possible modifications of the Bologna process could contribute to possible changes to the minimum training requirements.

For this reason, the CED Working Group Education and Professional Qualifications asked CED members to share with their national experts the CED's positions on minimum training requirements. These positions were drawn from the CED Resolutions adopted in May 2010 in Santiago de Compostela and from the CED response to the consultation paper on the PQD, and included the following:

1. The CED believes that basic dental training should continue to comprise a total of five years of full-time theoretical and practical study, as currently established under Directive 2005/36/EC.
2. The CED calls for the unity of the dental training cycle to be maintained, and strongly opposes the implementation of the two-cycle structure (Bachelor/Master) for the dental profession under Directive 2005/36/EC.
3. The CED strongly recommends the addition of a minimum number of training hours – at least 5,000 hours – under the first subparagraph of Article 34 paragraph 2 of Directive 2005/36/EC, to avoid the proliferation of weekend diplomas by private universities. The first subparagraph of Article 34 paragraph 2 should therefore be amended as follows: “Basic dental training shall comprise a total of at least five years and 5,000 hours of full-

time theoretical and practical study, comprising at least the programme described in Annex V, point 5.3.1 and given in a university, in a higher institute providing training recognised as being of an equivalent level or under the supervision of a university”. This new criterion, already applied for medical practitioners, should be implemented in a flexible manner by the Member States and by the universities.

4. In line with the new trends of measuring competences and studying final outcomes in the profession, the CED strongly recommends the inclusion of a minimum list of competences, which a dentist should have acquired by the end of his dental education, in a new Annex of Directive 2005/36/EC. Since Annex V.3/5.3.1 of Directive 2005/36/EC is very old (it dates from 1978), the CED strongly recommends its revision based on three types of changes, which reflect scientific and technical progress in dentistry. First, changes concerning the names of the subjects; second, deletion of certain subjects to the study programme for dental practitioners; and third, addition of other subjects.
5. For the sake of clarity and to correct the unequal treatment of dentistry compared to medicine, the CED strongly requests the introduction of the word “dental” in the second sentence of recital 20 of Directive 2005/36/EC. This would avoid different interpretations regarding the automatic recognition of dental specialties after the date of entry into force of Directive 2005/36/EC. Furthermore, the CED believes that the introduction of this word would facilitate the mobility of dental practitioners between Member States (as specialties would be recognised more easily), and that patients would be better informed about the legitimate qualifications of dental practitioners.
6. The CED points out that knowledge of the host Member State's language(s) is necessary and justified for reasons of patient safety (Article 53 of Directive 2005/36/EC). Healthcare professionals should be able to communicate with their patients in a proper way (to obtain informed consent, to inform them about the procedure and the risks, to explain treatment options, etc.) and understand fully the information given by the patient. Misinterpretation in healthcare can lead to fatal errors. Furthermore, as the vast majority of dental practitioners are self-employed, the control by employers of linguistic knowledge practically does not exist. The documents required under point 16 – “Linguistic knowledge” – as acceptable practice should become enforceable and incorporated in Article 53 of Directive 2005/36/EC.



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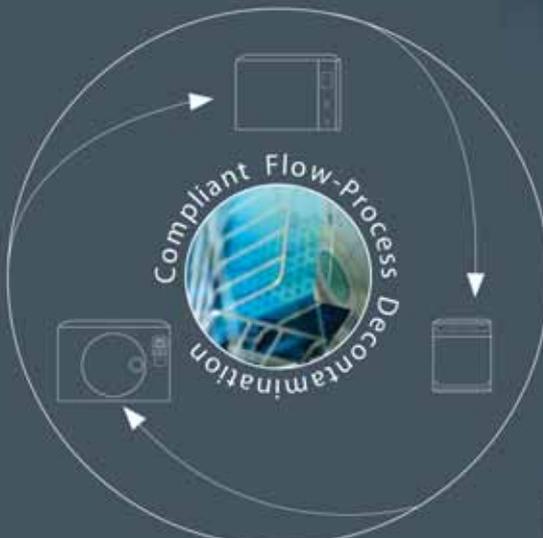
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The details given in this leaflet are correct at time of going to press. Equipment may be subject to availability.

SISK GROUP

Three steps to decontamination heaven

Dr NICK ARMSTRONG of the Association's Quality and Safety Committee outlines the IDA's new policy on decontamination of instruments in dentistry and gives a step-by-step guide on how to get your surgery operating to the highest standard.

Dental patients have a right to be treated in a safe and clean environment. It is essential that the risk of person-to-person transmission of infections be minimised as much as possible and in a practical manner.

The Safety, Health and Welfare at Work Act (2005) is relevant to the decontamination process as it places an emphasis on the safety of workers and the duties of employers and workers. Staff must not be requested to carry out any potentially dangerous tasks without reasonable precautions being taken and safeguards being in place.

The Association's document aims to provide the dental practitioner and the dental team with guidance on implementing an acceptable standard of decontamination consistent with the Dental Council Code of Practice Relating to Infection Control in Dentistry (2005). Adherence to the Guidelines, as set out in the document, should ensure that all practices achieve an acceptable standard in decontamination procedures and should be in a position to pass any inspection carried out by outside agencies.

The Association's document will assist the dental practitioner in achieving this essential standard and also demonstrate how to improve in a step-by-step way in order to achieve the highest standards of decontamination in dental practice. The new IDA website will contain detailed information on the use and testing of decontamination equipment, and a clinical audit provides a toolkit through which performance can be assessed and improved.

The following is a step-by-step strategy to help you prepare your surgery for a clinical audit.

STEP 1 WHAT YOU MUST DO NOW

If you are not already doing so, here is what you must do now to comply with the Dental Council Code of Practice. These essential standards must be implemented in all dental surgeries as failure to do so may result in Dental Council fitness to practice procedures.

Autoclaves: All autoclaves should:

- ▶ be commissioned before first use – this can be done by a test person or suitably qualified field service technician or engineer;
- ▶ be regularly serviced according to the manufacturer's instructions;
- ▶ be regularly monitored by periodic testing (daily, weekly user tests);
- ▶ have documentation of in-use operational readings; and,
- ▶ be annually validated.

What's acceptable?

B cycle autoclaves: the Dental Council Code of Practice states that vacuum autoclaves must be used for bagged instruments.

S cycle autoclaves are not as effective as B cycle autoclaves and must be phased out where present.

N cycle (displacement) autoclaves can only be used for un-bagged instruments for immediate use and are impractical for normal use in the dental surgery.

Instrument cleaning

Reusable invasive medical devices (RIMD) are all non-single use instruments used in the patient's mouth. When cleaning:

- ▶ separate sinks to be used for hand hygiene and instrument cleaning;
- ▶ at a minimum, ultrasonic cleaners should be used in all surgeries;
- ▶ all instruments must be cleaned thoroughly to remove visible deposits; and,
- ▶ under health and safety legislation, instructing staff to hand wash instruments before using an automated cleaning device could leave the dentist liable to prosecution should any injury to a staff member take place.

Handpieces

- ▶ Sterilisation of handpieces is mandatory. Effective handpiece sterilisation demands the use of a vacuum (type B) autoclave.
- ▶ All handpieces should be flushed through with the bur present for at least 20 seconds immediately after use. This flushing is essential (even if a washer/disinfector with lumen cleaners is used), as this will at least partially clean the lumen and remove dirt from around the bearings.
- ▶ Handpieces should be oiled after cleaning (either manually or in an automated oiler) and before autoclaving according to the manufacturer's instructions.

Separation of clean and dirty areas

The Dental Council Code of Practice states that there should be "no contact between contaminated and sterile instruments". This can be achieved by zoning dirty and clean areas and by separating the cleaning from the sterilising (and packing) areas. If there is no possibility of carrying out part or all of the decontamination process outside the surgery, it is possible to dedicate an area of the surgery for decontamination. A length of worktop three metres long can offer enough space for separation of clean and dirty areas or a shorter worktop divided into clean and dirty areas by a physical separation such as a steel barrier.

Work surfaces

It is important that work surfaces have a hard non-porous surface and are in good condition. Damaged surfaces are difficult to clean and should be replaced.

Water quality

High quality water should be used in the autoclaves. This can be sterile water, reverse osmosis (RO) water, de-ionised or distilled water. Distilled, sterilised or de-ionised water, once opened, should be used immediately or stored in a fridge.

Instrument tracing

This should be carried out to ensure that at least the date of sterilisation is recorded on each sterile pack. A labelling gun can be used for this and preferably the cycle number can also be recorded and stamped on each pouch before placing in the autoclave. A record should be kept of all autoclave cycles, and the cycle number and date of each pouch can be kept in the relevant patient's records.

Training

There must be access to training in decontamination for all staff and records must be kept of that training. Ideally, one member of staff should be designated to manage the decontamination process. Ultimately, the responsibility for decontamination lies with the clinician. It is also recommended that each practice has written protocols

describing decontamination procedures, which can be referred to by practice personnel and which should be revisited and updated as necessary from time to time.

STEP 2 RECOMMENDED STANDARDS

It is important, having achieved the essential minimum standards outlined in Step 1, to progress to Step 2, best practice standards, as soon as possible thereafter.

Washer/disinfectors

These are the most efficient means of cleaning instruments before sterilisation. It is difficult to clean handpieces effectively without using a washer/disinfectant, which can clean the lumens.

The washer/disinfectant should have a printer (or other method of permanently recording cycle parameters, e.g., direct link to computer). Daily and weekly performance tests should be carried out. Servicing should be carried out as per the manufacturer's instructions.

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Speed - Fastest B Class Autoclave on the market.
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Reliability - Manufactured in Germany, the most reliable autoclave on the market

Dental Medical Ireland
All Together Better

Melatherm Washer/Disinfectant

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Separation of clean and dirty areas

Ideally, use a separate room for the decontamination process if possible. In order to achieve this there may be a need to make additional practice accommodation available or provide new accommodation. Another way of achieving good separation is to carry out the cleaning in the surgery and the packing and sterilisation in another room.

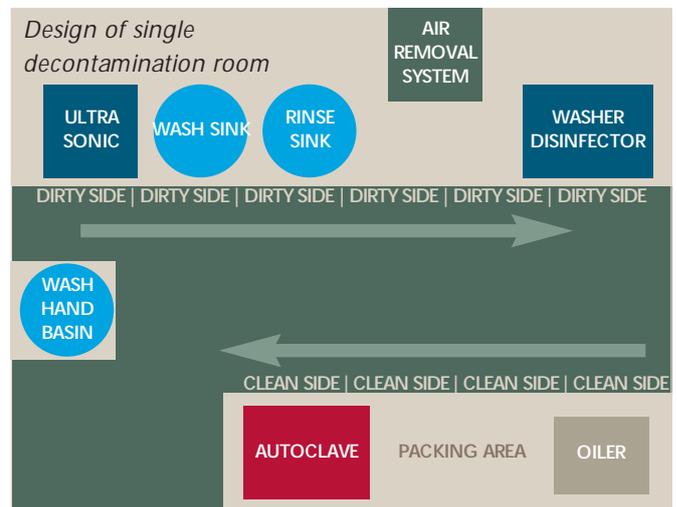
Essentials for recommended standard

To achieve the recommended standard for the decontamination of instruments in dentistry the following need to be in place:

- ▶ clear separation of dirty and clean areas;
- ▶ washer/disinfector;
- ▶ B cycle vacuum autoclave;
- ▶ use of high quality water in autoclaves and dental units;
- ▶ sterilisation of all RIMD including handpieces;
- ▶ instrument tracing;
- ▶ regular validation of equipment (autoclaves, washer/disinfectors); and,
- ▶ data collection and retention of instrument tracing, performance testing and validation.

STEP 3 ADVANCED DECONTAMINATION SYSTEM

All new surgeries/clinics should incorporate a separate decontamination room, preferably not opening into a public area. They should contain all of the elements of Steps 1 and 2.



This is a simple decontamination room. The arrow shows the flow of instruments which can be put in the ultrasonic cleaner (and/or washer/disinfector) and, if necessary, washed in the wash sink and then rinsed in the rinse sink after automated cleaning. After that, the instruments can be moved to the other side for packing, and handpieces are oiled on this side. (An automatic oiler is more efficient than hand oiling, but is not essential.) Instruments are then placed in the autoclave for sterilising and stored afterwards. The air removal system (or air conditioning) should be on the dirty side. A wash hand basin with any necessary PPE (gloves, glasses, masks, etc.) is present near the entrance.

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Maxillary reconstruction using zygomatic implants: a report of two cases

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Introduction

Restoration of the atrophic maxilla or a maxillary defect following tumour resection presents a challenge to the surgeon and prosthodontist. The atrophic maxilla has an inadequate denture-bearing area and also a reduced bone volume, which may contraindicate the placement of endosseous implants.

The International Research Group on Reconstructive Preprosthetic Surgery reported that bone loss in edentulous jaws is related to a number of factors, including adverse loading by a prosthesis, inflammation of the overlying mucosa, vascular changes and surgery that requires elevation of a mucoperiosteal flap.¹ Maxillary atrophy occurs in both a vertical and antero-posterior dimension, with vertical resorption increasing the inter-arch distance, resulting in functional and aesthetic problems. Antero-posterior resorption alters the maxillo-mandibular relationship, often creating a pseudopognathism. The atrophied edentulous maxilla also leads to collapse of mid-face soft tissues, impaired mastication and unbalanced diet, speech difficulties, and circum-oral hypotonia.²

Various surgical techniques, with or without bone grafting, have been advocated for reconstruction of the atrophic maxilla. The

widespread use of endosseous implants has seen an increase in bone augmentation procedures prior to implant placement.

Autogenous bone grafting is accepted as the gold standard in reconstruction. The most commonly harvested free bone graft sites include the iliac crest, tibia, rib and cranium. Intra-oral sites include the mental symphysis, mandibular ramus and tuberosity. The iliac crest is the recommended donor site in maxillary reconstruction, providing an adequate volume of corticocancellous bone for both sinus elevation procedures and onlay block grafts.

The placement of standard endosseous implants ideally requires bone volume in the maxillary alveolar crest of at least 10mm in height and 5mm in width.³ Multiple grafting procedures have been described for maxillary reconstruction, including onlay or alveolar split grafting,^{4,5,6} Le Fort I osteotomy with interpositional grafting,^{7,8,9,10} and sinus or nasal floor grafting.^{11,12,13}

The most significant disadvantage related to iliac crest autogenous bone grafting is the second surgical site and donor site morbidity. Donor site sensory nerve deficit and scarring, gait disturbance and post-operative infection are some potential complications.¹⁴ Furthermore, maxillary

autogenous bone grafting usually requires a healing time of four months prior to implant placement, followed by a four- to six-month period of implant integration, resulting in a period of approximately 12 months from initial surgery to delivery of the prosthesis. During this time, the patient's ability to use an existing removable prosthesis may be restricted. Iliac crest 'horseshoe' onlay grafts secured at the time of implant placement in a one-stage procedure have been used. However, Bell *et al.*¹⁵ highlighted the advantages of delaying implant placement, including more precise positioning of the implants. A number of other studies^{16,17,18} have reported improved results following a two-stage procedure.

These potential complications and the delay from grafting to final restoration encouraged the development of non-grafting alternatives for prosthetic restoration of the atrophic maxilla. These include distraction osteogenesis,^{19,20} tilted implants,^{21,22} short implants,²³ and zygomatic implants. First described by Branemark in 1988,²⁴ the zygomatic implant was developed as an alternative to grafting procedures in the severely atrophic maxilla. Early reports described their use in conjunction with two to four standard implants in the anterior maxilla.^{25,26} This allows cross-arch stabilisation, provided that adequate anterior maxillary bone is present. Zygomatic implants are also used in the treatment of maxillary defects secondary to trauma, tumour resection, or congenital defects.^{27,28,29}

There are a number of potential advantages of zygomatic implants when compared to bone graft augmentation with endosseous implant placement. Donor site morbidity is eliminated. The total treatment time is approximately six months shorter for zygomatic implants when compared to grafting with subsequent implant placement. Traditional sinus grafting requires six months of graft consolidation prior to implant placement. Simultaneous grafting and implant placement is possible, but is limited to patients with sufficient bone for immediate implant stabilisation.³⁰ Furthermore, Misch and Dietsch³¹ reported an implant survival rate of 90% with implants placed simultaneously with the graft compared with 99% with those placed during a second procedure. Lundgren *et al.*³² showed, in a histological analysis of bone graft-titanium interface, that integration of implants placed six months post grafting was superior to implants placed at the time of bone grafting.

The placement of zygomatic implants permits a shorter period between implant placement and permanent restoration. Zygomatic implants allow the patient to wear his or her existing denture as a temporary removable prosthesis until the final restoration is fitted. Also, while a number of authors have reported the successful use of four implants (with distal angulation of the posterior implants, the so-called 'all on four' technique)²² to retain a prosthesis in the edentulous maxilla, the original protocol as described by Branemark²⁶ recommended the placement of four standard implants in the anterior maxilla in combination with bilateral zygomatic implants.

This paper describes the use of zygomatic implants to restore the maxillae of two patients. The first is a patient with a severely atrophic edentulous maxilla, and the second is a patient who underwent a sub total maxillectomy in the treatment of a maxillary adenocarcinoma.

Surgical protocol

Under general anaesthesia, a standard crestal incision, with releasing incisions in the midline and posteriorly, is used to expose the maxilla. Sub-periosteal dissection, starting at the lateral maxillary wall and extended in a posterior-superior direction, is used to expose the junction of the temporal and frontal processes of the zygoma. A channel retractor is placed to engage the zygoma at this angle. Care is taken to expose and protect both the infra-orbital nerve and rim. The curved end of the channel retractor should be palpable extra-orally, lateral to the orbit. The channel retractor serves to expose the zygomatic arch and also as a stop for the drill during preparation of the implant recipient site. A window is created in the lateral sinus wall to allow direct visualisation of the drill shaft while drilling. This window also allows irrigation of the drill and increases the accuracy of drill orientation. The sinus membrane is elevated to avoid trapping the membrane between implant and bone.

The implant site is developed as follows: a round bur is used to penetrate the alveolus extending into the sinus. In the atrophic maxilla, the initial bur hole is placed in the second premolar area slightly palatal to the alveolar crest. The zygoma is entered through the postero-superior roof of the maxillary sinus. A twist drill (diameter 2.9mm) is used to continue the osteotomy through the zygoma, penetrating the outer cortex at the fronto-temporal angle (where the curved channel retractor is resting). The site is further widened with a 3.5mm twist drill. If required, a pilot drill (diameter 4mm) is used to enlarge the fixture entrance into the alveolar bone. The zygomatic implant is a self-tapping titanium screw and is available in different lengths, ranging from 30 to 52.5mm, with an apical diameter of 4mm and a crestal diameter of 4.5mm. Angled abutments (45 or 55°) are used to compensate for the angulation between the maxilla and zygoma. If two implants are placed bilaterally, the implants should be maximally separated without compromising engagement in the zygoma. Following placement of the cover screws, the incision is closed in a standard fashion. The implants are allowed to osseointegrate for four to six months.

The surface characteristics of dental implant systems are designed to maximise implant integration. Rough surfaces improve bone contact and early integration. However, exposure of rough surface implant threads leads to increased difficulty with plaque control when compared to machined surface implants.^{33,34}

The implants used in the case reports discussed here were Nobelpharma Branemark® Zygoma TiUnite® Implants. The TiUnite surface is anodised, i.e., it has been manufactured by electrochemical anodic oxidation in galvanostatic mode, using undisclosed electrolytes. This leads to an increase in the surface area available for osseointegration.³⁵ Machined surface zygomatic implants are also available; however, given the limited bone available for implant placement (particularly in Case 2), TiUnite implants were chosen to improve the implant osseointegration,^{36,37} being aware of the need for plaque control measures in the event of thread exposure.



FIGURE 1: The maxilla was opposed by lower anterior natural teeth.



FIGURE 2: Four zygomatic implants were placed, two on each side.



FIGURE 3: The palatal location of the fixtures created a palatal 'bump' on the interim denture.



FIGURE 4: After four months, fixture level impressions were made and a tissue bar fabricated.

Case reports

Case 1 – Restoration of an atrophic edentulous maxilla

A 57-year-old male presented with a significantly resorbed maxilla and inability to tolerate a maxillary denture. There was one remaining maxillary molar. The maxilla was opposed by lower anterior natural teeth (Figure 1). Previously, the patient had been treated by conventional maxillary dental implants, which had failed. The mandibular anterior teeth displaced the existing conventional maxillary denture. At consultation, the following radiographic investigations were carried out: panoramic radiograph and computed tomography (CT) scan. These assessed the available bone levels for implant placement and for the presence of sinus disease. The CT scan showed that there was inadequate bone to permit conventional implant placement without bone grafting. Following this, the patient intimated that he wished to avoid bone grafting and therefore elected to have zygomatic implants placed.

Due to the lack of soft tissue support anteriorly and to increase stability (as no endosseous implants would be placed anteriorly), a maxillary overdenture was chosen as the planned final prosthesis. Four zygomatic implants were placed, two on each side (Figure 2). After a two-week post-surgical period of healing, the maxillary denture was modified to fit over the four fixtures and the healing abutments. The palatal location of the fixtures (Figure 3) created a palatal 'bump' on the interim denture. After four months, fixture level impressions were made (Figure 4) and a tissue bar fabricated. The design of the bar (Figure 5) was an attempt to minimise the vertical profile and adapt to the existing ridge contour. The fit of the tissue bar was confirmed (Figure 6), and the final prosthesis was processed to incorporate the retentive clips (Figure 7). The denture acrylic was thinned to reduce encroachment on the tongue (Figure 8). Follow-up included dental hygiene support and home care techniques for the care of the tissue bar. Initially the palatal tissue was reactive but it gradually normalised. Clinical outcome has been successful (Figure 9) for the patient in terms of sense of confidence, security and improved function. The follow-up, since implant placement, is 18 months.



FIGURE 5: The design of the bar was an attempt to minimise the vertical profile and adapt to the existing ridge contour.



FIGURE 6: The fit of the tissue bar was confirmed.



FIGURE 7: The final prosthesis was processed to incorporate the retentive clips.



FIGURE 8: The denture acrylic was thinned to reduce encroachment on the tongue.



FIGURE 9: Clinical outcome for the patient has been successful.



FIGURE 10: Two remaining maxillary molars were present in the left maxilla. The mandibular anterior teeth were present.



FIGURE 11: A previous reconstruction was not ideal and a large maxillary defect remained.

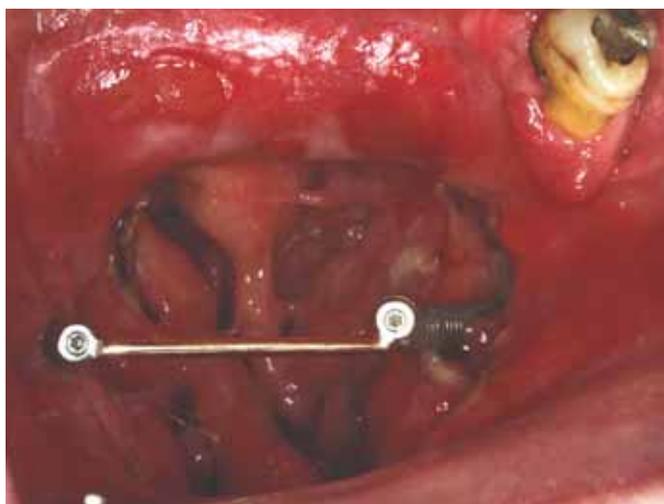


FIGURE 14: A fixture level impression was made and an angulated multi-unit abutment and a straight multi-unit abutment were selected to improve orientation and the level of the prosthetic bar.



FIGURE 15: The prosthesis was subsequently adapted to incorporate the retentive clip.

Case 2 – Restoration of a defect following maxillectomy

A 68-year-old male with a previous history of maxillectomy was considered for zygomatic implant placement. Two remaining maxillary molars were present in the left maxilla. The mandibular anterior teeth were present (Figure 10). His past surgical history was complex. He underwent a sub total maxillectomy for removal of a low-grade palatal adenocarcinoma eight years previously. The defect was initially reconstructed with a radial forearm free flap and subsequently with a fibular free flap. The reconstruction was not ideal and a large maxillary defect remained (Figure 11). Clinical examination revealed a loose maxillary obturator (Figure 12) occupying the maxillary defect. The only remnants of the maxilla were the tuberosities bilaterally. Retention for the existing obturator was gained from the remaining molars, the soft palate and the internal aspect of the nares. The lack of palatal support and the lever arm of the obturator created instability of the prosthesis, especially in

function. The pre-operative assessment included a panoramic radiograph and CT scan to assess remaining available bone and to identify the position of previously placed plates and screws. A treatment approach of bilateral zygomatic implants was considered to create a source of vertical resistance and retention. The proposed prosthetic design was for a bar-retained obturator prosthesis.

At the time of surgery, three zygomatic implants were placed, two on the left and one on the right (Figure 13). One of the implants on the left failed and was subsequently removed prior to definitive prosthetic restoration. Because of the surgical defect resulting from the maxillectomy, the implant on the left side, although integrated, 'exists in space', and the exposed threads require close attention to plaque control. The implant on the right has a better emergence tissue cuff permitting easier maintenance of oral hygiene.

A fixture level impression was made and, based on the prosthetic set-up, an angulated multi-unit abutment and a straight multi-unit abutment were selected to improve orientation and the level of the



FIGURE 12: Clinical examination revealed a loose maxillary obturator occupying the maxillary defect.



FIGURE 13: At the time of surgery, three zygomatic implants were placed, two on the left and one on the right.



FIGURES 16 AND 17: Clinical outcome demonstrates improved vertical support and retention for the obturator prosthesis.

prosthetic bar (Figure 14). The bar was tried in for passivity. Subsequently, the prosthesis was adapted to incorporate the retentive clip (Figure 15). Clinical outcome demonstrates improved vertical support and retention for the obturator prosthesis (Figures 16 and 17). Utilisation of just two zygomatic fixtures is not ideal, and conventional obturator retentive points and support points from the remaining maxillary molars are essential in this case. The future longevity is not predictable in this case. Vigorous hygiene support and home care is also needed for the exposed implant. The follow-up for this patient, since implant placement, is 18 months.

Discussion

Prosthetic aspects of zygomatic implants

The clinical outcome of prosthetic restoration is determined by the available supporting tissue.^{38,39,40} If the supporting tissue is limited due to long-term tooth loss and associated resorption, anatomical anomalies, or a forceful opposing occlusion, the utilisation of dental implants provides significant advantage for prosthetic restoration in terms of support, retention and stability.⁴¹

The proposed prosthetic restoration and the available bone determine the location of the dental implants.^{42,3} In the maxilla, there are advantageous positions for the placement of dental implants in terms of prosthetic outcome relating to force distribution, antero-posterior spread and location within the arch.^{43,44,45}

Conventional dental implant treatment is ideal in cases of optimal available bone, both in the anterior and posterior maxilla. As a guideline, good outcome in terms of longevity is expected when four to six implants are utilised in overdenture cases, and six to eight implants in cases of fixed restoration.^{46,47,48,49} The advent of the zygomatic implant has facilitated restoration in cases where the normal guidelines of available bone are not fulfilled.

Zygomatic implants have applications in both fixed and removable prosthetic rehabilitation. As with conventional implant treatment, numerous factors influence treatment planning decisions related to the role of fixed or removable prostheses as follows: the number and location of implants placed; the need for lip support; patient preference; and, ability to maintain adequate hygiene measures and mechanical demands related to the occlusion. The classic zygomatic protocol^{24,26} (where adequate alveolar bone is present in the anterior maxilla to permit placement of two to four anterior maxillary implants combined with the zygomatic implants), involves rigid splinting of the fixtures. Depending on the available zygomatic bone, one or two fixtures may be placed in the zygoma. The potential long lever arm of the zygomatic implant demands the rigid splinting.

Removable prostheses were provided in both cases reported. In Case 1, the absence of lip support, tooth position requirements, the absence of alveolar bone in the anterior maxilla and the opposing natural dentition dictated the choice of a removable prosthesis. In Case 2, the need for obturation of the extensive maxillary defect and requirement for access for adequate hygiene procedures also dictated the need for a removable prosthesis.

The prosthetic set-up is fabricated in terms of tooth position, lip support and occlusion. Using this set-up a radiographic template and surgical guide may be generated. However, in the cases reported here, a surgical guide was not utilised.

The palatal emergence location of the zygomatic fixture, seen in Case 1, has implications in terms of palatal contour of the prosthesis. The extent of maxillary alveolar resorption was in fact beneficial in providing adequate prosthetic space.

The prosthetic components for impression making and restoration are specific to the zygomatic implant and are not interchangeable with conventional components. This difference is related to the angulation

of the neck of the zygomatic fixture, which demands a shorter abutment screw for full engagement. A conventional impression coping screw or a conventional abutment screw will 'bottom out' prior to full engagement. Access for connection of components may be more difficult in light of the disto-palatal orientation of the zygomatic fixture.

Surgical aspects

Numerous techniques, involving differing surgical procedures, graft materials and endosseous implant systems, have been described for reconstruction of patients with an edentulous severely atrophic maxilla, and also patients who have undergone maxillary resection for neoplastic disease. Various restorative techniques, including microvascular free flaps, local flaps, and prosthetic obturators have been advocated.^{50,51,52} However, significant obturator retention and stability problems occur when extensive defects remain following a maxillectomy. Schmidt *et al.*²⁷ reviewed the clinical outcome of patients reconstructed with zygomatic implants after maxillary tumour ablation. This article describes the use of zygomatic implants to restore both the atrophic maxilla and the maxilla post tumour ablation.

The first patient had a Class V⁵³ (<10mm in vertical height and 4mm in the horizontal dimension) maxillary alveolar crest. The reported success rate of zygomatic implants placed in atrophic edentulous maxillae is 90-100%. Kahnberg *et al.*,⁵⁴ in a three-year review of 145 zygomatic implants, reported a 96.3% success rate. Branemark *et al.*,²⁶ in a long-term follow-up of 52 zygomatic implants placed in 28 consecutive patients, reported a 94% success rate. Penarrocha *et al.*,⁵⁵ in a review of 40 zygomatic implants placed in 21 patients, reported no failures after a mean follow-up of 29 months. A number of authors have reported on the placement of zygomatic implants in smokers, with no increase in failure rates.^{29,30,56} Zygomatic implants may be loaded immediately or six months following placement. Chow *et al.*⁵⁷ reported no failures in the preliminary results of 10 zygomatic implants immediately loaded. Duarte *et al.*⁵⁸ placed 48 zygomatic implants in 12 patients. All were immediately loaded with a prosthesis supported solely by the zygomatic implants. At 30 months, two of the 48 zygomatic implants had failed.

The second patient in this report had two zygomatic implants placed on the left side and one on the right. One implant placed on the left failed and was removed; the remaining implants are functioning successfully at present.

Reconstruction following a maxillectomy is challenging, as engagement of the alveolar bone and the use of standard implants anteriorly is not possible. The volume and quality of the remaining bone available for osseointegration is compromised. Also, the lever arm placed on zygomatic implants is significantly greater than the lever arm placed on standard endosseous implants. This places the zygomatic implants at a significant biomechanical disadvantage. Schmidt⁵⁹ recommends the placement of two zygomatic implants bilaterally, not only to allow for distribution of occlusal and retentive forces, but also to retain the ability to use one implant should another

fail. If two zygomatic implants are placed bilaterally, the implants should be maximally separated without compromising engagement of the zygoma. Landes⁶⁰ reported a significant quality of life improvement, comparable to maxillary reconstruction with autogenous bone, in patients restored with zygomatic implants following maxillectomy.

Although zygomatic implants have a number of advantages when compared to other grafting or non-grafting restorative techniques, the procedure is demanding and, in the authors' opinion, requires a surgeon experienced in maxillofacial procedures. The risk for orbital injuries demands particular attention. The reported complications include post-operative sinusitis, oro-antral fistula formation, peri-orbital haematoma, orbital injury, lip lacerations, epistaxis, and temporary sensory nerve deficits.^{22,26,29,51} The reported incidence of sinusitis is 2.3-13.6%.^{22,30,61,62} However, Petruson⁶³ studied the reaction of the sinus mucosa to zygomatic implants endoscopically, and found that the mucosa was normal with no signs of increased secretion or infection around the implants. A recently published paper⁶⁴ described the inadvertent intra-cranial penetration of zygomatic implants placed in the pterygoid area. As a consequence, the authors of that case report advocate the use of pre-operative CT scanning to reduce the likelihood of this adverse event and, if indicated, post-operative CT scans to diagnose this rare but serious complication if suspected.

Concerns related to speech and hygiene problems caused by the palatal emergence of the zygomatic implant have been raised. However, a number of reports show minimal long-term speech problems associated with the prosthesis.^{26,65} Also, modification of implant head angulation design and new placement techniques⁶⁶ have been suggested to further decrease this potential problem.

While not utilised in the pre-operative planning of the two cases highlighted here, pre-operative CT planning may be used, with or without radiographic stents, to plan placement of zygomatic implants. Three-dimensional images and planning software programmes are used to plan implant placement and restoration, create surgical stents, and subsequently fabricate provisional or final restorations before implant placement surgery.^{67,68} Prefabricated surgical guides rigidly fixed at the time of surgery offer the ability to transfer the software planning to the surgical field to assist in ideal implant location; however, due to the absence of suitable alveolar fixation sites, the use of surgical stents in the cases presented here would provide no significant advantage.

Conclusion

Zygomatic implants may be used as an alternative to traditional grafting and non-grafting procedures to predictably and safely restore the severely atrophied maxilla. In addition, they also offer a reliable method to retain and support a maxillary obturator following maxillectomy. Zygomatic implants allow patients to avoid bone grafting procedures and associated donor site morbidity. The patient also retains the ability to wear an existing denture immediately after surgery.

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An audit of the caries status of patients about to start orthodontic treatment

Précis

An audit of the caries status of patients taken off an orthodontic treatment waiting list demonstrated that 42% required restorative intervention before orthodontic treatment.

Abstract

Statement of the problem: All dental caries needs must be addressed before orthodontic treatment in those deemed eligible for orthodontic treatment under HSE (Health Services Executive) guidelines.¹

Purpose of the study: To evaluate the prevalence of carious lesions in permanent teeth requiring restoration in patients from the North Cork area of HSE South taken off the Cork University Dental School and Hospital postgraduate orthodontic treatment waiting list.

Materials and methods: A data collection form was designed and applied to 100 consecutive patients taken off the postgraduate orthodontic treatment waiting list from October 2009. A gold standard based on a similar audit carried out in the UK² was adopted.

Results: Carious lesions in permanent teeth requiring restorative intervention were found in 42% of patients (48.9% of males and 35.3% of females). Sixty carious lesions requiring restorations were detected on posterior bitewings and 34 on DPTs, in patients where both forms of radiograph were used. Caries were detected in one-third of the 6% of patients who had attended a primary care dentist in the previous six months.

Conclusions: A total of 42% of this patient cohort failed the adopted gold standard by exhibiting caries requiring restoration in permanent teeth, with males showing a higher prevalence. A total of 43% of carious lesions detected by posterior bitewing radiographs were not detected on DPTs of the same patients. Six patients had attended a primary care dentist in the six months before being taken off the orthodontic treatment waiting list and two patients were diagnosed with carious lesions that required restoration.

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Introduction

It is considered good practice that patients should not begin orthodontic treatment if they have uncontrolled dental disease,² as patients with caries are likely to exhibit further deterioration in dental health when orthodontic appliances are fitted.³ As well as having a satisfactory level of oral hygiene, patients should have all active carious lesions restored. The National Institute of Health and Clinical Excellence (NICE) has published guidelines⁴ recommending specific intervals between recalls (range three to 12 months for children) for assessment of dental health status, which are dependent on many factors, including a caries risk assessment as summarised in **Table 1**. Two audits have reported on patients' recent attendance at their

TABLE 1: Summary of NICE dental recall clinical guidelines

The recommended interval between oral health reviews should be determined specifically for each patient and tailored to meet their needs on the basis of an assessment of disease levels and risk of or from dental disease. Risk factors in relation to dental caries include:

- ▶ high caries in mothers and siblings;
- ▶ high and/or frequent sugar intake;
- ▶ high and/or frequent dietary acid intake;
- ▶ use of fluoride toothpaste;
- ▶ other sources of fluoride (for example lives in a water fluoridated area);
- ▶ new carious lesions since last check-up;
- ▶ anterior caries or restorations;
- ▶ premature extractions because of caries;
- ▶ heavily restored dentition;
- ▶ low saliva rate;
- ▶ medical conditions such as xerostomia; and,
- ▶ fixed appliance orthodontics.

The recommended shortest and longest intervals between oral health reviews are as follows:

- ▶ the shortest interval between oral health reviews of all patients should be three months;
- ▶ the longest interval between oral health reviews for patients younger than 18 years should be 12 months; and,
- ▶ for practical reasons, the patient should be assigned a recall interval of three, six, nine or 12 months if he or she is younger than 18 years.

The recall interval should be reviewed again at the next oral health review, in order to learn from the patient's responses to the oral care provided and the health outcomes achieved.

National Institute for Clinical Excellence. Adapted from: CG 19 Dental Recall: recall intervals between routine dental examinations. London: NICE. Available from www.nice.org.uk/guidance/CG19, 2004. Reproduced with permission.

general dentist.^{2,5} Bitewing radiography, which is rarely used by orthodontists,¹ is considered more sensitive in detecting caries than dental pantomograms (DPTs).⁶ It should only be used when ALARA (as low as reasonably achievable) principles are followed,⁷ and in relation to caries, as frequently as the patient's caries risk assessment indicates.⁸ **Table 2** summarises the Faculty of General Dental Practice (FGDP) UK guidelines regarding interval frequencies for posterior bitewings according to the patient's caries risk category.

Clinical audit is part of a continuous quality improvement process that seeks to improve patient care by improving professional practice, as well as the quality of services delivered.⁹ The Orthodontic Review Group Report (2007)¹ recommends that clinical audit be introduced, supported and encouraged in all orthodontic units and that the knowledge gained should be shared within units and at clinical meetings. Previous audits carried out in the Republic of Ireland (RoI) and the United Kingdom (UK) have examined the caries status of patients referred for orthodontic assessment.^{5,10,11,12} While these audits have established the caries prevalence of patients at orthodontic assessment, there appears to be only one published audit that has reported the prevalence of caries in a cohort of patients taken off an orthodontic treatment waiting list immediately prior to starting orthodontic treatment.

That study, carried out in Sheffield,² investigated the prevalence of caries in patients at that time point and compared the number of carious lesions detected on bitewing radiographs with detection rates using DPTs. The current audit was undertaken to ascertain data in these regards at a similar time point within an Irish orthodontic cohort.

TABLE 2: Summary of the FGDP guidelines* for the taking of posterior bitewing radiographs

Risk category	Radiographic guideline
High caries risk	Posterior bitewing radiographs at six-month intervals until no new or active lesions are apparent and the individual has entered another risk category
Moderate caries risk	Annual posterior bitewings unless risk status alters
Low caries risk	Posterior bitewing radiographs at approximately: <ul style="list-style-type: none"> ▶ 12-18 months in the primary dentition ▶ Two-year intervals in permanent dentition ▶ More extended radiographic recall may be employed if there is explicit evidence of continuing low caries risk.

*Faculty of General Dental Practice (UK). Pendlebury, M.E., Homer, K., Eaton, K.A. (Eds.). *Selection Criteria for Dental Radiography (2nd Ed.)*. Faculty of General Dental Practice (UK), Royal College of Surgeons of England, 2004.

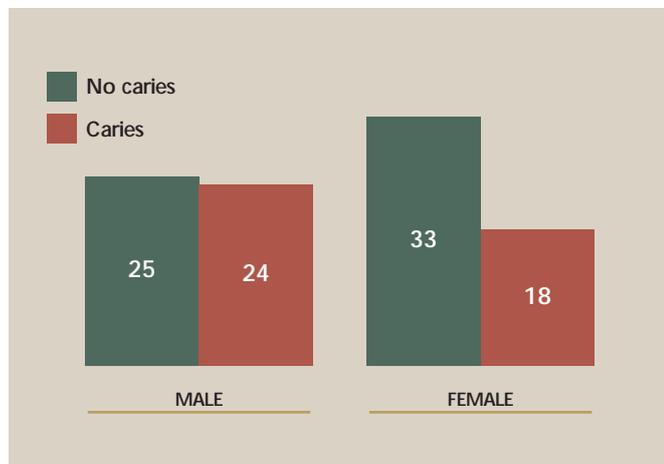


FIGURE 1: Caries distribution among male and female patients (n=100).

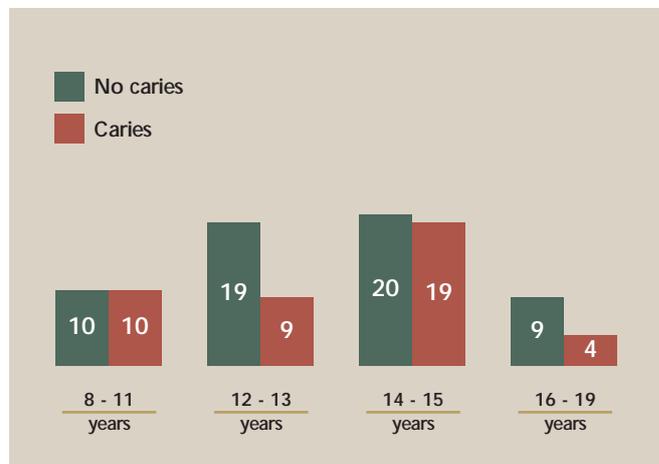


FIGURE 2: Distribution of patients by age grouping and prevalence of caries in each age group (n=100).

Aims of the audit

- To investigate the prevalence of caries among patients about to start orthodontic treatment in the Postgraduate Orthodontic Unit, Cork University Dental School and Hospital;
- to compare the number of carious lesions detected using posterior bitewings with the number detected using DPTs; and,
- to make any necessary recommendations for maintaining the dental health of all patients awaiting orthodontic treatment.

Standard

The gold standard set was that all patients called from the postgraduate orthodontic treatment waiting list should have all caries diagnosed and managed before orthodontic treatment is started.²

Materials and methods

The patients for this audit were from the North Cork area of HSE South and were referred to the Postgraduate Orthodontic Unit, Cork University Dental School and Hospital, by primary care dentists working in HSE dental clinics. Patients were assessed in the Unit and placed on the postgraduate orthodontic treatment waiting list if deemed of a sufficiently high treatment need, based on HSE eligibility criteria;¹ they were also advised that they must be caries-free before beginning orthodontic treatment. The referring primary care dentist was informed of the outcome of the assessment and requested to carry out all necessary restorative treatment. For this prospective audit, 100 consecutive patients were evaluated who were taken off the postgraduate orthodontic treatment waiting list from October 2009. Visual inspection for caries was carried out according to recommended practice.¹³ If DPT and/or bitewing radiographs were indicated,⁸ then these were examined closely using a table-mounted viewer. DPTs were taken with the field of exposure limited only to those structures that required assessment.⁷ If the patients were found to have carious lesions that required restorative treatment, they were referred back to the primary care dentist (with a copy of any radiographs taken), with a request to carry out the restorations and

any further investigations or treatment that was appropriate. Patients did not commence orthodontic treatment until all carious lesions were managed.

The following information was recorded on a data collection form:

- gender;
- examination date;
- age at examination;
- whether seen by a general dental practitioner (GDP)/CDS in the previous six months;
- whether bitewing radiographs had been taken in the previous six-month period, if the patient had been seen by a primary care dentist;
- the number of carious lesions requiring restoration (if any) detected visually;
- the number of carious lesions requiring restoration (if any) detected on the patient's DPT (if taken); and,
- the number of carious lesions requiring restoration (if any) detected on the patient's posterior bitewing radiographs (if taken).

Carious primary teeth and early enamel lesions, which would not be considered for restoration, were excluded from this audit. To check examiner reliability in recording data, the recorded information for every tenth patient was re-entered on a new data collection form and compared with the original one month after the initial data entry.

Results

No errors were noted with regard to data entry, indicating high reliability in data recording. Data on 100 patients (51 males, 49 females) with a mean age of 13.6 years (SD 1.99 years) were assessed. Forty-two patients were found to have caries in permanent teeth that required restorative intervention (mean lesion number per patient 2.2, range 1-7) prior to commencing orthodontic treatment. The mean waiting time for orthodontic treatment was 22.1 months (range 16-

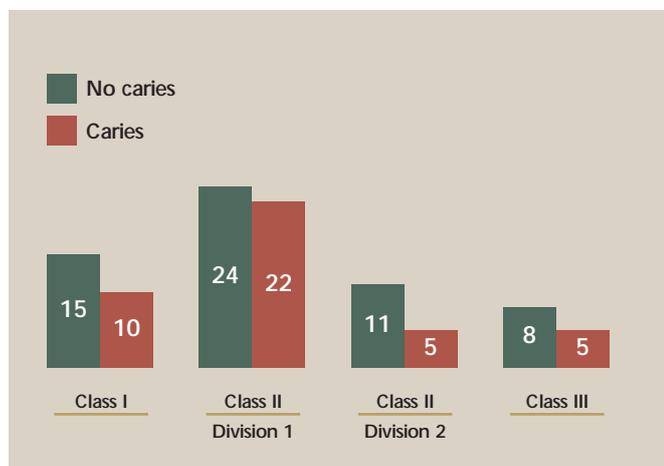


FIGURE 3: Caries distribution according to malocclusion (n=100).

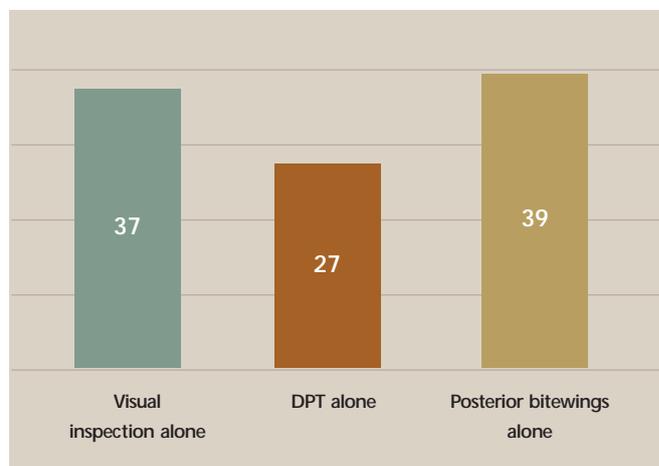


FIGURE 4: Number of patients with caries detection per diagnostic assessment. (Please note that some patients had more than one radiograph).

31 months). Figure 1 shows the caries breakdown according to gender. The distribution of patients by age grouping and the prevalence of caries within each age group is illustrated in Figure 2. Half of 15 year olds were found to be caries free. Figure 3 shows the breakdown of caries distribution according to malocclusion. Posterior bitewing radiography was used in 43 patients and DPTs in 89 patients. In the subgroup of patients where both types of radiography were used, 60 carious lesions requiring restoration were detected on posterior bitewing radiographs while 34 lesions were detected using DPTs. Figure 4 illustrates the number of patients with caries requiring restorative attention if visual inspection, DPT analysis or bitewing radiography was the sole diagnostic tool applied. Of the six patients who had seen a primary care dentist in the previous six-month period, none had a radiograph taken to detect caries and two had carious lesions that required restoration. One of these two patients required restorative intervention in five teeth and the second patient needed restoration of two teeth.

Discussion

This audit showed that 42% of this patient cohort (48.9% of males and 35.3% of females) taken from the postgraduate orthodontic treatment waiting list exhibited carious lesions that required restorative treatment. All lesions recorded were on permanent teeth only. This figure was disappointing as patients are advised, as were patients in previous orthodontic audits^{5,10,11} in the RoI, of the importance of good dental health at the time of orthodontic assessment. It compares to 37% found in a similar audit carried out on 59 patients prior to commencing orthodontic treatment in Sheffield.² The gold standard in that audit, as in this, was that all patients should have active caries diagnosed and managed prior to commencing orthodontic treatment.² Audits carried out in the RoI and the UK showed that dental caries requiring restoration were detected in 20-47%^{5,10,12} of patients referred for orthodontic assessment but one study finding of 37.1%¹¹ examined permanent molars only. Diagnosis

of caries in three audits^{5,10,11} appears to have been without the aid of radiographs, while the Manchester¹² study used DPTs to aid caries diagnosis in an unstated number of patients, so the true caries prevalence may be higher. In the audit presented here, 50% of 15-year-old patients were caries-free, which lies within the 49-57.8% of children found to be caries-free in the Southern Health Board region (the area that includes the HSE South region) in 2002.¹⁴ Class 11 Division 1 (46%) was the most common malocclusion (and had the greatest proportion of caries requiring restoration [47.8%]), which compares to 47.1% reported in the Eastern Health Board audit.¹⁰ In addition, our audit confirms available evidence that DPTs are not as sensitive at detecting caries as posterior bitewing radiographs⁶ with 43.3% of the carious lesions detectable by bitewing radiography only. This compares to 50% in the Sheffield audit.² No patients in this audit had bitewing radiographs taken in the previous six months, suggesting that posterior bitewing radiographs may not be taken as frequently as guidelines recommend.⁸ Time and financial constraints,¹² and concerns about exposure to radiation,² have all been suggested as reasons for this.

The Sheffield audit recommended that a recent set of bitewing radiographs should be available prior to starting orthodontic treatment.² Two audits reported that 42%⁵ and 73%² of patients had attended a primary care dentist in the preceding six months, while there was only 6% attendance in the current study. The prevalence of caries in the Sheffield audit in those patients seen by a primary care dentist in the previous six months was 37%, which compares to 33% in this study. With the caries prevalence in the current cohort, more frequent recall for monitoring of caries status would appear to be justified. Public dental health provision in the HSE South area, however, involves targeting primary schoolchildren in second and sixth class (approximately eight and 12 years of age, respectively) for recall and any necessary treatment. Current cuts in funding and recruitment make a more reduced recall interval doubtful and this is likely to impact upon all children's access to dental care required. It is

acknowledged that expansion of the orthodontic services nationally in recent years has strained the primary dental care service.¹ However, close follow-up of those awaiting orthodontic treatment to ensure that all primary care needs are met, would be beneficial to the HSE orthodontic service. The findings of this audit echo the conclusion made by Dowling *et al.*¹⁰ in 1997 that the failure of patients on orthodontic waiting lists to maintain dental health despite being advised to do so warrants further investigation.

Conclusions

In the patient cohort assessed the following conclusions can be drawn:

- a total of 42% of patients (48.9% of males and 35.3% of females) taken off the postgraduate orthodontic treatment waiting list had carious lesions in permanent teeth that required restorative intervention prior to orthodontic treatment;
- a total of 43% of carious lesions detected by posterior bitewing radiographs were not detected on DPTs of the same patients; and,
- only six patients had attended a primary care dentist in the six months prior to being taken off the orthodontic treatment waiting list and two patients were diagnosed with carious lesions that required restorative intervention.

Recommendations

- Foster closer links with primary care dentists so that the caries needs of patients are addressed as required prior to being taken off the postgraduate orthodontic treatment waiting list;
- the importance of regular dental review and caries prevention will continue to be stressed to patient and parent at orthodontic assessment and when the patient is about to start orthodontic treatment;
- posterior bitewing radiographs, if not already available, should be taken of patients if clinically indicated prior to commencing orthodontic treatment; and,
- re-audit is recommended at the start of the next postgraduate student intake to evaluate the effect of the changes introduced and to ensure that treating postgraduate students are complying with Unit guidelines to have bitewings, if clinically indicated, at the start of orthodontic treatment.

Acknowledgement

We are grateful to the Faculty of General Dental Practice for providing permission to use Table 2 (Summary of the FGDP guidelines for the taking of posterior bitewing radiographs).

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Effects of traumatic dental injuries to primary teeth on permanent teeth – a clinical follow-up study

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Aim: This study evaluated the prevalence of developmental sequelae to permanent teeth (DSP) after traumatic dental injuries to primary teeth (TDI-1) and their association with age, gender, type of injury, recurrence of injury and post-traumatic damage to primary teeth.

Materials and methods: Dental records of 2,725 children treated from February 1993 to December 2008 in a private paediatric dental clinic were examined. A total of 308 records had 412 primary teeth that sustained traumatic injuries. Age at the time of injury ranged from four months to seven years. A chi-squared test and logistic regression were used for statistical analyses.

Results: One hundred forty-eight children (241 teeth) were followed up until the eruption of the permanent successor. The prevalence of DSP was 22.4%. Discolouration and hypoplasia were the most frequent abnormalities (74.1%), followed by eruption disorders (25.9%). Age at the time of TDI-1 was the only variable significantly associated with DSP. Sequelae were most prevalent among children who suffered an injury between one and three years of age.

Conclusions: Children who sustain traumatic dental injuries should be followed up regularly for an early diagnosis and treatment of possible DSP.

Dental Traumatology 2011; 27 (2): 117-121.

Twelve-month space changes after premature loss of a primary maxillary first molar

Yai-Tin, L., Wen-Hsien, L., Yng-Tzer, J.L.

Background: Many early investigations concerning space changes following premature extraction of primary molars had a cross-sectional design, a small sample size, and a somewhat crude methodology, which may have led to misunderstandings.

Aim: The aim of this study was to use established longitudinal data to investigate ongoing (12-month) dental arch space problems arising as a result of premature loss of a primary maxillary first molar.

Design: Thirteen children (mean \pm SD age at time of tooth extraction: 6.0 ± 0.74 years) with unilateral premature loss of a primary maxillary first molar were selected for this study. Maxillary dental study casts were obtained from participants two or three days after the tooth was removed, as well as at a follow-up appointment 12 months later. Six reference lines were measured on the study cast: D + E space; arch width; arch length; intercanine width; intercanine length; and, arch perimeter. For each participant, the D + E space of the contralateral intact primary molar served as a control. A paired t-test was used to

compare the cast measurements between initial examination and 12-month follow-up. A t-test was used to compare D + E space changes with those of the control group.

Results: The D + E space of the extraction side after 12 months was significantly smaller than that of the control side ($P < 0.05$) and the initial D + E space ($P < 0.05$). A significantly greater arch perimeter, intercanine width, and intercanine length were found after 12 months compared with the initial parameters. No significant differences were found, however, in arch width or arch length between the initial examination and the 12-month follow-up examination ($P > 0.05$).

Conclusions: The 12-month space changes in the maxillary dental arch after premature loss of a primary maxillary first molar consist mainly of distal drift of the primary canine toward the extraction site. Mesial movement of permanent molars or tilting of the primary molars did not occur. An increased arch dimension was found especially in the anterior segment (intercanine width and length). From the results in this study, there is no need for the use of space maintainers in cases of premature loss of a primary first molar.

International Journal of Paediatric Dentistry 2011; 21: 161-166.




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Conventional and digital radiography in vertical root fracture diagnosis: a comparison study

Tofangchiha, M., Bakhshi, M., Bashizadeh Fakhar, H., Panjnoush, M.

Background: Vertical root fractures (VRFs) can only be detected by radiography. In recent years, direct digital dental radiography (DDR) has become a substitute for film-based radiography. The purpose of this study was to compare the accuracy and reliability of charge couple device (CCD)-based direct digital radiography with conventional radiography (CR) in VRF diagnosis.

Methods and materials: In this *in vitro* study, 230 extracted single-rooted human teeth were endodontically instrumented. VRFs were performed experimentally in half of the samples. Each tooth was imaged using the paralleling technique with E-speed film and a CCD-based digital image receptor. Two oral radiologists interpreted the images and repeated the procedure a month later with half of the samples. The accuracy, sensitivity and specificity of each technique were determined. The reliability and degree of agreement were also determined by means of Cohen’s Kappa analysis. χ^2 test was used to compare two observers’ diagnoses, considering the location of the fracture line.

Results: The accuracy of CR and DDR was 65% and 70%, retrospectively. The sensitivity was 60% for CR and 61% for DDR, and the specificity was 70% for CR and 78% for DDR, but the differences were not significant. The interobserver reliability was moderate for CR (K = 0.366, 95% CI) and fair for DDR (K = 0.538, 95% CI).

Conclusion: No significant difference was seen between the two techniques. The specificity of DDR was slightly better than CR, and their accuracy and sensitivity showed small differences.

Dental Traumatology 2011; 27 (2): 143-146.

Comparison of working length determination with radiographs and four electronic apex locators

Vieyra, J.P., Acosta, J.

Aim: To evaluate the accuracy of the Root ZX, Elements-Diagnostic, Precision AL and Raypex 5 electronic apex locators (EALs) when compared to radiographs for locating the apical constriction.

Methodology: The apical constriction of 693 canals in 245 maxillary and mandibular teeth was located *in vivo* with four EALs and radiographically. After extraction the actual location of the apical constriction was determined visually and with magnification. A paired samples t-test, χ^2 test and a repeated measure ANOVA at the 0.05 level of significance were used to determine differences between the groups.

Results: For anterior teeth, the Root ZX, Elements, Precision AL, Raypex 5 and radiographs located the apical constriction 89.09%, 83.63%, 85.45%, 81.81% and 32.72% of the time, respectively. For premolar teeth, the Root ZX, Elements, Precision AL, Raypex 5 and radiographs located the apical constriction 75%, 61.6%, 64.28%, 61.6% and 32.14% of the time, respectively. For molar teeth, the Root ZX, Elements, Precision AL, Raypex 5 and radiographs located the apical constriction 69.01%, 50.49%, 65.4%, 43.93% and 14.59% of the time, respectively. There was no statistically significant difference between the four EALs (P=0.05).

Conclusion: Measuring the location of the apical constriction using the four apex locators was more accurate than radiographs and would reduce the risk of instrumenting and filling beyond the apical foramen.

International Endodontic Journal 2011; 44 (6): 510-518.

Quiz answers

(questions on page 128)



1. An epulis – a localised gingival swelling and rarely a true neoplasm. It is a non-specific term for tumours or tumour-like masses of the gingivae.

2. Conditions that give rise to localised gingival swellings:
 - ▶ fibroma (fibrous epulis);
 - ▶ pyogenic granuloma;
 - ▶ pregnancy epulis;
 - ▶ peripheral giant cell granuloma;
 - ▶ peripheral ossifying granuloma;
 - ▶ metastatic lesions;
 - ▶ drug-induced gingival hyperplasia; and,
 - ▶ leukaemic infiltrate.
3. A painless, exophytic, nodular mass often pedunculated with a smooth or lobulated surface. The colour should be the same as the surrounding gingiva in a fibrous epulis, but deep red in a pyogenic granuloma, or purple blue in a giant cell granuloma.
4. Biopsy to confirm differential diagnosis (always take a photograph before a biopsy).
5. Excision, post-partum in the case of a pregnancy epulis.

Unlocking the value in your patients

Finding out what your patients want and delivering that service is crucial for survival in the post-recession environment, says LEANNE PAPAIOANNOU.

The wild spending of pre-recession Ireland will not return for a while yet, but patients won't stop spending on dental procedures – they just spend differently. Many post-recession patients are now focusing on what makes them happy. It's not just about stretching their money, it's about the recognition and service they receive.

Patients are looking to interact with dentists who deliver what they say they will and make it easier to do business with them. With this in mind, dental practices need to focus on what patients want now and what they will want in the future, which is very different to what they wanted before.

Patient understanding, service and loyalty are core elements to any dental practice, and it is imperative that you deliver on them; otherwise, patients will leave you for the promise of better service from your competitors.

Many dentists who have identified this need and are pursuing it follow what I like to term the 'VIP model', which stands for 'value, insight and personalisation'. By following this model, they are able to unlock greater value from within their existing patient base, while also reducing their marketing spend and therefore increasing profitability. So how can this be put into action for your dental practice?

The principles are fairly standard and should work for you no matter how big or small your practice is.

Value

Do you know who your top 10 patients are? Do you know the value of each of them to your practice? Do you measure their value purely on their spend?

The reality is that money is important, but in a climate where the average spend per patient is decreasing, we have to look at other ways to identify our most valuable patients.

The trick to identifying your most valuable patients is advocacy. In order to identify the patients who are your biggest advocates, we need to look for patients who are:

- excited about new products and services that you have to offer;
- open about what they like about your products/services and tell you when they are unhappy; and,
- good at referring you to other potential patients.

Knowing the metrics that determine the value of a patient puts you in a more informed place when it comes to strategic decision making for your practice. You now know what to influence in order to increase value and thus can act accordingly.

Once you have identified who your top patients are, make sure that

you keep in contact with them on an ongoing basis, as they are your practice's biggest asset.

Insight

Now that you know who your top patients are and the factors that determine their value, you need to identify ways to increase their activity so as to increase their value and your profits. In order to do this, you need to know what your patients want now and what they will want over the next year compared to what they wanted before.

This insight allows you to plan your product and service development in order to better meet the needs of your patients and ensure that they stay happy and keep coming back. This is as simple as it sounds, and the most effective way of gaining this insight is to just ask them what they need. In some cases you may find that you already supply the products or services they need but they just didn't know it. They only know you for the dental services that they have used in the past, so let them know what else you have to offer.

By already having your patients segmented by value, choose a few key patients at different parts of the value spectrum (high value, medium value and low value) and ask them what is happening in their environment and how you can help them. Then ask them what you could offer in terms of product innovation, changes to existing products, terms of payment, etc., that can help them. What goes without saying here is that you must be genuine in your interactions and in caring about what they need, not just behave as though you care but do nothing about it. This is contrary to common thinking, or what your competitors may be doing, which means that you will go a long way towards gaining their loyalty.



By the end of this process you will know what your patients need and can then go out and deliver it to them. By giving them what they actually need as opposed to what everyone else thinks they need (or what they used to need), you will provide a better service to them and get more dental work from them.

Personalisation

At this final stage of the VIP model, you are developing closer relationships with your patients. And as with any relationship, your communication needs to become more personal and more relevant as the relationship develops.

What does this mean for you?

When you send out a direct mail to your patients, it needs to be personalised. How would you feel if I called you up to ask you what you needed, followed up with developing the product and service to help you, then sent you a brochure that says ‘Dear Patient’?

It is vital that you use the information you have collected during your relationship-building exercise in your communication to your patients. It does not cost a significant amount of money to personalise each piece of communication that you send to them, and in most cases it

would only be a marginal difference to a generic piece of communication, yet the impact and value this can create in terms of patient loyalty is priceless.

The VIP model can be as simple or as detailed as you choose to make it and this can be determined by your available resources. No matter which route you choose to take, the results will be noticeable to your bottom line. If you genuinely show your patients that you care and take action to prove it, they will feel like a VIP in your practice. Everyone likes to feel important, so they remain loyal to the dentists that make them feel this way. If you do this, you will be unlocking the true value within your existing patient list.

Now isn't this something that all Irish dental practices should be doing?



Leanne Papaioannou is Managing Director of Chilli Pepper Marketing, a specialist retention marketing agency that helps companies to develop effective retention strategies that build stronger patient relationships.

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Can I get a witness?

The use and role of expert witnesses is of great importance to Dental Protection in defending members, both in relation to claims of clinical negligence and to cases being heard by the Dental Council.

An expert is usually considered to be an individual with knowledge and experience in a particular field beyond that to be expected of a layman. An expert witness as used by Dental Protection is an experienced clinician who, in choosing to act as an expert witness, offers to make this knowledge and experience available to help the court understand the issues in a case before coming to a judgment.

When it comes to expert evidence, there are a variety of issues to consider, both from the perspective of the dentist being assisted by Dental Protection and that of the expert witness involved. When a claim is made, the patient alleges that the treating dentist has been negligent and that this has caused harm. Meanwhile, in cases brought before the Dental Council, the issue is the dentist's fitness to practise. Different legal tests apply to each situation, but experts are usually required to be instructed by Dental Protection on behalf of our members in both situations. A patient raising a negligence claim must prove:

1. That there was a duty of care.
2. That there has been a breach of that duty. The patient must show that the dentist was guilty of an act or omission that no other dentist, of equal status and skill, would have committed if acting with ordinary care (the 'Dunne' test).
3. Finally, causation must be established by proving, on the balance of probabilities, that the act or omission by the dentist caused or made a material contribution to the injury.

If the patient succeeds in proving these three elements of their claim, the court will then look at the question of damages. But how are these things proven? The answer is that each side will call expert witnesses to inform the court of their views on the points listed above.

Issues for expert witnesses

Before the matter ever reaches trial there are various meetings and conferences that the expert and the dentist will be asked to attend, along with the instructed solicitors and barrister. Experts should be aware of this obligation when accepting instructions.

An expert is not just a witness, but is also a professional adviser, and owes a duty of care to those instructing him or her. For example, experts have a duty of confidentiality to the instructing solicitors. If asked to examine a patient prior to writing an expert report, it is important to understand that the opinion and report are confidential, in the early stages, to those instructing, and that it is not appropriate, for example, to advise the patient during the examination of the merits of their claim.

An expert must understand exactly what is being asked and, if they are unsure, must seek clarification of the instruction. It is necessary to be clear about the rules, both legal and ethical, governing input into a case. It is important to note that an individual is not obliged to accept instructions, and ethically and professionally should decline to accept instructions outside his or her field of expertise.

The expert report is the expert's 'showcase' and it is important to ensure that it is appropriately impressive in both format and content. Reports should be prepared in a structured and systematic way.

The relationship between the solicitor, the expert and the courts in relation to the admissibility of expert evidence, the rules of evidence, legal professional privilege and disclosure obligations regarding expert reports is governed by law. Ethical guidance is also available to ensure that those acting as expert witnesses are fully aware of their obligations and act appropriately. There is no expert witness institute in Ireland at present, but helpful information can be obtained from the UK Expert Witness Institute. With regard to legal constraints it is important, when providing expert opinions in Ireland, to be aware that all written communications to the instructing solicitor, including emails, are potentially disclosable to the opposing side in the event that the expert is called to give evidence at trial. An expert's overriding duty is to the court and an expert witness should provide independent assistance to the court by way of unbiased opinion in relation to matters within his or her expertise. An expert witness should never assume the role of advocate.

Risks to experts

In a very recent case in the UK, the previously longstanding principle that expert witnesses were immune from being sued for negligence was overturned. The leading Irish case is that of *O'Keefe v Kilcullen* and the issue was also recently considered in the Irish case of *WJ Prendergast and Others v Redver Skelton*, in which the court dismissed a claim against an expert witness and found that he was entitled to immunity from being sued in negligence. It remains to be seen whether the change in UK law will have any persuasive influence on the Irish courts.

It therefore appears clear from the case law that, at present, expert witnesses in Ireland are immune from suit. However, this is in relation to evidence given in court and to the work leading up to this. Complete immunity in relation to the initial advice given is not guaranteed. An expert witness owes a duty of care to those instructing him or her and will only be immune in respect of statements that are closely connected with the proceedings. Immunity can be lost if the expert is found to have abused the immunity, and they could be held liable for wasted costs if they disregard the duty to the court.

The bad news is that those acting as expert witnesses are not immune from action by their professional regulatory body. Dentists in Ireland may be aware of the GMC case in the UK against Professor Roy Meadow on this very point. In the *Prendiville* case, the Medical Council initially found three medical experts guilty of misconduct for reports based on insufficient information. Although the decision was later set aside for procedural reasons, this case is clear authority that experts are not immune to action by their professional regulatory body.

Experts must therefore ensure that they do not attempt to provide

evidence beyond their area of expertise, and that they provide the court with an honest, unbiased opinion.

The future

A recent Irish Law Reform Commission consultation paper made various recommendations with regard to expert evidence, for example that there should be a formal guidance code for expert witnesses. It has also been proposed that there should be a test to assess the reliability of expert evidence (although it is unclear what form this would take) and a ban on any fee arrangements that are contingent on the outcome of the case.

Summary

Any dentist could be required to give factual evidence regarding clinical findings in court or before the Dental Council. However, an individual working as an expert witness offers to share knowledge and experience gained over many years, in order to assist in the resolution of the case. Working as an expert is rewarding and challenging, and is not without professional obligations, of which all experts must be aware. However, the use of experts is a crucial and worthy role in defending professional colleagues and the reputation of the profession.

Further reading

www.ewi.org.uk

Payne v Shovlin, Supreme Court, February 2006

National Justice Compania Naviera SA v Prudential Assurance Co Ltd [1993] Lloyd's Rep 68 at 81-82

Stanton v Callaghan [2000] Q.B. 75

Jones v Kaney [2011] UKSC 13

O'Keeffe v Kilcullen [2001] IESC 84

WJ Prendergast and Others v Redver Skelton [2007] IEHC 192

Prendiville & Anor v The Medical Council & Ors [2007] IEHC 427 (2007)



Helen Kaney BDS LLB Dip LP FFGDP (UK) worked for 11 years in general dental practice before studying law. She then spent several years working as a solicitor, where she specialised in defending clinical negligence claims against doctors and dentists. Helen now works for Dental Protection as a dento-legal adviser and is part of the team that handles cases for members working in Ireland.



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Staff issues to consider when buying or selling a dental practice

Whether you are buying or selling a dental practice, it is essential that you consider your obligations towards the employees already working in the practice.

European Communities (Protection of Employees on Transfer of Undertakings) Regulations 2003

The Transfer of Undertakings Regulations apply where a business or part of a business transfers from one owner to another (for the Regulations to apply, there is a requirement that a legal transfer of ownership takes place, e.g., the Regulations will not apply where there is a transfer of share capital only). The Regulations offer protection to the employees in the event of a transfer, and establish the responsibilities of both the previous owner and the new owner.

For a transfer of undertaking to take place:

- there must be a change in the person (either an individual or a company) responsible for running the undertaking/business;
- the previous economic activity of the undertaking/business must be carried on by the new employer; and,
- the undertaking/business must be transferred as a going concern.

The Transfer of Undertakings Regulations offer employees the following protection:

▶ Employees automatically transfer to the new owner

Where a transfer takes place, the new owner is obliged to take on the existing staff of the business. The transfer of the employee from the transferor to the transferee is automatic, irrespective of the wishes of either party. This is subject only to the right of the employee to object to a transfer of the employment relationship.

▶ Employees' service continues unbroken

The employees are entitled to continuity of service – their accrued service with the original employer transfers to the new owner.

▶ Employees are entitled to same terms and conditions

The employees are entitled to terms and conditions of employment



with the new employer that are no less favourable than those enjoyed with the previous employer.

▶ Purchaser and vendor are obliged to keep employees informed

The parties to a transfer are obliged to notify, inform and consult with employees and their representatives before the transfer takes place.



Clare Dowling is the IDA Employment and Communications Officer. *Pro forma contracts of employment are available for members to download from the Irish Dental Association's website – www.dentist.ie. Further advice is available from Clare in IDA House.*

Practical advice – prior to transfer

1. Carry out thorough due diligence

As the majority of the risk may rest with the prospective purchaser, it is essential that he or she obtains professional advice and carries out a due diligence examination of the entire practice, including the staff, prior to concluding the transfer. Your solicitor and/or professional adviser should advise you in relation to this.

2. Ensure that you receive written terms and conditions of employment for all staff

It is essential that any prospective owner

receives a written copy of the terms and conditions of employment for all staff. Problems may arise where the new owner is not aware of the agreed terms and conditions of employment, such as length of service, annual leave, retirement age, etc.

3. Remember that employees' service continues unbroken despite the transfer of ownership

Due to the operation of the Transfer of Undertakings Regulations, employees are guaranteed continuity of service; therefore, their service commences with their employment in the practice, not on the date the new owner purchases the practice. Length of service is used to

calculate most employee compensation payments, including redundancy payments, so it is important for prospective purchasers to bear the length of service of employees in mind when considering the purchase of a practice.

4. Seek advice

The purchase of any business, including a dental practice, is a complex process that requires specialised advice for the individual circumstances. Prospective purchasers should ensure that they receive proper professional advice when considering the purchase of a practice. While the issues may not be apparent at the time of purchase, the liability may rest with the new owner in years to come.

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Please read these instructions prior to sending an advertisement. On the right are the charges for placing an advertisement for both members and non-members. Advertisements will only be accepted in writing via fax, letter or email (fionnuala@irishdentalassoc.ie). Non-members must pre-pay for advertisements, which must arrive no later than July 15, 2011, by cheque made payable to the Irish Dental Association. If a box number is required, please indicate this at the end of the ad (replies to box number X). Classified ads placed in the Journal are also published on our website www.dentist.ie for 12 weeks.

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Part-time associate (two/three days) required for busy Navan dental practice. Fully computerised, modern surgery with Kavo chairs, digital OPT and experienced staff. Please Email: info@navandental.com.

Rathangan Medical Centre, Co. Kildare. Dentist required for bespoke

unit. Highly incentivised rent. Busy pharmacy and GP centre already *in situ*. Busy commuter town, large surrounding area. Contact Shane Ryan MPSI, Email: shane@ryanspharmacy.ie.

West of Ireland town: mature and experienced dental surgeon wanted to manage and work in practice. Excellent remuneration and conditions. Email: lights.harbour@gmail.com.

Experienced dentist required to cover maternity leave. Modern city centre practice, computerised, digital x-rays, excellent support staff. Start mid August. Please Tel: 087-903 5461, or Email: reddy_mary@hotmail.com.

Experienced dentist required for two days a week for private practice in Limerick. Immediate start. Excellent support and conditions. Tel: 087-280 5518, or Email: patrickosull@gmail.com.

Locum required in established family practice in Limerick to cover for maternity leave. Busy, well-equipped modern surgery with digital OPG, fully computerised and excellent support staff. Must be experienced, conscientious, friendly and patient-oriented. Start August. Tel: 087-938 0765, or Email noelle@dotcobbe.com.

Experienced dental locum required for July 2011 full- or part-time. Busy practice in Midlands town. One hour Dublin, 40 minutes Kilkenny. Please reply by email with CV if possible. Email: cedar.clinic.dental.surgery@gmail.com.

Part-time locum dentist required for South West Dublin practice. Email: tullyhouse@gmail.com.

Paediatric dentist required weekly to replace departing colleague in

general dental practice with other visiting specialists. Nitrous oxide on site with fully trained staff. Children's preventive dental unit under development also. One hour from Dublin. Tel: 087-266 6524 in confidence, or Email: info@pembrokedental.ie.

Endodontist required one or two days per week to take over existing full book at a practice 45 minutes from Dublin. Equipment state-of-the-art with superb support staff. Please contact Denis Coughlan, Tel: 086-815 7705, or Email: deniscoughlan@hotmail.com.

Full-time position for DSA/receptionist in Kilkenny City, must be computer competent, with good clinical and front desk experience. Please Email CVs to 1014mck@gmail.com for consideration.

Experienced dental surgery receptionist/assistant required for paediatric dental practice, Galway. Training/qualification essential (paediatric preferred). Excellent office skills, confidence and interpersonal skills. Four days a week; good terms and conditions. CV with cover letter to recruitwestdent@gmail.com.

DSA with computer literacy essential to work part-time and to cover staff holidays in Dublin 12 practice. No agencies. Email: cliodhna.heavey@gmail.com.

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JUNE 2011

North Munster Branch, IDA – Meeting

The future of state-funded dentistry

June 1

Strand Hotel, Limerick, 8.00pm

Roadshow on the future of state-funded dentistry.

IDA
MEMBERS
ONLY

The IDA Golf Society – Metropolitan golf outing

June 12

Druids Glen Golf Club, Co. Wicklow

Please contact Ciaran Allen, Tel: 047-71400, or Email: ciaranallendental@eircom.net for information or to confirm attendance. Numbers limited.

IDA
MEMBERS
ONLY

Midland Branch, IDA – Golf outing

June 17

Glasson Golf and Country Club

Tee off is 2.30pm. Cost of golf and three-course meal is €80.

IDA
MEMBERS
ONLY

The Irish Society for Disability and Oral Health – Annual Conference Autism Friendly Dentistry

June 24

The Convention Centre Dublin, Spencer Dock, Dublin 1



Contact Adrienne Dolan, Tel: 087-798 7240,
Email: adrienne.dolan@gmail.com, or log on to www.isdh.ie

SEPTEMBER 2011

IDA Golf Society – Captain's Prize

September 3

Carlow Golf Club

IDA
MEMBERS
ONLY

The 24th Annual Meeting and Refresher Course of the European Society of Head and Neck Radiology (ESHNR)

September 8-10

Congress Center Oud Sint-Jan, Bruges, Belgium

More information on the programme can be found on the website – www.eshnr2011.be.

TG Medical training facilities launch

September 17

Plaza Hotel, Tallaght

For further information contact Ralf Sander in TG Medical (Ireland) Ltd, Tel: 01-452 4818.

JUNE 2012

Europerio7 – 7th Congress of the European Federation of Periodontology

June 6-9

Vienna, Austria

Learn from renowned experts on the newest techniques and treatment methods in the fields of: periodontology, implantology and dental hygiene. More information on this conference can be found on the website – www.europerio7.com.

OCTOBER 2012

21st Congress of the International Association for Disability and Oral Health

October 17-20

Sydney, Australia

For further information see www.iadh2012.com



CLINICAL RESEARCH – PRINCIPAL INVESTIGATOR

UK Based (North West)
The opportunity has arisen for a dentist to join Intertek Clinical Research Services, part of the Intertek Group PLC, a leading contract research organisation specialising in the clinical evaluation of oral care products. The main focus of the position is to lead the execution of clinical trials evaluating oral care products for a number of multinational clients.

Main duties and responsibilities:
After appropriate training, the successful applicant will:

- lead the design and management of clinical trials;
- act as a clinical assessor to determine the efficacy and safety of novel oral care products using a variety of clinical indices;
- hold responsibility for the welfare of volunteers on the trials in which they are involved; and
- prepare the publication and presentation of results.

Applicants should have the following:

- registration as, or eligible to be registered as, a dentist in the UK;
- an interest in and knowledge of clinical research, previous experience would be an advantage; and,
- team leadership skills with the ability to manage a small team of clinicians and develop clinical expertise within the group.

In return the successful candidate will receive:

- salary: circa £55K plus benefits; and
- full training with the opportunity to study for further qualifications.

Applicants should send a CV via email to: steve.thorn@intertek.com or by post to Steve Thorn, Intertek Clinical Research Services, 6 Capenhurst Technology Park, Capenhurst, Chester CH1 6ER, UK. Tel: 00-44-(0)151 347 4810.
Closing date – Friday July 8, 2011.

000305

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- ✓ Tartar
- ✓ Enamel Erosion
- ✓ Cavities
- ✓ Bad Breath
- ✓ Gum Problems
- ✓ Staining

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in better quality anterior bone and offer maximum support of the prosthesis by reducing cantilevers. They also help eliminate the need for bone grafting by increasing bone-to-implant contact. All-on-4 can be planned and performed using the NobelGuide treatment concept, ensuring accurate diagnostics, planning and implant placement.

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www.nobelbiocare.com