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August/September 2013

IDA
irish dental association

Journal of the Irish Dental Association

Iris Cumainn Déadach na hÉireann

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Effect of phase I periodontal therapy on pro-coagulant state in chronic periodontitis patients – a clinical and haematological study

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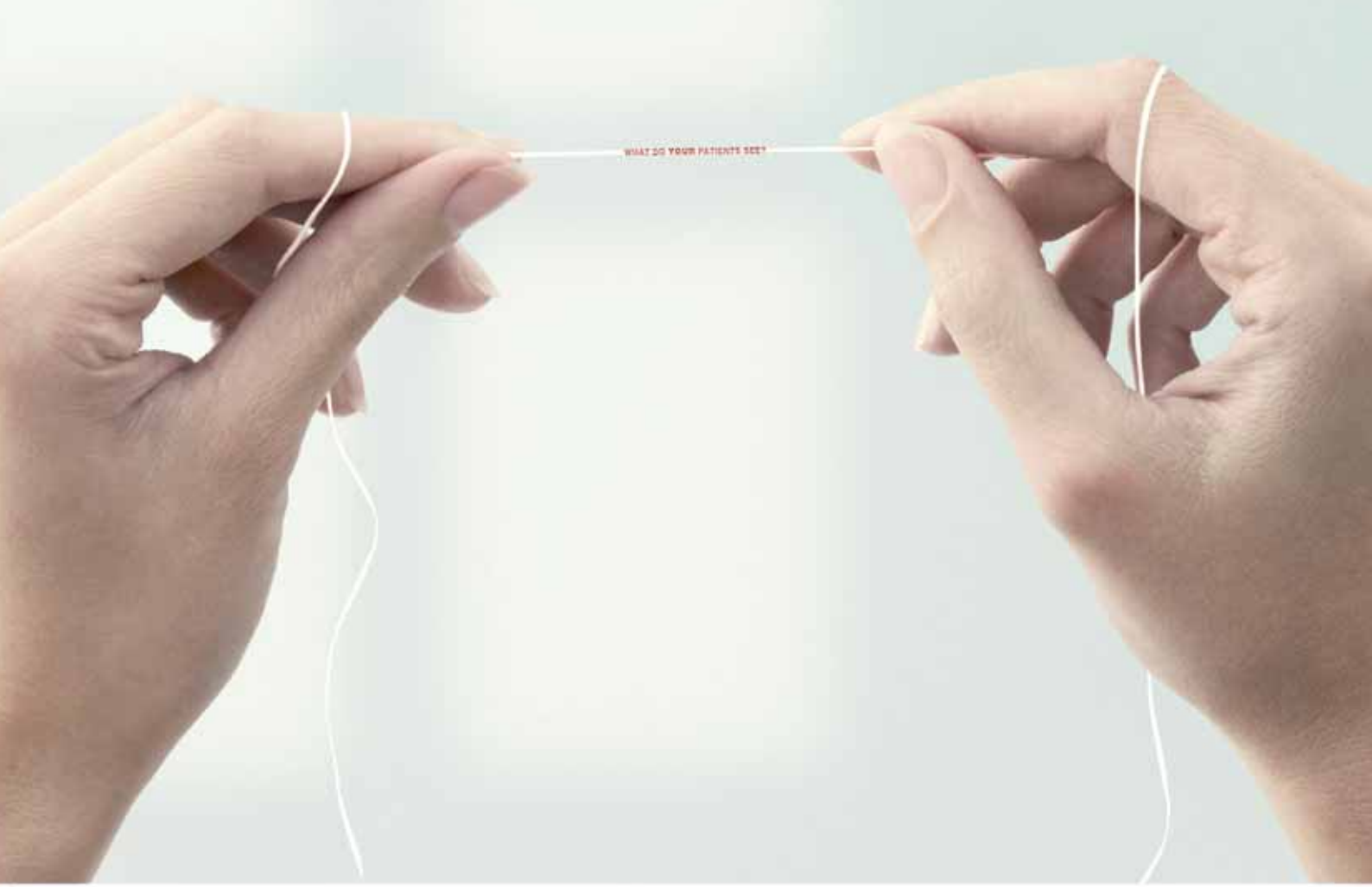

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1 UK Adult Dental Health Survey 2009, NHS Information Centre for Health and Social Care.

Improving regulation

Honorary Editor PROFESSOR LEO F.A. STASSEN reflects on the opportunities provided by the reform of the Dentist Act.

The Association has reacted with great clarity to the consultation phase offered by the Department of Health prior to the introduction of a new Dentist Act. The reform of the 1985 Act is an opportunity to improve our regulatory provisions and thereby upgrade the provision of dental care in Ireland. Following considerable collaboration with a wide range of interests in the profession, the Association has made a substantial submission to the Department of Health. It addresses all of the main issues of concern to dentists.

Lay majority

Given the non-professional majority already introduced in the governing council of other related professions, it is likely that the Government will consider the same for dentistry. The Association argues that an equal number of lay and professional members would in the best interest of the profession and the public. It specifically advocates the addition of representatives of auxiliary dental professions to the Board of the Dental Council.

On this issue, it is often observed that dentists are much more likely to be tougher on errant members of the profession than members of the public, particularly in relation to fitness to practice. In any case, the Association requests that the Dental Council should be asked to advise the public on functions relating to the practice of dentistry including care and treatment outside the jurisdiction where that care and treatment is advertised and arranged in Ireland but provided abroad.

Fitness to practice

There is a major concern among all health professionals about the proceedings of the fitness to practice hearings against medical doctors. In some cases, prominent media coverage has been given to the charges against the doctor at the opening of the hearing, causing severe anxiety for the doctor and their family. Where the doctor is subsequently cleared of these charges, a great inequity appears to exist. The Association has submitted to the Department that fairness to all parties is best served by insisting on the names of the parties not being published or broadcast outside of the hearing except and until charges of serious misconduct or poor professional performance are upheld.

Specialists

There is an obvious need for recognition of a greater number of specialist divisions. In most other comparable countries, the number of specialist divisions ranges between nine and 13. Specialties should only be recognised within fields that require knowledge and skills beyond those possessed by dental graduates and which assume a specified period of postgraduate training or experience.

CPD

Everyone agrees on the need for mandatory CPD. However, the Association makes the point that detailed provisions for adherence to such an obligation would best be devised by the Dental Council. The point is also made that the HSE should support and facilitate the maintenance of professional competence by independent contractors that are engaged to provide care and treatment to eligible patients.

Direct access and other issues

A lack of clarity in the consultation documentation around the issue of direct access to auxilliary dental professionals has raised concern in the Association. It appears to give rise to a different standard of care being made available to certain and possibly more vunerable cohorts of patients. This will need further discussion. On other issues, the Association wants:

- responsibility for registering and regulating practices to be given to the Dental Council;
- a lifting of the ban on incorporation of dental practices;
- establishment of mandatory registers for dental auxiliaries;
- consideration of a register for dental students and the introduction of a Foundation Training Scheme on graduation; and,
- adoption of American Dental Association style principles in relation to advertising of dental services.

This edition

In this *Journal*, we learn of the motivation of Association President Dr Seán Malone to communicate about the high standards of the profession in Ireland; and of the challenges dentists face in setting up a new practice, as experienced by Dr Nicola Zammitt.

In our peer-reviewed papers, we examine the attitudes of dental patients in Galway; test the effect of periodontal therapy on systemic inflammation; and, review the literature on commonly used topical oral wound dressing materials.

Prof. Leo F. A. Stassen
Honorary Editor

Major developments in Irish dentistry

IDA President SEÁN MALONE welcomes the appointment of a Chief Dental Officer, and the forthcoming Dental Bill.

In July, the Association finalised its submission to the Department of Health with regard to the new dental legislation. As it took almost 30 years to update the legislation relating to dentistry in Ireland, I hope this represents a true opportunity to introduce many real improvements in the profession for both patients and dentists. Many thanks to all members who sent their suggestions to IDA House.

Welcome to Dr Dympna Kavanagh, who takes up the post of Chief Dental Officer in the Department of Health. Dr Kavanagh also holds the post of National Oral Health Lead in the HSE. I wish Dr Kavanagh all the best in her new role and look forward to working with her in the future. Our concerns in relation to the manner in which the post was filled are well known. However, it must been seen as a positive development that the post has been filled after a lengthy vacant period, and it is reassuring that someone of Dr Kavanagh's calibre has agreed to take on this crucial role.

Significant dates

Mouth Cancer Awareness Day takes place on September 18. This is the third year of this laudable voluntary initiative by dentists. I would encourage as many of you as possible to take part. It is worth bearing in mind that you do not have to set aside an entire day and you can in fact volunteer for a portion of a day when signing up, which you can do on www.mouthcancerawareness.ie.

This year the Association celebrates the 90th anniversary of its first AGM. We are looking for old photos of members and Association events over the years. If anyone has any photos, I would ask you to please send them to IDA House for copying. It would be great to gather the history of the Association for almost a century. It is also hoped to hold a social event to mark the occasion. Further details will be announced soon.

A great time was had by all who attended the inaugural IDA social tennis tournament, which took place on July 5 in Fitzwilliam Tennis Club. It was great to meet fellow members in a social setting – something we dentists may not often set aside the time to do. It is hoped that this will be the first of many such events.

Staying with social events, I would like to remind you that the Captain's Prize takes place on Saturday, September 21, in Carlow Golf Club. Please note that this sociable event is open to all members. I would like to make a special invitation to lady golfers to take part in the competition.

Happy retirement to Eileen

Finally, I would like to record wholehearted thanks and best wishes to Eileen Greene who retired from IDA House in July. Eileen looked after membership subscriptions and accounts in the IDA for the past 13 years and is widely known in the Association. Eileen always dealt with members with the utmost courtesy and professionalism. I would like to join with all members in thanking her and wishing her every happiness in her retirement.

Dr Sean Malone
IDA President

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* Based on % hydraulic conductance reduction

References:
1. Dentine Tubule Occlusion, DOF 1 – 2012.
2. Tubule Occlusion Stability, DOF 3 – 2012.
3. Relief of Hypersensitivity, DOF 4 – 2012.
4. TNS – Sensitivity Market Research 1 – 2012.
5. Combination Tubule Occlusion, DOF 2 – 2012.

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Do not recommend this product if patients have a history of kidney disease, hyperoxaluria, kidney stones or malabsorption syndrome, or take high doses of vitamin C (1000mg or more per day).

FRONT ROW (from left): Dr Terry O'Brien; Dr Maeve O'Flynn; Dr Eleanor Hennessy; Dr Tony Connellan, Dr Junaid Nayyar; Dr Darren Cromey; and, Dr Sotirois Gkoles. MIDDLE ROW (from left): Dr Timothy O'Donnell; Dr Ciara Scott; Dr Libhin Hayes; Dr Catherine Wynne; Dr David Dore; Dr Patrick O'Brien; Dr Brendan Fanning; and, Dr Dan Gruenfeld. BACK ROW (from left): Dr Garett McGann; Dr Niall O'Connor; Fintan Hourihan; Dr Roger Ryan; Dr Joseph Bonner; and, Dr Matthew Crinion.

Dentists cause a racquet!

The Association's first ever social tennis 'gathering' saw the courts in Fitzwilliam Tennis Club bathed in glorious sunshine for a very memorable day.

Winners Dr Brendan Fanning and Dr Gerry Cleary with IDA President Dr Seán Malone.

Travelling from as far afield as Donegal, all concerned were thrilled to meet old friends and make new acquaintances. With the emphasis on the social as much as the tennis, the format gave everyone plenty of time for chat and court-side refreshments between some keenly contested games. The doubles format allowed everyone to play against a variety of pairings and plenty of court time was assured for everyone.

After labouring in the sweltering heat for a few hours, thoughts soon turned to the fantastic barbecue refreshments and some sociable rehydration. We were delighted to have the President, Dr Sean Malone, joined by his wife Norma, present some wine to the overall winners – Drs Gerry Cleary, Brendan Fanning, Terry O'Brien and Maeve O'Flynn.

Particular thanks to Drs Ciara Scott, Gerry Cleary and Garrett McGann for helping to organise the event along with the helpful staff in Fitzwilliam. There is already talk of the next social tennis day in 2014 and if it's half as enjoyable as the inaugural day everyone lucky enough to reserve a place will leave very happy.

Winners Dr Terry O'Brien (left) and Dr Maeve O'Flynn (far right), with IDA President Dr Seán Malone, Fintan Hourihan, and Dr Ciara Scott.

Dr Dan Gruenfeld; Dr Eleanor Hennessy; Dr Libhin Hayes; Dr Patrick O'Brien; and, Dr Timothy O'Donnell.

Cork Dental University Hospital final dental class 2013

FRONT ROW (seated; from left): Dr M Harding; Dr A Theocharopoulos; Prof. M Kinirons; Dr K Doran; Dr S Curtin; Dr F Burke; Prof. J Higgins; Dr M Murphy; Prof. D Mullane; Prof. M Hegarty; Ms L Horgan; Prof. F Allen; Dr E Allen; Dr C McCreary; Prof. F Gibbons; Prof. C O'Driscoll; and, Dr S Byrne.

CENTRE (from left): M Fung; C Ennis; A Barry; O Ni Choileain; E Franks; E Higgins; A Foley; N Ahmad Radzi; K Al-Ali; S Saleh; H Nor Nasarudin; E Hii; B Odirile; F Connors; M Kgosi; M Chia; T Tun Razak; K Magudu; N Coffey; L Walsh; A O'Herlihy; S Sweetnam; G Nugent; A Stack; T Chacko; R Mokgosi; and, D Ratshipa.

BACK ROW (from left): N McCarthy; I Mulvey; G Fitzgerald; D McGibney; K O'Shea; M McSweeney; C Ryan; M Kenefick; M Moloney; M Griffin; O Walsh; B Quinn; JB Spillane; and, T Murphy.

University of Dublin, Trinity College, Diploma in Dental Nursing graduates

Pictured with this year's graduates: FRONT ROW (centre): Professor Junn Nunn, Dean. Second row (far left): Tina Gorman, President, IDNA; Karen Dinneen, Acting Dental Nurse; and, (far right) Helen Farrelly, Dental Nurse Tutor; and, Paul Hatton, GSK. BACK ROW (far right): David O'Flynn, Registrar, Dental Council. GRADUATES: Shauna Baldwin; Cliodhna Bennett; Unica Paula Cabrera; Darta Dance; Niamh Dowling; Marie Gallagher; Emma Hayes; Pamela Keating; Kelly Martin; Maria McCallion; Orla McGonagle; Ciara McKenna; Ciara McLoughlin; Ciara Mollaghan; Jane Mulholland; Jennifer Murray; Emma O'Keeffe; Stephanie Purcell; Ciara Redmond; Niamh Reynolds; Stephen Shannon; Sinead Sullivan; Emily Sarah Sweeney; and, Gemma Walsh.

TCD Dental Hygienists

From left: Melissa Ryan; Carol McGovern, Dentsply Best Clinical Award and Colgate Travel Bursary Award; Aishling Hynes; Anneka Guray; Oonagh Cronin, GSK Best Community Project (Joint 1st); and Claire Brett, GSK Best Community Project (Joint 1st), Colgate Travel Bursary Award and Dental Council Best Overall Academic Award.

TCD Third-Year Dental Technology 2012/2013

Graduates: Cliodhna Coyle; Jessica De Stanlaigh; Agne Diliartaite; and, Laura Sarkaite.

CDUH Dental Nursing graduates 2013

FRONT ROW (seated; from left): Ms S Shakeshaft; Dr E O'Sullivan; Dr F Burke; Prof. F Allen; Dr N Ray; and, Ms M Harrington. SECOND ROW (from left): E Murphy; A Berkery; A Breen; A Clohessy; L Coughlan; M Connolly; E Coughlan; M Cosgrave; R Delaney; C Downing; and, C Palmer. BACK ROW (from left): L O' Donnell; J Foley; L Parker; M Fuller; S Prenderville; A Stuart; C Hendy; C Sheehan; O Hickey; S Toner; F Kelly; J Healy; M Waring; L Wharton; M Kelly; I Fenton; A O'Sullivan; J Kiely; C O'Brien; K McCarthy; Y O'Connell; C O'Flynn; and, D Madden.

CDUH Dental Hygiene graduates 2013

FRONT ROW (seated; from left): Dr O Barry; Dr S Curtin; Dr N Ray; Prof. H Whelton; Prof. F Allen; Dr F Burke; Ms A O'Keeffe; and, Ms M Collins. CENTRE (from left): Ms A Holohan; J O'Riordan; S Walsh; C O'Callaghan; N Kelly; S Heaney; C French; R Cafferkey; and, Ms C Murphy. BACK ROW (from left): C Mullins; G Shannon; M Madden; AM Flannery; AR Drumm; and, M Cotter.

TCD Postgraduate Diploma in Special Care

FRONT ROW (from left): Prof. June Nunn, Dean, Dental School, and Course Director; Dr Caroline Hartnett; Dr Emma Corrigan; Dr Declan Quinn; Dr Maura Haran; and, Dr Margaret McDonnell. BACK ROW (from left): Dr Alison Dougall, Course Lecturer; Dr Daniel Thompson; and, Dr Caoimhin Mac Giolla Phadraig, Course Co-ordinator.

< TCD Postgraduate Diploma in Conscious Sedation 2011-2012

FRONT ROW (from left): Prof. June Nunn, Dean, Dental School, and Course Director; Dr Mehnaz Kamali; Dr Nathalie Muller; Dr Breda Martin; and, Dr Ceire Fitzgerald. BACK ROW (from left): Dr Mary Clarke, Course Co-ordinator; Dr Ronan Fitzgerald; Dr Alison Dougall, Course Lecturer; Prof. Leo Stassen, Course Director; and, Dr Marcas MacDomhnaill. (Absent from the photo are Dr Colm O'Loghlen and Dr Daniel O'Hanrahan).

TCD Fifth-Year Dental Science graduates 2012/2013

Professor June Nunn, Dean (front row, centre) is pictured with this year's Dental Science graduates. GRADUATES: Noradilah A Razak; Nawaf Aslam Pervez (not present); Laura Anne Burns; Kate Carmody; Diarmuid John Coffey; Amy Considine; Kieran Cox; Vanessa Creaven; Madina Danishani; Rebecca Dowling; Conor Gordon; Elizabeth Green; Declan Francis Hayes; Hai Shan Ho; Mervyn Huston; Orla Malone; Caroline McKillen (not present); David McReynolds; Edwina Meade; Nor Amirah Fatin Mohamad; Advan Moorthy; Junaid Muhammad Nayyar; Daryl Ng; Doireann Colette Ridge; Eoin Darragh O Morain; Jacqueline O'Brien; Lisa O'Dwyer; Lucy O'Hare; Caoimhin O'Scanaill; Jessica Rose Rice; Niamh Rice; Sher Shah Shahab; Ahmed Sultan; and, Stuart Yeaton.

Dublin Dental Hospital evening lectures

The Dublin Dental University Hospital Evening Lecture Programme will recommence in October and run until March 2014, on the first Tuesday of each month. The programme has been approved for verifiable CPD credits.

For further information and to apply, contact Agnes Hagan, Tel: 01-612 7214, or Email: agnes.hagan@dental.tcd.ie/, Catherine Creagh, Tel: 01-612 7354, or Email: catherine.creagh@dental.tcd.ie/, or log on to the DDUH website under Continuing Professional Development.

There will be a 20% discount for those who register, with payment, before September 2, 2013.

Hands-on implants course


IDA CPD is delighted to announce a full-day hands-on implants course on Saturday October 12 in IDA House. The course will be delivered by Drs Ronan Allen and Ed O'Reilly (left) of the Burlington Dental Clinic in conjunction with Nobel Biocare and Eurocast. Participants will learn to place and restore both a single molar and upper incisor dental implant using realistic bench top models. Places are limited and the course is open to IDA members only. For further details, please contact IDA House.

Quiz

Submitted by Dr Brendan Fanning.

Questions

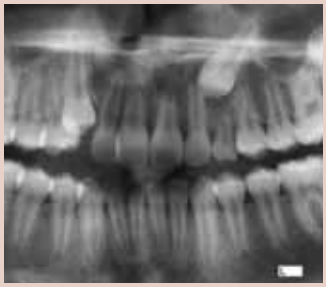

FIGURE 1: Segment of dental pantomograph.

FIGURE 2: Upper standard occlusal.

1. Why does the upper left lateral incisor root apex appear resorbed in the dental pantomograph?
   In Figure 2, an upper standard occlusal view, taken on the same day, the root is normal.
2. Does the unerupted canine crown lie buccal, superior or palatal to the root of the lateral incisor?
3. What is the localisation technique called?

Answers on page 205

Frontiers of Head and Neck Cancer

To mark National Mouth Cancer Awareness Day, The Dublin Dental University Hospital is hosting an alumni event entitled 'The Frontiers of Head and Neck Cancer Care and Research' on September 19, 2013, from 6.30pm to 10.00pm. The session will be chaired by David Ryan and key speakers will include Drs Colin MacIver, Anne Hegarty and Conor Barry on the latest in head and mouth cancer care and research.

For further information and to book, visit www.dentalhospital.ie/alumni/events/, or Email: alumni@dental.tcd.ie.

CPD points have been applied for.

Dental Protection Horizons

The Horizons series will explore scenarios from the Dental Protection archives and their impact on all members of the dental team. They include three hours' verifiable CPD and three hours of RiskCredits for all team members.

Monday	November 4	Maryborough House Hotel, Cork
Tuesday	November 5	Radisson Hotel, Limerick
Wednesday	November 6	Ormonde Hotel, Kilkenny
Thursday	November 7	Hilton Hotel, Charlemont, Dublin

Events run from 4.00pm to 8.30pm. Refreshments will be served.

Chief Dental Officer appointed

The Association is pleased to congratulate Dr Dympna Kavanagh on her appointment as Chief Dental Officer. Dr Kavanagh is being seconded on a part-time basis from her position as HSE National Oral Health Lead, a post she has held since 2011.

A graduate of University College Cork Dental School, Dr Kavanagh was formerly HSE Principal Dental Surgeon for the Limerick/North Tipperary area. The Association hopes to have an early meeting with Dr Kavanagh to discuss members' concerns and priorities at this critical juncture in restoring oral health to the nation.

CPD roadshow

September will see the start of year two of the popular CPD Roadshows in Dublin, Cork, Limerick, Galway, Sligo and Kilkenny on Saturday mornings from 10.00am to 1.00pm.

Each event will consist of four lectures of 40 minutes' duration covering a range of topics. See www.dentist.ie for a full range of topics, as well as dates and venues.

Diploma of Primary Care Dentistry: revision course

The Faculty of Dentistry, RCSI, will run an intensive two-day revision course for the Diploma of Primary Care Dentistry on September 6 and 7, 2013. The course will be examination focused and provide helpful information and guidance. Following this course, there will be another opportunity to register for the October diet of the examination.

This course will be free of charge, but candidates must register their intention to attend with the Faculty office at facdentistry@rcsi.ie.

Dentistry in the Dáil

The Irish Dental Association (IDA) monitors discussions in the Dáil and sends regular updates to members to let them know what the decision makers are saying in relation to dentistry. Below are some examples of recent dental-related discussions.

Chief Dental Officer

On May 28, Deputy Andrew Doyle asked Minister Reilly (left) if the position of Chief Dental Officer has been filled, if the position was publicly advertised, and the remit and salary of the role. The Minister replied that The Department of Health has been unable to fill the post of Chief Dental Officer on a full-time basis due to the moratorium on recruitment. Accordingly, it was agreed with the HSE that the HSE National Oral Health Lead would be released to the Department for two days each week to undertake the functions of Chief Dental Officer. The arrangement will be reviewed after three years.

New dental legislation

On July 3, Deputy Andrew Doyle asked the Minister for Health if he would provide an update on the forthcoming review of the Dental Act 1985, and if consultations have been held with relevant stakeholders. Minister Reilly replied that a public consultation on new legislation to replace the Act was due to conclude on July 26, 2013. Members of the public and interested stakeholders were invited to submit views, interests and concerns relating to the development of the new legislation, and the outcome of the consultation will inform the drafting of Heads of Bill, as well as informing the completion of a regulatory impact analysis, which will be carried out by the Department.

IDA publishes 10 key recommendations for Budget 2014

The Irish Dental Association has published its Pre-Budget Submission, which highlights the massive cuts to the two State dental schemes since 2010, and sets out a list of 10 recommendations to resolve the difficulties created by these cuts, which have begun to reverse the significant advances in dental care made in earlier years. The submission also contains a number of recommendations designed to address the development of a coherent oral healthcare policy, and difficulties in running a dental business.

Recommendations

1. Reinstate preventive and restorative care under the Dental Treatment Benefit Scheme for PRSI payers and introduce a new voucher system for all eligible patients.
   Cuts to this scheme are damaging to patient health, and are not cost-effective in the long term.

2. Reinstate preventive and restorative care in the Dental Treatment Services Scheme for Medical Card holders and introduce a new voucher system for all eligible patients.
   The IDA is extremely concerned that preventive and restorative treatment has been removed from the Scheme; this has enormous public health implications for some of the most vulnerable in society.

3. Reinstate sufficient number of staff in all HSE areas to ensure patients of the HSE's Public Dental Service and Orthodontic Service have access to equitable services irrespective of geographical location.
   Since March 2009, the number of dentists working in the Public Dental Service has reduced by nearly 20%.

4. Engage with the IDA on the reconfiguration of the HSE's Public Dental Service and Orthodontic Service to ensure any changes proposed fully reflect the best interests of the patient. The Association also makes specific reference to the orthodontics crisis and propose a five-point plan to address these difficulties.

5. Introduce a National Oral Health Policy, which provides equitable access to a range of treatments required to achieve and maintain optimal oral health for all citizens.

6. Explore with the Irish Dental Association the potential participation of dentists in health promotion and chronic disease management.
   Dentists in the community can play an important role in chronic disease management and the IDA urges the Government to explore this potential.

7. Divert a percentage of any taxes raised through consumption taxes on tobacco or high sugar/fat products towards an oral healthcare programme.

8. Appoint a full-time Chief Dental Officer to the Department of Health.
   While the IDA welcomes the secondment of the HSE's Oral Health Lead to this post on a part-time basis, the Association asks that the Government fulfill its pre-election commitment to make this a full-time post.

9. Reinstate the HSE Vocational Training Scheme in Dentistry.
   This Scheme offered graduates an opportunity to practise under the guidance of experienced dentists, as well as providing the HSE with a cost-effective way of treating patients.

10. Introduce incentives to dentists similar to those provided to other healthcare professionals and address the cost of doing business in Ireland.
    Dentists are one of the only health professionals that do not receive any financial support from the State.

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Dosage: Adults: 25mg every 8 hours or 12.5mg every 4-6 hours. Maximum daily dose 75mg. Use lowest effective dose for the shortest duration necessary to control symptoms. In the elderly or those with mild-moderate hepatic dysfunction or mild renal dysfunction, initial maximum daily dose of 50mg. Not recommended for children or adolescents.
Contra-indications: Hypersensitivity to dexketoprofen, the excipients or other NSAIDs, NSAID induced attacks of asthma, bronchospasm, acute rhinitis, or nasal polyps, urticaria or angioneurotic oedema. History of or active peptic ulcer/haemorrhage, chronic dyspepsia, history of gastrointestinal bleeding or perforation related to previous NSAIDs therapy, gastrointestinal bleeding, active bleeding or bleeding disorders. Crohn's disease or ulcerative colitis, asthma, severe heart failure, moderate-severe renal dysfunction, severe hepatic dysfunction, haemorrhagic diathesis and other coagulation disorders, during the third trimester of pregnancy and lactation.
Warnings and precautions: Caution in allergic conditions. Avoid use with concomitant other NSAIDs including COX-2 selective inhibitors. Use lowest effective dose for the shortest duration necessary to control symptoms. Gastrointestinal bleeding, ulceration or perforation which can be fatal, have been reported with all NSAIDs at anytime during treatment, with or without warning symptoms or a previous history of serious gastrointestinal events. When gastrointestinal bleeding or ulceration occurs withdraw treatment. The risk of gastrointestinal bleeding, ulceration or perforation is higher with increasing NSAID doses, in patients with a history of ulcer, particularly if complicated with haemorrhage or perforation, and in the elderly. The elderly have an increased frequency of adverse reactions to NSAIDs especially gastrointestinal bleeding and perforation which may be fatal. Commence treatment in these patients on the lowest dose available. Ensure cure of oesophagitis, gastritis and/or peptic ulcer before starting treatment. Monitor patients with history of GI disease. Special care with NSAIDs in patients with a history of gastrointestinal disease (ulcerative colitis, Crohn's disease). Consider combination therapy with protective agents (e.g. misoprostol or proton pump inhibitors), and in patients requiring concomitant low dose aspirin, or other drugs likely to increase gastrointestinal risk. Monitor patients with a history of gastrointestinal toxicity, particularly when elderly, for unusual abdominal symptoms (especially gastrointestinal bleeding) particularly in the initial stages. Caution in patients receiving oral corticosteroids, anticoagulants, SSRIs or anti-platelet agents. Do not use with warfarin, other coumarins or heparin. Caution in haematopoietic disorders, connective tissue disorders, impairment of hepatic and/or renal functions, history of hypertension and/or heart failure, diuretic therapy, the elderly. Special caution in patients with cardiac disease, especially episodes of previous heart failure. May mask symptoms of infectious diseases. Can increase parameters of renal and hepatic function. Serious skin reactions (some of them fatal), including exfoliative dermatitis, Stevens-Johnson syndrome, and toxic epidermal necrolysis reported very rarely. Discontinue treatment at the first appearance of skin rash, mucosal lesions, or any other sign of hypersensitivity. Do not use in women attempting to conceive. Do not use during the first or second trimester of pregnancy unless clearly necessary. Monitor and advise patients with a history of hypertension and/or mild to moderate congestive heart failure as fluid retention and oedema have been reported. Some NSAIDs (particularly at high doses and long term treatment) may be associated with a small increased risk of arterial thrombotic events (e.g. myocardial infarction or stroke). Careful consideration before treating patients with uncontrolled hypertension, congestive heart failure, established ischaemic heart disease, peripheral arterial disease, and/or cerebrovascular disease. Similar consideration before initiating longer-term treatment of patients with risk factors for cardiovascular disease (e.g. hypertension, hyperlipidaemia, diabetes mellitus, smoking).
Interactions: Other NSAIDs, anti-coagulants, heparins, corticosteroids, lithium, methotrexate, hydantoines and sulphonamides, diruretics, ACE inhibitors, antibacterial aminoglycosides and angiotensin II receptor antagonists, pentoxyfilline, zidovudine, sulfonylureas, beta-blockers, cyclosporin and tacrolimus, thrombolytics, anti-platelet agents and SSRIs, probenecid, cardiac glycosides, mifepristone, quinolone antibiotics.
Undesirable effects: As with other NSAIDs, the most commonly observed adverse events are gastrointestinal. Peptic ulcers, perforation or gastrointestinal bleeding, sometimes fatal, particularly in the elderly may occur. Common (1-10%): Nausea and/or vomiting, abdominal pain, diarrhoea, dyspepsia. Uncommon (0.1-1%): insomnia, anxiety, headache, dizziness, somnolence, vertigo, palpitations, flushing, gastritis, constipation, dry mouth, flatulence, rash, fatigue, pain, asthenia, rigors, malaise. Rare (0.01-0.1%) laryngeal oedema, anorexia, paraesthesia, syncope, hypertension, bradypnoea, peptic ulcer, peptic ulcer perforation, hepatitis, urticaria, acne, increased sweating, back pain, acute renal failure, polyuria, menstrual disorder, prostatic disorders, peripheral oedema, liver function test abnormal. Very rare (<0.1%) neutropenia, thrombocytopenia, anaphylactic reaction including anaphylactic shock, blurred vision, tinnitus, tachycardia, hypotension, bronchospasm, dyspnoea, pancreatitis, hepatocellular injury, Stevens Johnson syndrome, toxic epidermal necrolysis (Lyell's syndrome), angioedema, facial oedema, photosensitivity reactions, pruritus. As with other NSAIDs, the following may occur: melaena, haematemesis, ulcerative stomatitis, exacerbation of colitis and Crohn's disease, cardiac failure, aseptic meningitis haematological reactions, agranulocytosis and medullar hypoplasia. Bullous reactions. Some NSAIDs (particularly at high doses and in long term treatment) may be associated with a small increased risk of arterial thrombotic events (e.g. myocardial infarction or stroke).
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Marketing authorisation holder: Menarini International Operations Luxembourg S.A., 1 Avenue de la Gare, L-1611 Luxembourg.
Marketed by: A.Menarini Pharmaceuticals Ireland Ltd
Further information is available on request to A Menarini Pharmaceuticals Ireland Ltd, 2nd Floor, Castlecourt, Monkstown Farm, Monkstown, Co. Dublin, Ireland or may be found in the SPC.
Date of preparation: August 2011

References:
1. Barbanoj Rodriguez, M.J., et al. Expert Review of Neurotherapeutics. 2008; 8(11):1625-1640

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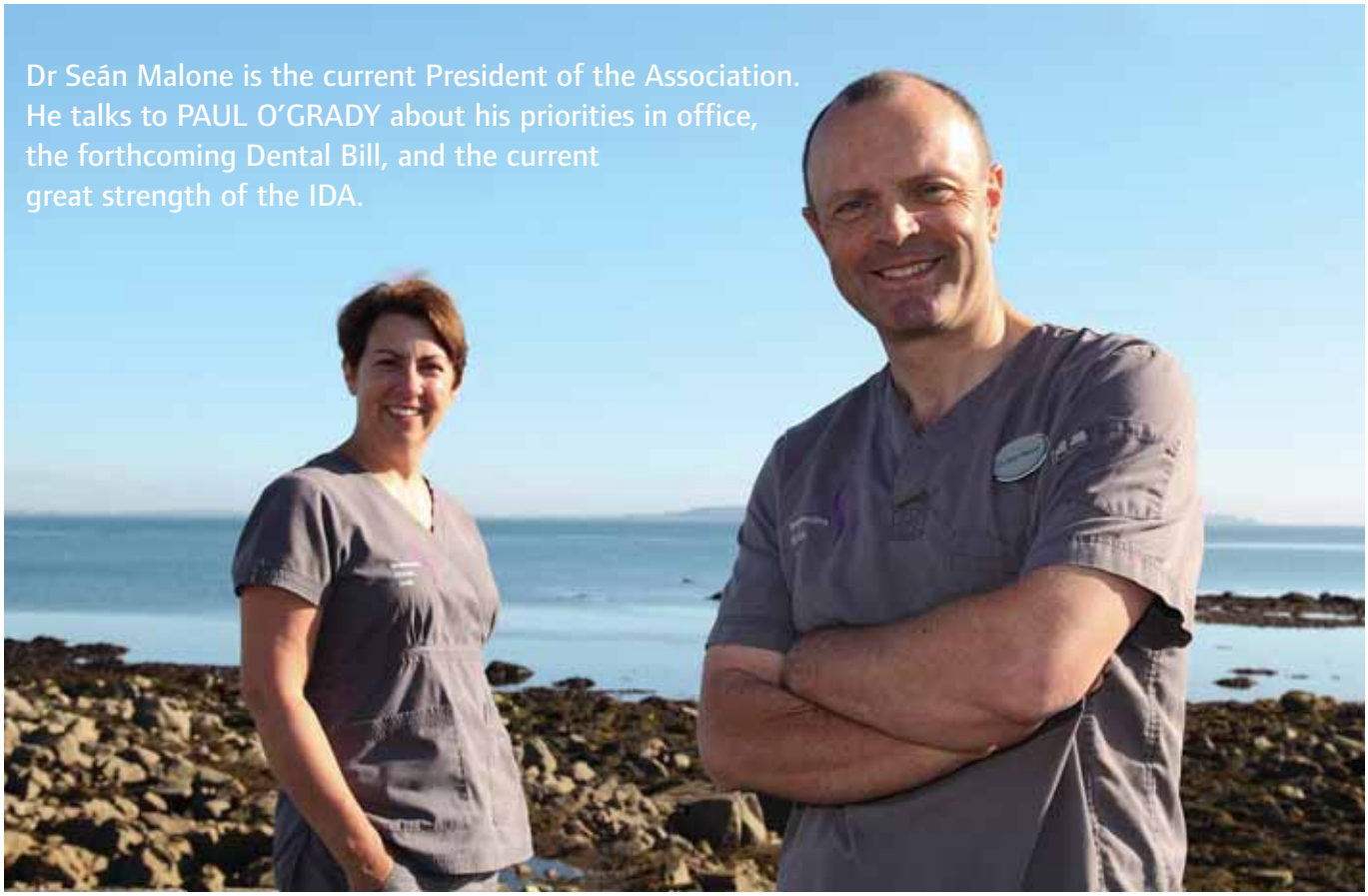

Dr Seán Malone is the current President of the Association. He talks to PAUL O'GRADY about his priorities in office, the forthcoming Dental Bill, and the current great strength of the IDA.

Photographs by Orla Murray, Ark Photography.

Norma and Sean Malone pictured near their practice in Sandycove.

Reasons for pride

The Association's President for 2013/14 is a man on a mission. He intends to raise the morale of the profession by communicating a very clear message: the standard of dentistry in Ireland is the best in the world. "We don't realise, as a profession, how good we are. I see it in my travels as an examiner and as a speaker. The standard of Irish dentistry is equivalent to the best in the world. Right now, when we are affected by savage cuts and by the downturn in general, we desperately need to believe in ourselves and in the power of the care that we provide for our patients," says Sean. He points to the fact that the Irish dental profession is being sought out to educate dentists in oil-rich countries that can afford to buy the best in the world such as Kuwait. And recently, he told the *Journal*, an agreement has been signed for the RCSI to provide postgraduate training at New York Dental School. He said: "The best in the world are seeking us out. We should be proud of that and of our profession in Ireland."

The Dentistry Bill

However, as hard as the President will work to drive up the morale of the membership, his time is going to be taken up to a very great extent with the new Dental Bill. And, already, that is evident. Asked about the reaction of the Association to the Department of Health's consultation process on the Bill, he states that a great deal of work went into the preparation of the formal response. He credits the Association (and Fintan Hourihan in particular) with a comprehensive reply. The main

Taking continuous education to heart

Dr Malone has continued his education right through his career. Following graduation from Dublin in 1980, he worked for a year in Dublin Dental Hospital and then for a further year in Royal Liverpool Dental Hospital. A seven-year stint in practice in Preston followed before his return to Dublin in 1990. He joined Sandycove Dental Practice while spending two days a week working at the Dublin Dental Hospital. During this time, he obtained his Fellowship in Dental Surgery from the Royal College of Surgeons of Ireland. Sean has lectured extensively to students and to the profession on topics ranging from modern techniques for white filling to management of the anxious patient. He is an examiner for the RCSI in their postgraduate examinations in Ireland and abroad, and in 2008 was elected a Fellow of the International College of Dentistry in recognition of his services to the profession.

concerns of the Association, in the first instance, are: making CPD compulsory; lifting the ban on the incorporation of dental practices; examination of dental practices to be carried out by the Dental Council; a structured pre-registration year; changes in the legislation for auxiliaries; and, changes in the make-up of the Dental Council.

Sean anticipates that the Association will succeed in much of its desires for improvements in the legislation but that it won't be easy and full success may not be possible – even if the Association will try for all its desired improvement.

Other successes

The President notes the success that dentists have had in past legislation, citing the recent introduction of European legislation that greatly improved the regulation of tooth whitening. However, he is adamant that illegal tooth whitening is happening here in Ireland (a fact backed up by recent reports in the *Journal*) and would like to see the relevant body – the Irish Medicines Board – take action. He notes that a criminal action was taken against a provider of illegal tooth whitening in the United Kingdom recently and would like a similar robust approach taken to offenders in Ireland.

Mouth Cancer Awareness Day

"I want to pay tribute to former President Dr Conor McAlister for introducing this programme where so many members of the profession give their time for no pay to the benefit of the public. Early diagnosis is very important for oral cancer survival rates and we need to get the message out that an oral cancer examination is a part of the routine examination we do for our patients every day," says Dr Malone.

Another strong initiative by the Association was its action in relation to the move by Revenue against the self-employed status of associates in practices. As result of a great deal of hard work by officers, members, and executives of the Association, working with professional advisers, a set of guidelines is provided by the Association which, if followed, provides protection against action by the Revenue Commissioners. Sean cites his own experience in Sandycove Dental Care where an audit by Revenue verified that their associates were following all the correct procedures for entitlement to self-employed status.

Another life

While Dr Malone's life is busy with the Presidency of the Association for this year, he has a very full life away from dentistry. Brought up in Rathgar in Dublin by his parents, who were both doctors, the family had a strong mix of music, sport and science. Sean learned to play the flute classically and played with the National Youth Orchestra. However, his ear turned to Irish music and in his teens he played in a band called Temple House. His sister, Geraldine, stayed with the classical music, becoming a professional musician, and is now head of music at one of Dublin's leading secondary schools. The music link has stayed in the family with Sean's daughter, Ailbhe, being a journalist who covers music as part of her work.

Sean is married to Norma whom he met in college and who works with him at Sandycove Dental Practice. They have three children: the aforementioned Ailbhe who is 26; Rob who is 23 and has just completed a degree in Irish studies; and Rory, who has just done his Junior Cert at Coláiste Eoin.

Sean's interest in music continues through his singing with Dun Laoghaire Choral Society but he has taken a year's leave from the Society while he is President. Sport is also a mainstay of Sean's leisure time. He plays golf to a single figure handicap, and follows all the team sports. He has an added interest in the Munster rugby team these days as Norma's nephew, Ian Keatley, is now an established player.

Work to do

While there have been notable successes by the Association such as the above, there is still much which can be sought. Sean points to the urgent need for the restoration of the Government schemes – the DTSS and the DTBS. "These schemes should be fully reinstated in order to reduce the neglect of the nation's oral health. Put simply: the public should get the treatment to which they are entitled, and the dentists should get fair remuneration for that," says Sean.

He is also certain that the position of Chief Dental Officer cannot be performed on a part-time basis. "While we congratulate Dr Dympna Kavanagh on her appointment, the Association is firmly of the view that the proper workload of the Chief Dental Officer cannot be carried out at less than full-time working hours." The Association, in partnership with the dental hospitals and the RCSI, has been engaging with the Department of Health on this issue and has made its point of view well known.

There will be further engagement with the Government in relation to the Pre-Budget Submission that sets out ten recommendations from the Association to Government. "These recommendations set out our concerns in relation to every aspect of oral health policy and administration, and the actions we feel are required for progress, e.g., the restoration of the Government schemes and the appointment of the full-time Chief Dental Officer."

Health of the Association

Sean is confident of the current health of the Association itself: "The IDA is vibrant. It has more than 1,600 members. It is very active on a huge variety of topics. For example, the payments to dentists under the Medical Card Scheme from the HSE were not cut recently – in comparison to doctors; and our mediation service – the Dental Complaints Resolution Service – has been a big success. Our CPD activities and our social activities are highly sought after, and we have fantastic engagement with and by young dentists. I am particularly looking forward to attending the IDA Annual Seminar for HSE dental surgeons in Mullingar in October."

And, with the Association in such good shape as it approaches its 90th anniversary, the President points out that it is getting stronger in other ways: "We are determined to secure negotiating rights for our members."

Greatest strength

The Association's greatest strength, according to Sean, is its sense of unity. "We need to foster that feeling of community, of being in a profession together. The current trend for competition can pit one practitioner against another; this is not to the benefit of the profession or of our patients."

Dealing with debt

Dr Malone has profound views on facing the difficulties of modern life in Ireland: "Many people in this country are saddled with huge debts. In our practice, we looked at our running costs and by reducing a number of monthly expenditures, we made a significant saving. On a personal level, I believe it is very important to appreciate what you have: your health; your family and to try to remember, none of us will come this way again so we should try to enjoy it as far as we can. On a professional level, doing courses on techniques which deliver excellent aesthetics with lower costs – for example componeers – is an important way to help improve our businesses. Dr Peter Gannon, our President next year, has organised a world authority on composite restorations to speak at the Conference in Kilkenny in 2014. That presents all of us with a great opportunity to learn something that will help us to improve our business."

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NSK claims two world firsts

NSK, the company that claims to be market leaders in high-quality turbines, handpieces and small equipment, has launched the world's first 45° contra-angle with dual purpose water spray – the Ti-Max Z45L Contra-angle, and the DynaLED M205LG, the world's first air motor with micro power generator.

According to the company, the Ti-Max Z45L is specifically designed to deliver outstanding accessibility and superior visibility, facilitating access to hard-to-reach molars. NSK says it boasts the world's first four-port, two-way spray function, allowing clinicians to switch between the "Jet Spray" and "Mist Spray" settings to complement surgical and restorative procedures.

According to NSK, the DynaLED M205LG is the world's first air motor with micro power generator and instantly converts non-optic Borden B2 and Midwest M4 tubings from non-optic to optic. Just add one of the many NSK optic contra-angles to dramatically enhance your clinical experience. The micropower generator, developed using NSK's latest technology, ensures quiet operation and minimal vibration, and will always deliver stable, high-quality LED illumination to the treatment area, even with low speeds.

These products form some of the comprehensive range NSK has to offer, which includes turbines, contra-angles, surgical micromotors and ultrasonics.

NSK DynaLED M205LG and NSK Ti-Max Z45L Contra-angle.

Passionate about prosthetics

Teeth=us, the international manufacturer of dental prosthetics, is now open for business in Ireland providing premium restorations and appliances to the Irish and UK dental markets. With bases in the US, Sweden, Denmark and Norway, Teeth=us says it has unrivalled experience producing dental prostheses to the highest aesthetic and technical requirements.

Based in Ennis, Co. Clare, its staff of four will serve dental practices using state-of-the-art laboratories, located in Chengdu and Hong Kong. The company's focus is to produce dental units for dentists, dental labs and dental institutions around the world.

All fixed restorations come with what the company claims is a unique 10-year warranty. This warranty provides assurance to clients and illustrates the company's confidence in the products. All finished products contain only the best materials from well-known producers. Using its unique logistic system (The dent app) makes it easy to back track historical cases to find all necessary information from the production line.

Teeth=us' success is built on state-of-the-art products with long warranties, allied with just-in-time deliveries at a very affordable price.

Mary Lyons, the CEO of Teeth=us, said: "We love what we do. Perhaps that is why we have earned the trust of so many dentists and have the great opportunity to produce their dental prosthetics. We do everything we can to create the perfect product that will be problem-free for our customers and their patients".

Voco.com goes responsive

Online presence now suitable for all devices.

VOCO now offers their website users a responsive design, which always adjusts itself automatically to the device with which it is viewed. It's VOCO's response to the increasing use of mobile devices. Whether on a smartphone, tablet, or on the big desktop screen, the responsive design automatically adjusts to the browser window, while the content adjusts itself to the respective width. All contents are presented optimised, easy to read and clearly structured.

Comfortable use

"Basically our new website works like a chameleon and always behaves exactly as needed," explains VOCO's head of marketing Dr Axel Bernecker. When using a mobile device, the homepage changes to a mobile view and allows visitors an easy, intuitive use with touch-optimised navigation. The relaunch is not least "a clear signal for VOCO's future-oriented focus, which is also reflected in our online presence."

VOCO's new responsive design recognises which type of device opens the page and adjusts itself individually.

At the same time the layout is fresher and clearer: the content is more simply structured and easy to use. On the new main page you see only the latest VOCO products and most important news – this makes orientation easy. Further information can be quickly obtained while the main menu always indicates the navigation path. Larger images, a larger font and a lighter layout in addition to the responsive design guarantee even more user friendliness.

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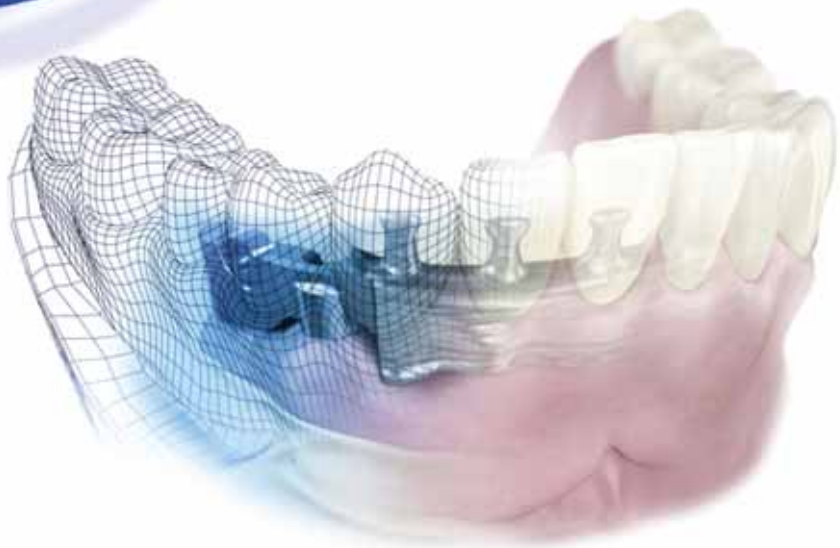

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An analysis of the attitudes of dental patients attending general dental practice in Galway

Précis

The aim of this paper is to describe the patterns of dental attendance and attitudes towards tooth loss of general dental practice patients in Galway.

Abstract

Aim: To describe the patterns of dental attendance and attitudes towards tooth loss of general dental practice patients in Galway.

Objectives: 1. To determine the pattern of adult dental attendance in general practices in Galway; and, 2. To examine the oral health attitudes of these patients.

Method: Questionnaires were distributed to 311 consecutive adult patients in the waiting rooms of ten general dental practices in Galway, which were randomly selected from the telephone directory.

Results: A total of 254 of the 311 questionnaires distributed were fully completed, returned and included in the results, giving a response rate of 81.7%. A total of 59% of dentate participants attended their dentist for annual or biannual examinations compared to 23% of edentate patients. Some 10.5% of medical card holders and 0.5% of non-medical card holders were edentulous.

Conclusions: The data from the survey indicated that medical card holders in Galway were more likely to be edentulous than non-medical card holders. Edentate patients were less likely to be regular dental attenders than dentate patients.

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Introduction

The first national survey of adult oral health in the Republic of Ireland was conducted in 1979 and consisted of a telephone survey designed to ascertain the level of edentulousness in the Irish population and also to determine the dental knowledge, attitudes and behaviour of Irish adults.[1] Ten years later the second national survey of the oral health of Irish adults was conducted.[2] This influenced the development and publication of the strategy document 'Shaping a Healthier Future' in 1994, and the subsequent Dental Health Action Plan.[3] The Dental Health Action Plan pointed out the inequality in dental treatment available to medical card holders and the remainder of the population. As a result, the Dental Treatment Services Scheme (DTSS) was established in 1994. The most recent National Survey of Adult Oral Health was conducted in Ireland in 2000-2002 and was

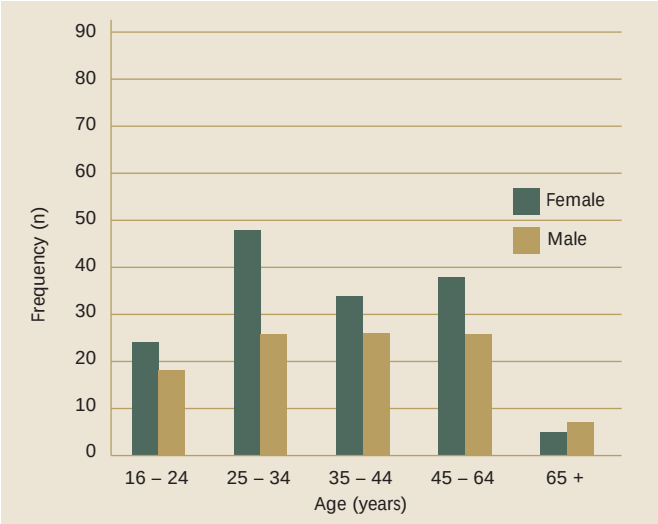

FIGURE 1: Age and gender distribution of respondents.

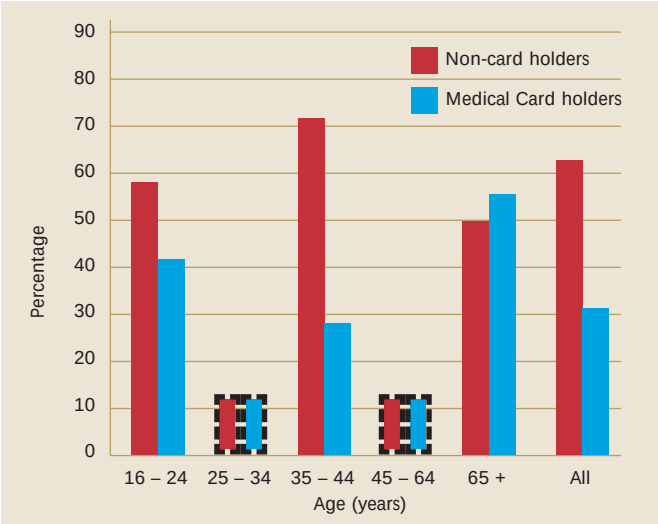

FIGURE 2: Medical card status of respondents.

published in 2007.[4] This report concluded that the goals set out for the year 2000, as set by the Dental Health Action Plan in 1994, had been reached at the national level for all adult age groups. In the decade since the last national survey, a number of significant changes have been made to the provision of dental services in Ireland. In view of economic difficulties, the HSE sought to reduce the amount spent on the DTSS from an estimated €88m in 2010 down to the 2008 level of expenditure of €63m. This was implemented by suspending certain items of treatment and setting limitations on "non-emergency" items of treatment such as fillings. The Social Welfare Dental Benefit Scheme was also amended so that from January 1, 2010, the Dental Benefit Scheme would provide cover for an annual examination only.

It was against the above background that it was decided to conduct this survey in the west of Ireland. The aims of this research were to determine the patterns of attendance and oral health attitudes of adult patients in ten general dental practices in Galway.

Method

An anonymous questionnaire was distributed to consecutive adult patients in ten general dental practices in Galway over a one-week period. The questionnaire consisted of ten questions taken from the National Survey of Adult Oral Health 2002. The data collected was then analysed according to age group, gender and medical card status. Ethical approval was granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals.

Results

A total of 311 questionnaires were distributed; of these, 254 were completed and returned for inclusion in the results. **Figure 1** shows the age and gender distribution of respondents to this survey. A total of 103 (40.6%) respondents were male and 151 (59.4%) were female. A total of 31.7% of participants were medical card holders and 68.3% were non-medical card holders (**Figure 2**)**.** The proportion of males between the ages of 16 and 24 who were in possession of a medical card was high, at 41.8%. Of the medical card holders who completed the questionnaire, 10.5% were edentulous. This was a much higher proportion than among non-medical card holders, which was only 0.5%. A higher proportion of males (4.9%) were edentulous than females (1.3%). Only 3.7% of the overall sample was edentulous.

Reasons given for dental attendance

As shown in **Figure 3**, 59% of dentate participants reported attending their dentist for annual or biannual examinations compared to 23% of edentate participants. Some 77% of edentulous patients said that they only see their general dental practitioner when they have a pain or feel that they require dental treatment, compared to 41% of dentate patients. It is important to highlight, however, that the number of edentulous individuals in the sample population was very low, and their views and attitudes may not reflect the Galway population as a whole. Dentate adults aged over 65 years were more likely to attend the dentist regularly than younger age groups, with 54.5% reporting that they attend for a check-up at least once a year, and a further 9.1% going for a check-up at least once every two years. Comparatively, 38.2% of 16- to 24-year-olds and 47.8% of 35- to 44-year-olds reported attending their dental practitioner for annual examination.

Some 64.5% of all patients surveyed indicated that they had last been to the dentist within the past 12 months. When this was further divided according to medical card status, it was shown that 50.5% of medical card holders had been to their dentist within the past year compared to 80.7% of non-medical card holders. Medical card holders were more likely to be very irregular dental attenders than non-medical card holders, with 22% of medical card holders reporting that it had been over three years since they had seen their dentist compared to 5% of non-medical card holders.

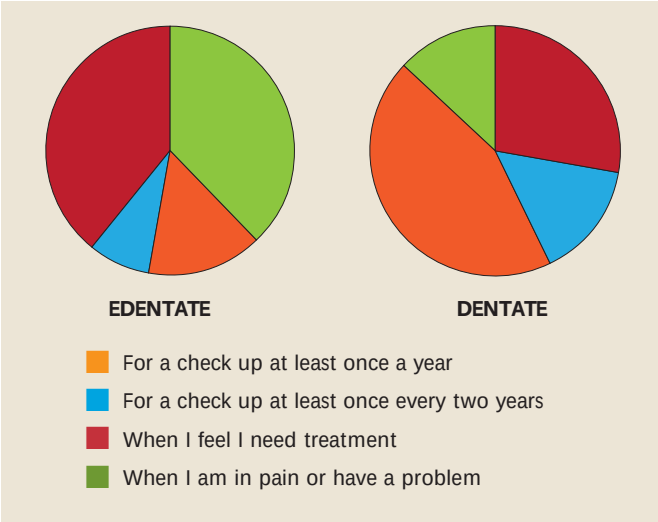

FIGURE 3: Reasons given for dental attendance.

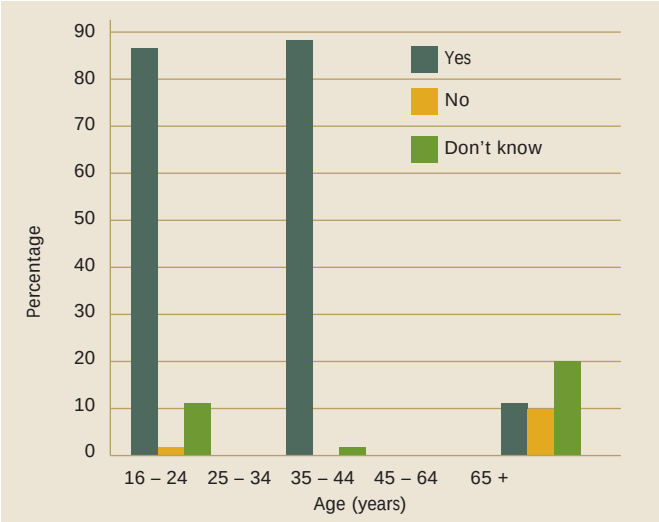

FIGURE 4: Responses given by patients when asked if they think they will always have some of their natural teeth.

Desired treatment for a painful tooth

In response to the question "If you had a painful back tooth would you prefer it to be filled or taken out?" the majority of patients would choose a filling (71.9%), while 10.7% would prefer extraction of the tooth. These data are further broken down according to age category in **Table 1**. A total of 82.7% of 16- to 24-year-olds said that they would choose to have a painful back tooth filled in this survey. In contrast, fewer over 65-year-olds would opt for a filling (60.0%); approximately one-third of this group would prefer to have a painful back tooth extracted. Unsurprisingly, fewer adults would choose to have a painful front tooth extracted (4.6%), with the majority indicating that they would choose a filling (83.3%). In this survey, no one in the over-65 age group would be happy to have a painful front tooth extracted. However, 10% would choose to have it "taken out and replaced if possible". The cosmetic importance of anterior teeth to older patients is reflected in their increased reluctance to have a front tooth extracted compared to a posterior tooth.

Attitudes to wearing complete dentures

With regard to the wearing of full dentures, 88.4% of 16- to 24-year-olds indicated that they would be either upset or very upset at the thought of losing all their teeth and wearing full dentures. The corresponding percentages for 35- to 44-year-olds and the over-65 age group were 84% and 60%, respectively.

TABLE 1: Percentage of respondents who were asked "If you had a painful back tooth would you prefer it to be filled or taken out?"

	16-24	35-44	65+	All
Filled	82.7	69.1	60.0	71.9
Taken out	9.6	10.3	30.0	10.7
Don't know	3.8	11.8	0.0	7.5
Wouldn't bother me	3.8	7.4	10.0	7.8
Taken out and replaced	0.0	1.5	0.0	2.1

Expectations of retaining natural dentition

The vast majority (84%) of the dentate population thought that they would always have some of their own natural teeth. **Figure 4** shows the responses given by age category.

Discussion

The survey participants were consecutive patients attending 10 dental surgeries over a one-week period. Accordingly, the survey results are biased towards dental attenders, as non-attenders were not included. This may have favoured selection of adults with a higher awareness of oral health and, as a convenience sample, was not representative of the Galway population as a whole.

Patterns of attendance

Edentate patients are less likely to attend a general dental practitioner for routine examination than dentate individuals. The age profile of edentate patients (usually over 65 years) puts this group at an increased risk of oral cancer. Over 60% of patients who present with oral cancer show either regional or distant spread.[5] The five-year survival rates for oral cancer average at between 50 and 80%, depending on the stage of the disease, varying from 86% for stage I to 12-16% for stage IV.[6,7] A major factor in poor outcome for oral cancer is its late presentation. An annual soft tissue exam by an oral health professional gives the opportunity for early detection and improved prognosis of such lesions. The DTSS has been the main scheme for providing dental care to older people. In 2003, older people comprised 41% of the DTSS patient base.[8] From January 1, 2009, the automatic entitlement to a medical card on reaching 70

years ended. This may discourage older patients from attending their dentist for routine examinations, as it may be cost prohibitive.

Even among dentate patients, less than half routinely attended for an annual dental examination and 41% only attended when they were experiencing pain or knew that they needed treatment. It has been demonstrated that a history of spontaneous toothache is usually associated with extensive degenerative changes, which extend deep into the root canals.[9] Patients attending the dentist when already experiencing symptoms are therefore likely to require more extensive treatment and have a higher risk of tooth loss than patients who undergo routine examination when asymptomatic. It is encouraging to note the proportion of regular dental attenders in the dentate over-65 population, as this age category are at an increased risk of dental diseases such as root caries and periodontal disease. Routine examination provides the opportunity for early intervention when disease is detected, and regular reinforcement of oral hygiene advice to prevent the initiation of dental disease.

Attitudes towards tooth loss

The impact of tooth loss on quality of life (QoL) is increasingly recognised and researched. In a study conducted in England, 45% of participants stated that they had experienced difficulties in accepting total loss of their teeth.[10] Partially dentate patients have also been found to have limitation of food choice and reduction in enjoyment of food.[11] There are psychological as well as functional impacts, as partially dentate patients are also more likely to avoid laughing in public and exhibit increased reluctance to form close relationships.[11] Patients in general view tooth loss as a very negative event and, in the most part, are willing to undergo restorative treatment rather than have an extraction. This is reflected in a dramatic decline in the percentage of edentulous adults in the past 30 years in Ireland. Interestingly, 82% of participants in this survey indicated that they believed that they will always retain some of their natural dentition. In the past, many patients felt that tooth loss was inevitable and were, to a certain extent, prepared for that eventuality. Some 83.7% of adults surveyed said that they would be upset or very upset at the thought of losing all their natural teeth and wearing full dentures. As more adults retain their natural teeth into old age, the impact of conditions such as gingival recession, root caries and tooth wear will increase. The higher expectations of this population are also likely to increase demand for more sophisticated treatments, as shown by less than 5% of those surveyed choosing extraction as treatment of choice for a painful back tooth.

However, the retention of natural teeth continues to be substantially lower among medical card holders. Given the limitation on restorative work in the DTSS scheme currently, it is possible that this gap between medical card holders and non-medical card holders may widen further, with medical card holders carrying the functional and psychological burden of edentulousness.

Conclusions

In this survey, edentate patients reported attending their dentist less regularly than dentate patients and the vast majority of the dentate population surveyed expected to retain their natural dentition throughout their lives.

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Effect of phase I periodontal therapy on pro-coagulant state in chronic periodontitis patients – a clinical and haematological study

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Précis

This study validates the effect of periodontal therapy in reducing systemic inflammation, thus indirectly affecting the risk of cardiovascular disease.

Abstract

Statement of the problem: The increase in white blood cell count (WBC) and platelet count due to systemic inflammation and infection is considered a risk factor for cardiovascular diseases. These parameters increase in periodontal disease. A decrease in WBC and platelet counts by periodontal therapy may decrease the risk for cardiovascular disease.
Purpose of the study: The present study is a treatment intervention model to investigate the effect of non-surgical periodontal therapy on total leucocyte count (TLC), differential leucocyte count (DLC) and platelet count in patients with chronic periodontitis.
Materials and methods: Thirty systemically healthy patients were included in the study. Probing pocket depth (PPD), clinical attachment loss (CAL), bleeding on probing (BOP), TLC, DLC, platelet count, bleeding time (BT) and clotting time (CT) were evaluated at baseline and at two weeks after phase I therapy.
Results: A statistically highly significant decrease in the percentage of sites exhibiting BOP was observed, i.e., from 78.1% at baseline to 18.1% two weeks postoperatively (p=0.000). There was also a statistically significant decrease in TLC from 7595/mm^3 at baseline to 6690/mm^3 two weeks following phase I therapy (p=0.02). There was also a statistically highly significant decrease in platelet count from 2.1 lac/mm^3 preoperatively to 1.9 lac/mm^3 at two weeks postoperatively (p=0.003).
Conclusion: The present study depicts the importance of periodontal therapy to reduce the TLC and platelet count, thereby possibly decreasing the risk for the development of cardiovascular disease by lowering the established risk factors for periodontal atherosclerosis.

Key words: WBC count, platelet count, oral bacteria, periodontal therapy, atherosclerosis.

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Introduction

For decades, blood has been used as a diagnostic body fluid for assessing various infections and systemic diseases. For the past two decades, periodontitis has been linked to systemic disorders and is known to change the cellular and molecular components of blood.[1] Various observational studies have established an association between periodontal disease and cardiovascular disease (CVD).[1] Periodontitis may affect cardiovascular tissues directly or indirectly by 'metastatic infection', 'metastatic inflammation' and 'metastatic injury' due to dissemination of microbes and their products into the systemic circulation.[2]

White blood cells (WBCs) are an integral part of the innate immune system. These cells are recruited in higher numbers during episodes of bacteraemia or lipopolysaccharide (LPS) leakage into the systemic circulation.[1] Leucocyte count has been demonstrated in several epidemiological studies to be an independent predictor of prospective coronary heart disease.[3]

Inflammatory and infectious processes can result in an increase in the number of active thrombocytes.[1] This phenomenon is known as 'reactive thrombocytosis'. So, it is reasonable to assume that periodontal disease can also lead to an increased number of circulating platelets.[1] A large body of evidence supports the role of platelets in linking bacteraemia to atherothrombosis.[4] The aim of the present study was to investigate the effect of phase I (non-surgical) periodontal therapy on total leucocyte count (TLC), differential leucocyte count (DLC) and total platelet count in patients with generalised chronic periodontitis.

TABLE 1: Characteristics of the participants in the study.

Number of completed cases	30
Average age of subjects	40.37 years
Gender	9 male, 21 female

Materials and methods

Thirty systemically healthy patients with chronic periodontitis aged between 25 and 45 years were selected randomly among patients reporting to the Department of Periodontics, Modern Dental College and Research Centre, Indore. Patients having probing depths ≥5mm in conjunction with attachment loss in more than 30% of the sites were selected. Patients with score of 2 or 3 of the Loe and Silness

TABLE 2: Effect of phase I therapy on periodontal parameters.

Periodontal parameters	T1 (pre-treatment) (% sites)	T2 (post-treatment) (% sites)	
Bleeding on probing (BOP)	78.1 (33-100)	18.1 (0-50)	Highly significant (p=0.000)
PPD <3mm	43.1 (0-100)	59.0 (0-100)	Non-significant (p>0.05)
PPD 3.1-5mm	33.2 (0-16)	26.9 (0-58.3)	Non-significant (p>0.05)
PPD >5.1mm	25.5 (0-100)	14.3 (0-100)	Non-significant (p>0.05)
CAL <3mm	61.4 (0-100)	68.1 (0-100)	Non-significant (p>0.05)
CAL 3.1-5mm	24.2 (0-58.3)	21 (0-50)	Non-significant (p>0.05)
CAL >5.1mm	16.8 (0-100)	11.0 (0-100)	Non-significant (p>0.05)

PPD – probing pocket depth; CAL – clinical attachment loss.

TABLE 3: Effect of phase I therapy on blood parameters.

Blood parameters	T1 (pre-treatment)	T2 (post-treatment)	
Total leucocyte count (per mm^3)	7595 (5100-11250)	6690 (4900-9200)	Significant (p=0.02)
Neutrophil count (%)	63.03 (52-72)	61.9 (50-70)	Non-significant
Lymphocyte count (%)	31.37 (21-42)	30.4 (23-36)	Non-significant
Eosinophil count (%)	4.9 (1-5)	4 (1-4)	Non-significant
Monocyte count (%)	2.17 (1-4)	2.03 (1-9)	Non-significant
Basophil count (%)	0	0	Non-significant
Platelet count (lacs/mm^3)	2.1 (1.6-2.8)	1.9 (1.5-2.4)	Highly significant (p=0.003)
Bleeding count (min)	1.2 (1-2.5)	1.1 (1-1.5)	Non-significant
Clotting time (min)	3.8 (2.6-6.2)	3.8 (3-4.4)	Non-significant

Gingival Index were included. Patients with any systemic disorders, pregnant or lactating women, patients with a history of any acute infection and/or antibiotic therapy in the last six months, patients with a recent history of immunisation, and present and past tobacco users (smokers as well as tobacco chewers) were excluded from the study.

The study protocol consisted of full-mouth scaling and root planing completed by a single operator in two visits within 24 hours, along with chlorhexidine rinsing twice a day for seven days as an adjunctive home care measure. Probing pocket depth (PPD), clinical attachment loss (CAL) and bleeding on probing (BOP) were recorded by another calibrated operator using the Williams periodontal probe at baseline and at two weeks postoperatively. Preoperative (baseline) and two weeks postoperative venous blood samples were obtained at the same time of the day, and were immediately transported and processed. The laboratory analysis of TLC, DLC, platelet count, bleeding time (BT) and clotting time (CT) were performed by a blinded pathologist. Results obtained were subjected to statistical analysis. The study was approved by the Ethics Review Committee of the Modern Dental College and Hospital. Written informed consent was obtained from all the study participants.

Results

Results are depicted in **Tables 1**, **2** and **3**.

Table 1 shows the mean age of participants, i.e., 40.37 years. Out of 30 subjects, nine were male and 21 were female. **Table 2** shows the effect of scaling and root planing on periodontal parameters at baseline and at two weeks postoperatively. A statistically highly significant decrease in the percentage of sites exhibiting BOP was observed, i.e., 78.1% of sites showed BOP before treatment, which was reduced to 18.1% postoperatively (p=0.000). In all other periodontal parameters, there was no statistically significant difference. **Table 3** shows the effect of phase I therapy on blood parameters before and two weeks after treatment. There was a statistically significant decrease in TLC two weeks after scaling and root planing (at baseline TLC was 7595/mm^3, and at two weeks' follow-up TLC was 6690/mm^3, p=0.02). There was a statistically highly significant decrease in platelet count from 2.1 lac/mm^3 preoperatively to 1.9 lac/mm^3 at two weeks postoperatively (p=0.003). There was no statistically significant difference in other blood parameters after phase I therapy.

Discussion

The present study investigated the effect of non-surgical therapy on TLC, DLCs (neutrophils, lymphocytes, eosinophils, basophils and monocytes) and total platelet count in 30 patients with chronic periodontitis. Alterations in these factors at cellular and molecular levels are known systemic risk predictors for CVD; this study was an attempt to assess the role of non-surgical periodontal therapy in reducing the risk of CVD.

Loe *et al.* (1965)[5] stated that reinstitution of oral hygiene techniques led to the disappearance of gingival inflammation within approximately one week of plaque removal. Lang *et al.* (1990)[6] stated that absence of BOP is an indicator of periodontal stability. In this study, we achieved a highly significant decrease in BOP in the maximum percentage of sites at the end of two weeks. Hence, the two-week time period may be a justifiable time frame for achieving reduction in gingival inflammation and thereby reducing systemic inflammation (reduction in TLC and platelet counts).

Higher leucocyte counts have been found to be correlated with higher Gingival Index (GI) and Community Periodontal Index Treatment Needs (CPITN) scores.[7] This can be attributed to the host's immune response to microbially induced periodontal inflammation, which can be resolved by non-surgical periodontal therapy.[7] In our study, a statistically significant decrease in TLC was observed two weeks after scaling and root planing (from 7595/mm^3 at baseline to 6690/mm^3 two weeks post phase I therapy). Similar findings were also reported by Christan *et al.* (2002),[8] who reported a decrease in leucocyte counts in the course of periodontal therapy. Taylor *et al.* (2006)[9] reported a statistically significant decrease in WBC counts after full-mouth tooth extraction. In the present study, a reduction in counts of individual WBCs, i.e., neutrophils, lymphocytes, eosinophils and monocytes, was also observed, but this decrease was statistically non-significant. No difference was found with respect to basophil count in the present study. Taylor *et al.* (2006)[9] have also reported a statistically significant decrease in neutrophil and lymphocyte counts after full-mouth tooth extraction. This difference may be attributed to the differences in follow-up period, which was 12 weeks in the study conducted by Taylor *et al.*, as compared to two weeks in our study.

In several epidemiological studies, leucocyte count has been demonstrated to be an independent predictor of prospective coronary heart disease.[10] A direct dose–response relationship has been observed between increasing levels of leucocyte count and graded increase in CVD risk.[10] So, the positive effect of non-surgical periodontal therapy in reducing such factors should be welcomed in the prevention of CVD.

Higher leucocyte count also alters the blood rheology. More cells make the blood more viscous and more cells may adhere to endothelial cells lining the blood vessels, thereby decreasing the blood flow.[11] Reduced blood flow can alter cardiovascular system dynamics, especially in narrow or partly blocked arteries, due to atherosclerotic plaque formation.[11] Microbes (periodontal pathogens) and their products invade tissues to enter the bloodstream. These bacteria attach to or invade vascular endothelial cells and are deeply involved in the formation of arteriosclerotic lesions.[12] Periodontal therapy aims to reduce the number of periodontal pathogens and hence periodontal inflammation, thereby indirectly decreasing the risk of CVD.[8]

Platelets have their main function in haemostasis, but they also play a role in inflammatory and immune processes. Their number increases in chronic inflammation.[13] Griesshammer *et al.* (1999),[14] in a study of 732 patients with elevated platelet counts (>500×10^3) reported that infection was the underlying cause of thrombocytosis in 21% of the subjects studied. Wakai *et al.* (1999)[7] have also reported increased platelet counts in patients with periodontitis. An increase in the number of circulating platelets as a result of inflammatory and infectious processes is known as 'reactive thrombocytosis'.[1]

TABLE 4: Microorganisms and their mode of action on platelets.[4,16-28]

S No.	Microorganisms	Action on platelets
1.	*Streptococcus sanguinis*	Erickson and Herzberg (1993) identified a protein on the surface of platelet-activating strains of *Streptococcus sanguinis*, which was termed as platelet aggregation-associated protein (PAAP). PAAP is similar to a collagen octapeptide region required for platelet aggregation.[16] *S. sanguinis* can increase platelet aggregation, leading to increased thrombus formation. A role for IgG in *S. sanguinis*-induced platelet activation has also been suggested. The depletion of plasma IgG or the antagonism of FcγRIIA, the platelet IgG receptor, both attenuated platelet activation in response to some strains of *S. sanguinis*. These strains engage intra-cellular signalling pathways similar to those underlying traditional IgG-induced, Fc RIIA-mediated platelet activation.[17] A role of a complement system in *S. sanguinis*-induced platelet activation has also been postulated. C1q contains a sequence with high homology to the repeating regions of collagen and PAAP.[18] Platelet aggregation by *S. sanguinis* is an active process rather than a passive cross linking. It is dependent on fibrinogen binding to αIIbβ3.[19]
2.	*Streptococcus gordonii*	The activation of platelets by cell wall proteins (e.g., Hsa protein) of some strains of *S. gordonii* has also been demonstrated.[20]
3.	*Streptococcus mitis*	In some strains of *Streptococcus mitis,* surface protein Pb1A has been proposed as a platelet adhesion protein.[21]
4.	*Streptococcus epidermidis*	*Staphylococcus epidermidis* expresses a fibrinogen-binding protein, serine aspartate repeat protein G (SdrG), which causes adhesion and stimulation of platelets.[22]
5.	*Porphyromonas gingivalis*	*P. gingivalis* has also been shown to be a platelet activator, utilising several mechanisms in a strain-, donor- and thromboxane-dependent manner. It produces proteinases that have been associated with the invasive properties of the organisms.[23] Some strains of *P. gingivalis* produce trypsin-like proteinases, protease I, which can activate platelets.[24] Direct activation of platelets by *P. gingivalis* has also been reported. Arg-specific gingipains (Rgp) secreted by this microbe stimulate platelet aggregation.[25] IgG and FcγRIIA are also critical for platelet aggregation in response to *P. gingivalis*.[26] Toll-like receptors (TLRs) 1, 2, 4, 6, 8 and 9 are present on the surface of platelets. Lipopolysaccharides (LPS) can bind to TLR-4 and lead to the secretion of cytokines like TNF-α (tumor necrosis factor-α) and interleukin-1 (IL-1), which suggest a role of platelets in the innate response to bacteraemia.[27] Taken together, TLRs provide another potential mechanism by which *P. gingivalis*, either directly or via the liberation of LPS, stimulates platelet activation.[4] Animal studies have shown that *P. gingivalis* is as effective as a high cholesterol diet in inducing atherosclerosis.[28]

Periodontitis is the most prevalent bacterially induced inflammatory condition in the world.[15] So, it is reasonable to assume that platelet count increases in periodontal disease patients.

Platelets have been shown to activate in response to a variety of orally derived microorganisms, and the underlying mechanisms are highly species dependent. Several orally derived bacteria like *Streptococcus sanguinis, Streptococcus mutans, Streptococcus agalactiae, Streptococcus pyogenes, Streptococcus gordonii, Streptococcus*

pneumonia, Streptococcus mitis, Staphylococcus epidermidis, Staphylococcus capitis, Pseudomonas aeruginosa and *Porphyromonas gingivalis* have been known to interact with platelets and alter the pro-coagulant state of the body.[4] Some of the mechanisms are discussed in **Table 4**.[4,16-28]

The interaction of one or multiple organisms with platelets upregulates adhesive receptors on the platelet surface, thereby facilitating their binding to damaged or activated endothelial cells early in the atherogenic process. The enhanced release of platelet contents and the presence of bacteria facilitate the accumulation of both platelets and monocytes at the site of injury. All of these provide a surface for the adhesion and locomotion of monocytes prior to their translocation through the endothelial barrier.[29]

A variety of microorganisms like *Streptococcus mutans, Aggregatibacter actinomycetemcomitans, Streptococcus sanguinis, Porphyromonas gingivalis* and *Treponema denticola* have been reported in specimens of heart valves and aneursym walls, including aneurysmal thrombi. DNA from a number of different bacterial species have been found in atherosclerotic plaques. It has been suggested that the presence of these bacteria and bacterial DNA in atherosclerotic plaque is the result of bacteraemia.[30] As many of these species are platelet activators, it is possible that they act synergistically to stimulate platelet adhesion at a site of endotheial activation or damage, providing the surface for migration of immune cells and a focus for thrombus formation.[4]

Thaulow *et al.* (1991)[31] found that platelet counts were positively related to the risk of cardiovascular death. So, an increase in platelets might be another underlying mechanism for the possible link between periodontal inflammation and cardiovascular disease.

In the present interventional study, there was a statistically highly significant decrease in platelet counts two weeks after non-surgical periodontal therapy, i.e., 2.1 lacs/mm^3 to 1.9 lacs/mm^3. Similar results were reported by Christan *et al.* (2002),[8] who showed a decrease in platelet counts after periodontal therapy from 2.54×10^3 to 2.25×10^3/µl. Similar results were observed by Taylor *et al.* (2006),[9] who also reported a statistically significant decrease in platelet count after full-mouth tooth extraction.

Conclusion

Patients with chronic periodontitis exhibit signs of a subclinical systemic inflammatory condition.[32] The results of the present study support this notion. In the current study, statistically significant reductions in TLCs and statistically highly significant reductions in platelet counts were observed following periodontal treatment. Periodontitis may influence the atherosclerotic process in human beings via increasing the WBC and platelet counts, i.e., by altering the pro-coagulant state of the body, which is found to decrease after periodontal therapy. Therefore, it can be concluded that decreasing periodontal inflammation may be a successful key to decrease the risk of coronary heart disease. These systemic markers may prove to be useful tools for the assessment of cardiovascular risk in patients with periodontitis.

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Commonly used topical oral wound dressing materials in dental and surgical practice – a literature review

Abstract

A small number of medicaments are used in oral and maxillofacial surgery to dress wounds, relieve pain, prevent infection and promote healing. While these materials are routinely used, their constituents, uses and effects on oral tissues are rarely discussed. This literature review provides an overview of the constituents, uses and effects of the common materials – oxidised regenerated cellulose, Whitehead's varnish, Carnoy's solution, bismuth iodoform paraffin paste (BIPP), zinc oxide eugenol (ZOE) and Alvogyl.

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Introduction

Surgery in the oral cavity causes trauma to the surrounding tissues and creates a wound that requires time to heal. Bleeding is an expected consequence of surgery and the mouth is a vascular area. However, bleeding after an extraction or dentoalveolar surgery is usually self limiting. Some surgical materials have anticoagulant effects and are useful in achieving haemostasis, when bleeding is not otherwise controlled.[1,2]

Classically, primary closure of a wound is preferred over secondary healing. In the mouth, primary closure is not always possible. Some of the oral tissues, for example the mucosa of the hard palate and attached gingivae, are tightly bound to their underlying bone and cannot be easily mobilised to provide primary closure. In lower wisdom tooth surgery, primary closure of the mucoperiosteal flap has been associated with increased postoperative pain and swelling compared to flap repositioning and secondary healing.[3] Dressing materials have been advocated and applied to wounds in the mouth in order to reduce postoperative pain, promote healing and prevent infection.[4,5] They can also have detrimental effects on the oral tissues. Nerve damage, local tissue reactions and toxicity have been reported.[6-8] It is therefore important to be aware of the constituents of these materials, their uses and the potential for adverse reactions. Some of the commonly used wound dressing materials and their effects on oral tissues are discussed below.

Oxidised regenerated cellulose

Cellulose is a carbohydrate that is found in the plant cell wall. It was noted in the 19th Century that cellulose could be oxidised, but it was not until 1942, when Yackel and Kenyon described a method of oxidising cellulose using nitrogen dioxide, that the material became useful in surgery.[2,9] Regenerated cellulose is now made by first dissolving the cellulose and then extruding it as a single fibre. This technique allows a more uniform chemical composition than the original nitrogen dioxide method.[10] Proprietary brands of oxidised regenerated cellulose include Surgicel, ActCel, Curacel and Gelita-Cel (**Figure 1**).[11-14]

Oxidised regenerated cellulose is used as a haemostatic agent, working primarily by chemical interaction with blood.[2] It forms a gelatinous mass when mixed with blood that functions as an artificial blood clot (**Figure 2**).[10] Due to its low pH, it may also have some antimicrobial effects.[15]

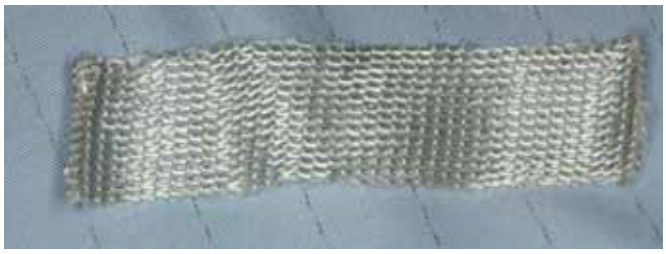

FIGURE 1: Oxidised regenerated cellulose (Surgicel).

FIGURE 2: Oxidised regenerated cellulose retained by gently applied sutures in extraction sockets.

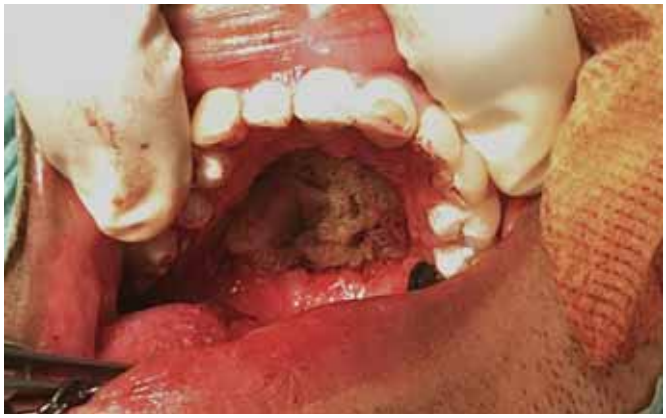

FIGURE 3: Ribbon gauze with Whitehead's varnish following removal of a palatal plaeomorphic adenoma.

Table 1: Constituents of Whitehead's varnish.[17]

Material	Quantity
Iodoform	10g
Benzoic acid	10g
Storax	7.5g
Balsam of Tolu	5g
Ether	100ml

Table 2: Constituents of Carnoy's solution.[28]

Material	Quantity
Chloroform	3ml
Glacial acetic acid	1ml
Ferric Chloride	1g
Alcohol	6ml

Oxidised regenerated cellulose has been shown to be relatively biocompatible. Animal studies have shown it to be completely broken down subcutaneously within 45 days and it does not significantly interfere with wound healing.[16] In view of its biocompatibility, dissolved oxidised cellulose was originally considered as a plasma substitute.[2] Loescher and Robinson in 1998 raised concern over the potentially neurotoxic effects of oxidised regenerated cellulose. They directly applied Surgicel to the rat saphenous nerve and showed an immediate but short-lived reduction in nerve function. They did not demonstrate any long-term change in nerve function when the material was applied for one week.[6] Oxidised regenerated cellulose is used extensively in the field of neurosurgery, where neurological complications have not been reported.

Whitehead's varnish

Whitehead's varnish was first described in a case report by Walter Whitehead in 1891 on its use following tongue resection.[1] The original varnish used by Whitehead contained iodoform, ether and turpentine. The composition of the Whitehead's varnish that is currently used is shown in **Table 1**.[17] Iodoform (tri-iodomethane) is an antiseptic compound with the chemical formula CHI_3. Benzoic acid is a preservative and disinfectant. Together, they give the varnish its antiseptic properties. Storax is a resin that is obtained from the sweetgum tree. It is a mixture of compounds, and is used in the perfume industry as a fixator of aromatic substances.[18] It also contains styrene and was the original source of the first polystyrene, used in our daily lives.[19] Balsam of Tolu is a resin that is obtained from South American balsam trees, and is also used in the perfume industry.[20] These materials are kept in solution using ether as a solvent.[17]

In Whitehead's original report, the prevention of capillary oozing, postoperative pain relief and allowing the patient to be fed orally were the main benefits attributed to the varnish.[1] Among published uses for the varnish are as a dressing for skin graft donor sites, as a pack for cystic cavities of the jaw, to reduce pain following wisdom tooth removal, in orbital floor reconstruction, in cleft palate surgery, and with the surgical management of osteomyelitis.[21-27] In all of these cases the varnish acts as a dressing material to keep soft tissue or bony cavities free from infection postoperatively and to prevent bleeding (**Figure 3**).

Carnoy's solution

FIGURE 4: Carnoy's solution.

Carnoy's solution is a tissue fixative used primarily in histological sample preparation. It is made up of chloroform, acetic acid and ferric sulphate, in an alcohol solvent (**Figure 4**).[28] Carnoy's solution is used in the mouth as a tanning agent in order to facilitate the removal of cyst linings. Most notably its use has been advocated prior to the enucleation of keratocystic odontogenic tumours (KOTs).[29] It allows the thin, friable lining of these cystic neoplasms by fixation

Table 3: Constituents of bismuth iodoform paraffin paste.[32]

Material	Quantity
Iodoform	440g
Bismuth subnitrate	220g
Paraffin base	220g

Table 4: Some zinc oxide-based dressing materials.

Eugenol-containing	Non-eugenol-containing
Kalzinol[47]	Coe-Pak[48]
Nobetec[49]	Voco-Pak[50]
	Perio Care[51]

Table 5: Constituents of Alvogyl.

Material	Quantity
Butamben	25.7g
Iodoform	15.8g
Eugenol	13.7g

Excipients: olive oil, spearmint oil, sodium lauryl sulphate, calcium carbonate, penghawar djambi, purified water

FIGURE 5: BIPP on ribbon gauze.

and contraction to be more completely removed, reducing the rate of recurrence.[30]

A common site for KOTs to occur is the angle of the mandible. They may therefore be in close proximity to, or involving, the inferior alveolar nerve. *In-vivo* research in the rat and rabbit has shown Carnoy's solution to have detrimental activity on nerve function.[6,28] Frerich *et al.* in 1994 investigated the effect of Carnoy's solution on rabbit inferior alveolar nerves under general anaesthesia. This study found that no effect on nerve function was observed when Carnoy's solution was placed in contact with the nerves for up to two minutes. However, after three minutes of application, some reduction in nerve function was noted, and after a five-minute application almost no nerve function remained.[28]

Loescher and Robinson in 1998 also looked at the effect of Carnoy's solution using an *in-vivo* model.[6] They found that the rat saphenous nerve was completely inhibited after two minutes when Carnoy's solution was placed directly on the nerve. When Carnoy's solution was left *in situ* for two weeks, two out of the four nerves showed no electrical activity. In the other two, the nerve function was significantly reduced.[6]

Clinically, anaesthesia and paraesthesia of the inferior alveolar nerve have been reported following the removal of KOTs treated with Carnoy's solution and enucleation. Gossau *et al.* in 2010 reported on the recurrence rates and postoperative nerve damage following enucleation of KOTs.[30] They found that postoperative nerve damage occurred in six out of 23 patients treated. Nerve damage was present in patients treated with and without Carnoy's solution. While it is apparent that damage can be caused as a result of enucleation alone, it is difficult to know from clinical reports how much damage is due to the application of Carnoy's solution. High success rates in the treatment of KOTs have also been shown by marsupialisation, which has made the use of Carnoy's solution less common.[31]

Bismuth iodoform paraffin paste

Bismuth iodoform paraffin paste (BIPP) was first described by Rutherford Morison in 1917.[32] He noted that the combination of bismuth and iodoform mixed with paraffin, when applied to open wounds, allowed excellent healing and reduced rates of infection. This discovery was made of necessity during the First World War, when gunshot wounds and large open wounds were becoming common on a large scale for the first time.[32] Bismuth is a trivalent metallic element with the atomic number 83. Iodoform (tri-iodomethane) is an antiseptic compound with the chemical formula CHI_3. The formulation of BIPP as described by Morison is show in **Table 3**.

After the war, BIPP continued to be used as a dressing material for fractures and open wounds with good success.[33] Currently, BIPP is used as a wound packing and dressing material (**Figure 5**). Its use as a wound bandage has been advocated in those at risk of dry socket.[34] It is commonly used to prevent infection after the reduction of nasal fractures.[35] Its use has also been described in the treatment of epistaxis and as a dressing after ear surgery.[36-38] Bismuth toxicity, leading to neurological impairment, has been reported. It is recommended that BIPP be applied sparingly to open wounds as a result.[7,32,39,40]

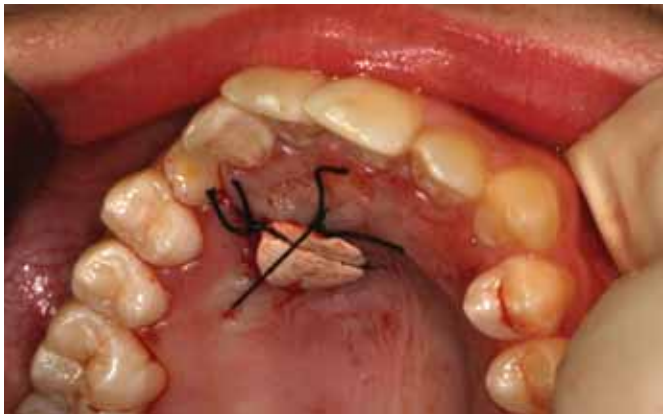

FIGURE 6: A non-eugenol (Coe-Pak) dressing covering an exposed canine, retained by silk sutures.

FIGURE 7: Alvogyl.

Zinc oxide-based dressings

Zinc oxide can be combined with other materials to form a paste or cement, which is used to cover the gingival tissues or extraction sockets. These materials function to provide a physical barrier against the entry of food or other materials. They may be divided into eugenol-containing and non-eugenol-containing materials (**Table 4**).

Eugenol has been shown to have anaesthetic properties; its derivatives have been used for general anaesthesia.[41] These properties are often desirable in the presence of inflammation to reduce postoperative pain. However, it has also been associated with contact allergy at low doses and cytotoxicity at high doses.[42] Alemen Navas *et al.* in 2010 described a case where a zinc oxide and eugenol dressing was used to treat dry socket. It was not removed and was covered by soft tissue, becoming embedded in the alveolus and causing chronic pain.[43] These dressings must be removed.

Non-eugenol zinc oxide-based materials avoid the potential for eugenol-related cytotoxicity and allergy. However Saito *et al.* in 2008 showed that the non-eugenol materials also cause inflammatory reactions. They placed a number of periodontal dressing materials into rat incisor extraction sockets and histologically examined the effects of the materials over a 28-day period. They found an increase in inflammatory reaction at 28 days for all materials compared to controls.[44] Alpar *et al.* found that Coe-Pak reduced the growth of human primary gingival fibroblasts *in vitro*, but showed no reduction in the growth of human osteoblast-like cells.[45]

Jorkjend and Skoglund in 1990 compared the postoperative pain after periodontal surgery of materials containing eugenol and those without eugenol.[4] They found that the non-eugenol material resulted in greater reported pain in the first 12 hours postoperatively compared to the eugenol-containing materials. They suggested that this may be due to the local anaesthetic effects of eugenol on the soft tissue nerve fibres. While this study shows that the eugenol-containing materials can reduce postoperative pain, they are not a replacement for regular analgesics.

All of the zinc oxide materials act simply as a physical barrier to protect the wound and are not antibacterial.[46] **Figure 6** shows a non-eugenol zinc oxide dressing material in place.

Alvogyl

Alvogyl is a proprietary material that has butamben, iodoform and eugenol as its active ingredients.[52] It is primarily used for the treatment of alveolar osteitis. Butamben is an ester local anaesthetic with the chemical name butyl 4-aminobenzoate.[53] Iodoform is an iodine-based antimicrobial agent. Eugenol is an essential oil, which is derived from numerous plants, including cloves.[54] Numerous other materials are mixed with these active ingredients to form a paste-like consistency. Penghawar djambi is one of these materials, which is a product of fibres of the bracken fern *Cibotium barometz*.[8] The composition of Alvogyl, according to the manufacturer, is shown in **Table 5**.[55]

Alvogyl (**Figure 7**) is often used for the treatment of alveolar osteitis.[52] It is placed into an extraction socket with the aim of reducing pain and infection.[56] Syrjänen and Syrjänen in 1979 showed that Alvogyl delays healing in extraction sockets.[8] Their study was carried out on eight volunteers, each of whom required the removal of two molars. One extraction socket was packed with Alvogyl, while the other was left to heal normally. At one week and two weeks post extraction, a biopsy was taken from each site and the degree of healing compared. The authors found a significantly higher level of fibrous tissue, inflammatory reaction and giant cells in the sockets dressed with Alvogyl. Despite this they noted that all patients subjectively reported less pain in the sites that had been treated with Alvogyl. Interestingly, the effectiveness of Alvogyl in treating alveolar osteitis has only recently been demonstrated by Kaya *et al.*[56,57] They compared curettage alone to curettage with Alvogyl, an aloe vera extract and low-level laser therapy. A significant reduction in reported pain was shown for all treatments when compared to curettage alone.

Conclusion

Dressing materials can be used in the mouth to aid healing, prevent infection and reduce postoperative discomfort. However, all materials have the potential to cause local and systemic adverse reactions. It is therefore important to be aware of the constituents and effects of these materials on the oral tissues.

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Safety issues of tooth whitening using peroxide-based materials

Li, Y., Greenwall, L.

In-office tooth whitening using hydrogen peroxide (H_2O_2) has been practised in dentistry without significant safety concerns for more than a century. While few disputes exist regarding the efficacy of peroxide-based at-home whitening since its first introduction in 1989, its safety has been the cause of controversy and concern. This article reviews and discusses safety issues of tooth whitening using peroxide-based materials, including biological properties and toxicology of H_2O_2, use of chlorine dioxide, safety studies on tooth whitening, and clinical considerations of its use. Data accumulated during the last two decades demonstrate that, when used properly, peroxide-based tooth whitening is safe and effective. The most commonly seen side effects are tooth sensitivity and gingival irritation, which are usually mild to moderate and transient. So far there is no evidence of significant health risks associated with tooth whitening; however, potential adverse effects can occur with inappropriate application, abuse, or the use of inappropriate whitening products. With the knowledge on peroxide-based whitening materials and the recognition of potential adverse effects associated with the procedure, dental professionals are able to formulate an effective and safe tooth-whitening regimen for individual patients to achieve maximal benefits while minimising potential risks.

British Dental Journal 2013; 215: 29-34.

In-vitro demineralisation of tooth enamel subjected to two whitening regimens

Ogura, K., Tanaka, R., Shibata, Y., Miyazaki, T., Hisamitsu, H.

Background. The resistance of bleached enamel to demineralisation has not been elucidated fully. In this study, the authors aimed to examine the level of *in-vitro* demineralisation of human tooth enamel after bleaching by using two common bleaching regimens: home bleaching (HB) and office bleaching (OB) with photo-irradiation.
Methods. The authors bleached teeth to equivalent levels by means of the two bleaching regimens. They used fluorescence spectroscopy to measure the reduction in enamel density and the release of calcium into solution after storing the treated teeth in a demineralising solution for two weeks. They also visualised and quantified mineral distribution in demineralised bleached enamel over time by using a desktop microcomputed-tomographic analyser.
Results. Enamel subjected to HB or to photo-irradiation without bleaching showed increased demineralisation. In contrast, enamel treated with OB was more resistant to demineralisation. This resistance to demineralisation in teeth treated with OB presumably is due to peroxide's permeating to deeper layers of enamel before being activated by photo-irradiation, which enhances mineralisation.
Conclusions. The mineral distribution pattern of enamel after treatment plays a critical role in providing resistance to demineralisation in whitened teeth.
Practical implications. OB confers to enamel significant resistance to *in-vitro* demineralisation. Dentists should supervise the nightguard HB process.

The Journal of the American Dental Association 2013; 144: 799-807.

Single-tooth implants with different neck designs: a randomised clinical trial evaluating the aesthetic outcome

den Hartog, L., Raghoebar, G.M., Huddleston Slater, J.J., Stellingsma, K., Vissink, A., Meijer, H.J.A.

Aim: To evaluate the aesthetic outcome of single-tooth implants in the aesthetic zone with different neck designs from a professional's and patient's perception.
Materials and methods: Ninety-three patients with a missing anterior tooth in the maxilla were randomly assigned to be treated with an implant with a smooth neck, a rough neck with grooves, or a scalloped rough neck with grooves. Implants were installed in healed sites. One year after definitive crown placement (18 months post implant placement), photographs were taken and the aesthetic outcome was assessed according to two objective aesthetic indexes: pink esthetic score/white esthetic score (PES/WES) and implant crown aesthetic index (ICAI). A questionnaire was used to assess the aesthetic outcome and general satisfaction from a patient's perception. Standardised radiographs were taken to measure marginal bone level changes.
Results: One implant was lost. Although there was a significant difference in marginal bone loss between the different implant neck designs (smooth neck 1.19±0.82mm, rough neck 0.90±0.57mm, scalloped neck 2.01±0.77mm), there were no differences in aesthetic outcome. According to the professional's assessments using PES/WES and ICAI, 79.3% and 62% of the cases showed acceptable crown aesthetics, and 59.8% and 56.5% of the cases showed acceptable mucosa aesthetics. Overall, patients were satisfied about the aesthetics of the mucosa (81.5%) and crown (93.3%), and general patient satisfaction was high (9.0±1.0 out of a maximum of 10). According to the professional's assessment, a pre-implant augmentation procedure was associated with less favourable aesthetics of the mucosa.
Conclusion: This study shows that the aesthetics of single-tooth implants in the maxillary aesthetic zone appears to be independent of the implant neck designs applied but dependent on the need for pre-implant surgery.

Clinical Implant Dentistry and Related Research 2013; 15 (3): 311-470.

Thickness and fit of mouthguards according to a vacuum-forming process

Mizuhashi, F., Koide, K., Takahashi, M.

The purpose of this study was to examine the difference in the thickness and the fit of mouthguards fabricated with a vacuum-forming method of the mouthguard sheet material. The material used in this study was Sports Mouthguard (3.8mm thickness). Two forming conditions were performed. In the first condition, the sheet was lowered over the working model after the vacuum was applied, and in the other trial, the sheet was lowered over the working model before the vacuum was applied. The sheets were formed using a vacuum former when the heated sheets hung 1.5cm from the baseline. We measured the thickness and the fit of the mouthguard at the areas of the central incisor and first molar in both conditions. The difference of the thickness at the areas of the central incisor and first molar, and the forming condition, was analysed by two-way anova. The difference of the fit according to the forming conditions was analysed by the Mann–Whitney U test. The results showed that the thickness of the mouthguard differed at the areas of the central incisor and first molar, but the thickness of the mouthguard did not differ according to the forming conditions. The fit of the mouthguard at the central incisor and first molar was significantly different between the forming conditions ($P<0.01$ and $P<0.05$). These results suggested that the fit of the mouthguard was the best without any deficiency of thickness when the vacuum was applied first and then the sheet was pressed onto the working model. These results may be useful in fabricating proper mouthguards.

Dental Traumatology 2013; 29 (4): 253-337.

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ABOVE: Nicola spent almost two years searching for the perfect premises in Malahide.

LEFT: The Pelton and Crane chair in situ *in Nicola's new surgery.*

Practice made perfect

Meticulous planning and strong support are essential in setting up a dental practice from scratch. ANN-MARIE HARDIMAN spoke to Dr Nicola Zammit about her experiences.

A native of Malta, Nicola Zammit has always wanted to own her own practice, and having made Malahide in north Co. Dublin her home, she decided it would be the perfect base for her business as well. Ivory Dental Care has now been open for business for two months, and Nicola is ably supported by dental nurse/receptionist Kate Inne and hygienist Paula Lyons. Looking around the modern, clean and attractive premises, it's hard to imagine that this was a derelict, open plan house just a year ago, but a huge amount of work has gone into bringing it up to standard.

Getting started

After two years of searching, Nicola found the building on Old Street in the heart of Malahide village, and then began the arduous process of financing, purchasing, planning and refurbishing. To achieve this, she called on the services of a range of professionals and colleagues. Obtaining finance took some time and wasn't easy.

"I went to several banks, but Donal Atkins of Atkins Mortgage & Insurance Ltd helped me to obtain a bank loan with AIB with a decent business interest rate, and set up the necessary insurances".

After a lengthy and stressful planning process, building work finally began. Extensive renovation was required to fit out a modern, state-of-the-art dental practice. To complicate matters further, Nicola

worked as an associate in three other practices during the whole process, and still does ("Everything I make from this practice goes back into the business"). This meant that she needed a team of people she trusted to take on the responsibility of the renovation, and that's exactly what she had.

"My architect, Brian Jennings, and builder James O'Byrne, had a lot of experience with dental practices, and a good friend, Martin Brennan, acted as project manager."

A crucial part of this process was the involvement from the start of Jim Way from Henry Schein, who Nicola chose as her supplier.

"They were all present from day one, working together. Jim made very accurate plans following my guidance so all the team knew, for example, exactly where the chair was to go, and where cabling and sockets were going to be. These things are so important. If they go wrong, then you have to go back and lift the floor, so a lot of things had to be planned from day one."

Nicola now has a premises that is equipped not only for her current needs, but for the future as well.

"We hope to get an OPG, and eventually another chair upstairs, so everything will be ready to go when the time comes."

She's also well prepared for new infection control standards down the line. "It shouldn't be a headache because Jim helped me in being ready beforehand so that everything complies. To be able to practise certain procedures, such as surgery for example, you have to have the right set up, and that's what I wanted."

Equipment

The decision on which equipment supplier to use was not an easy one, and Nicola thought long and hard about her options, including looking into getting equipment from Malta.

"Buying equipment from Malta would have been cheaper but my reasoning was you'd have no support. A problem could cost me a day's work, but any time there was any little hiccup, Henry Schein was here the same day or the next day. That's what I needed, and that mattered over the difference in price. You need to build a rapport in the long term, to feel comfortable to lift the phone for advice."

Henry Schein also supplied the particular equipment that Nicola wanted.

"I was adamant that I wanted the Pelton and Crane chair, as I'd worked with one in IFSC Dental Care. It's comfortable and patients love it, as it's also a massage chair!"

For her digital x-ray needs, Nicola chose VistaScan, once again with support from Henry Schein. She also plans to offer an implant service, as she has extensive oral surgery experience both in the UK and Ireland, and has completed training in implant placement, but setting up the surgery was another learning curve.

"I didn't know where to start, but Dr Anne O'Donoghue in Northumberland gave me great advice, as did Paul Kenefick from Straumann."

Nicola has purchased most of the equipment in the surgery, but is leasing larger items, such as her beloved Pelton and Crane chair, over five years. She already has a list of items that she hopes to soon add, such as a washer-disinfector and an OPG.

IT

Setting up an IT system for the practice was the next challenge. OmniSys provided the computer system, and Nicola put a lot of thought into her choice of software.

"I had meetings with a lot of companies but in the end I went with

Nicola is ably assisted by practice dental nurse/receptionist Kate Inne.

Hygienist Paula Long is the third member of the Ivory Dental Care team.

I'm starting from scratch, so I have to create awareness, while at the same time respecting the profession.

Coincidental Dental Software, who were great support, and I think it's really good software as well."

As Nicola is not able to be on the premises all day every day, she needs to know that Kate, who is the practice's only full-time staff member, has support.

"There's so much to learn and I went with people who were ready to support us on a day-to-day basis. It's not the cheapest but the support is brilliant and the software is very versatile."

Infection control

TileStyle provided the tiles for appropriate flooring with antibacterial grouting. They also gave Nicola and Kate great ideas for a feature wall behind the reception desk. They used amtico flooring for the surgery, as it is more hygienic and easy to clean thoroughly on a daily basis. This was yet another steep learning curve.

"I had to read quite a bit. As an associate you don't think of these things, you just go in and out and do your job, but I enjoyed it and learnt so much in the process.

"Because I plan to do surgery and implants, I had to be really careful. The bins and taps are all foot operated, and I had great help from Initial Medical in setting up for waste management, so that everything is fully compliant with best practice."

Business and marketing

A major issue for young dentists setting up in practice is the lack of business training in dental schools, and Malta is no different in this regard. As with everything else though, Nicola planned ahead and made sure that she was well prepared, completing courses on business management with Dr Garry Heavey, and with Dr John Barry. She also praises the staff at IDA House, in particular Clare Dowling and Elaine Hughes, who had lots of advice about human resources and becoming an employer. Nicola also found the IDA's website, and the Dental Council's Code of Practice, very helpful for another crucial part of setting up a new business, the thorny area of marketing.

"I'm starting from scratch, so I have to create awareness, while at the same time respecting the profession and being subtle and ethical. I think if you regard it as patient education, and combine that with awareness of your practice and opening doors to new clients, then I am very open to that, but I needed guidance in how to go about it properly."

Nicola also drew on the services of friend and local businesswoman Bernice Burnside of Bvisible PR.

"Bernice's support has been priceless. She helped me to organise some events in the area. For example, we supported a Malahide United football tournament. I gave a talk about oral health, and we gave them some samples and vouchers, and just had a chat about diet and oral hygiene with the parents and kids on the day. We had a great response from that."

And the work doesn't stop now that the practice has opened. Nicola has joined the Fingal Women in Business Group, and is working to build relationships with local businesspeople. She is also involved with the Metropolitan Branch of the IDA, and this year she and Kate travelled to the Association's conference in Galway for the first time as a dental team.

"We found that very helpful, and got a lot out of it. Kate has a degree in business and worked as a dental nurse in another practice last year, but is not a qualified dental nurse yet. She will begin the dental nursing course in Trinity College in August. We've had a lot of help from qualified nurses – who I'm really grateful to – who constantly support Kate and spent a great deal of time with her."

Future plans

From the pretty shutters on the window, to the outside waiting area for those rare sunny days, and the generous storage so that consumables are out of sight, no detail has been left to chance. The roller blinds carry the practice logo and contact details, with help from DoItMobile and Point Graphics of Harcourt Street in coming up with an identity.

Even the compressed air and suction machine is outside, to reduce noise and make the practice a more relaxing place for patients and staff. Nicola is particularly proud of the fact that there is a window in every room, including an impressive skylight directly above the dental chair.

"Coming from Malta I love the sunshine and the light; it's one of the reasons it took me so long to find a premises. Now, when patients are lying back they can see the sky."

All that remains is the minor issue of making the practice a success, but Nicola is confident that things are going according to plan.

"I was very careful with my projections. David McCaffrey of Medaccount was really helpful; he and Donal Atkins worked together to develop a business plan for me."

For the moment, Nicola intends to continue working in IFSC Dental Care and in the Ashbourne Dental Centre. She praises the principal at IFSC, Dr Gerry Gaffney, as well as the staff at Ashbourne, for their support to her and to Kate, and is happy to continue to learn from these practices until such time as she can make Ivory Dental Care her full-time job. In the meantime, she offers late evenings and Saturdays at the new practice. It's a punishing workload of 12-hour days, but Nicola isn't afraid of hard work, and the reward of knowing she's building a practice for the future makes it all absolutely worth it.

"This is the time to do it and I'm ready to give it 100%. I have such nice clients coming in and it's lovely to create a rapport and a relationship with them because now I know this is it: I'm going to be here for them."

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Experienced graduate (TCD, 1999) seeking part/full-time work in mid/north west or Kildare/Dublin areas. Email: dentist1275@gmail.com.

POSITIONS VACANT

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Enthusiastic associate required for busy, long-established family-centred practice in Dublin. PRSI/private only. Post to commence end June. CV essential. Email: dublinwestdental@gmail.com.

Part-time associate required for busy modern practice in Westmeath. Growth potential. General practice experience essential. Send CV to aidan@kinnegaddental.ie.

Experienced associate required July – locum, then one day a week plus alternate Saturdays (half day). Full book. South Dublin on Dart line. Email: interestedindentaljob@gmail.com.

Associate dentist required to replace departing colleague in long-established, busy south Dublin practice. Minimum of three years' general practice experience and excellent interpersonal skills required. For further details, please Tel: 01-294 5122, or Email: clairefoley11@yahoo.ie.

Part-time dentist, with a view to full-time, required for well-established practice in Kilkenny City. Email: office@newparkclinic.ie.

Dental associate required immediately for four-surgery practice. Fully computerised. OPG, digital x-ray. Owner retiring. Please Tel: 086-804 9390, Email: mullingardental@gmail.com, or Fax: 044-933 1748.

Associate wanted to take over existing book two or three days per week in a busy practice 30 minutes outside M50. Experience essential. State-of-the-art equipment, superb nursing support and in-house periodontist and endodontist. Please reply with CV to: abbeydentists@hotmail.com.

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Associate dentist required to take over existing book in busy west Dublin practice. Two-and-a-half days available including Saturdays (half day). Reply to dentalassociaterequired@gmail.com.

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Dentists (full- and part-time) required for west Cork practice. Email: keoh1981@gmail.com.

Dentist required for full-time work (all disciplines) to commence late August. Saturday mornings included. Busy multiple-surgery practice outside Dublin. Experience essential. Ability to speak and understand Polish preferred but not essential. Apply with CV to h.gleeson@centrichealth.ie.

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Young, enthusiastic dentist required to join older practitioner in well-established south Dublin practice (over 30 years). Options open to practice/share, buy in. Email: southdublindental@gmail.com.

Locum wanted, Longford. June 24 to July 6, 2013. Remuneration 66%. Email: longdentant@gmail.com.

Locum dentist required from September 3-7 for busy south Dublin general practice. Please email your CV to: hello@ballybrackdental.ie.

Locum dentist required from August 29 to September 20. Computerised practice with excellent support staff. Skerries, north Co. Dublin, 25 minutes to city centre. Please email CV to: skerriesdental@gmail.com.

Locum required for busy, friendly south Dublin practice in Templeogue area for September 16 to 26. Busy private, PRSI and medical card practice. Please send CV to enrightse@gmail.com.

Maternity locum required for 12+ weeks, from end of August 2013, in busy surgery based in Killaloe, Co. Clare. Tel: 087-233 3053, or Email: killaloedental@gmail.com.

Maternity locum required for three months, busy southwest Dublin practice. Position starts mid September 2013. General practice experience essential. Modern practice, fully computerised, excellent support staff. Email: mayberrydentalcare@gmail.com.

Part-time position available to cover maternity leave from late August to mid-March – Mon, Tues, Wed. Knowledge of DTSS and Exact an advantage. Modern, midlands practice. Email: neil@abbeyleixdental.com.

Oral surgeon required part-time for Cork City practice. Must be eligible to register with VHI, LAYA and HSE. Please email CV to: oscardermody@eircom.net.

Orthodontist required to replace departing colleague. Excellent support. Dublin northside. Responses to: 1casanaview@gmail.com.

Endodontist required for busy private practice in south Dublin. One busy day per month initially with a view to increasing. Please reply if interested to: endodontist@outlook.ie.

Oral surgeon, Northern Ireland. Specialist oral surgery position available in specialist referral multidisciplinary clinic. Fully computerised. CT cone beam scanner and microscope equipment available. Immediate commencement. Apply with CV to: southdowndental@btconnect.com.

Dental hygienist position available in North County Dublin. Please email applications to eoin@oneilldentalcare.ie.

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Quiz answers

(questions on page 168)

1. **Why does the upper left lateral incisor root apex appear resorbed in the dental pantomograph?**
   In studies, the dental follicles of ectopically erupting canines appear, on average, wider than those of the normally erupting canines. Also, the width of the focal trough in the dental panoramic technique is very narrow in the anterior area; the root apex may be outside the focal trough. This results in the follicle shadow being dominant in this image.

2. **Does the unerupted canine crown lie buccal, superior or palatal to the root of the lateral incisor?**
   The crown of the canine tooth lies buccal to the lateral incisor. In the occlusal image it moves coronally; if it were palatal it would move apically.

3. **What is the localisation technique called?**
   The technique is called vertical parallax. The angle of the x-ray beam in the panoramic is -10º, while that of the occlusal projection is +65º. Here, the crown of the impacted canine moves in the opposite direction to the movement of the x-ray tube. If it were palatal, it would have moved apically (SLOB rule).

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September 11 *Maryborough House Hotel, 8.00pm*

Oral Health Promotion Research Group, Ireland – Making a Difference in Challenging Times
September 12 *Aisling Hotel, Dublin.*
An overview of future directions for oral health promotion on the island of Ireland. See: www.dentalhealth.ie/ohprg/events/2013/09/12//, or Email: rose.bradleymolloy@hse.ie.

Mouth Cancer Awareness Day
September 18 *Nationwide*
Register to participate in this year's event by logging on to www.mouthcancerawareness.ie.

The Frontiers of Head and Neck Cancer Care and Research
September 19 *DDUH, 6.30pm to 10.00pm*
For further information and to book, visit www.dentalhospital.ie/alumni/events/, or Email: alumni@dental.tcd.ie. CPD points have been applied for.

Captain's Prize
September 21 *Carlow Golf Club*

Too Long in the Tooth – IDA Retirement Seminar
September 27 *Bewley's Hotel, Leopardstown, Dublin*
For information and to book, contact IDA House.

Irish Academy of American Dental Specialists – Annual Meeting
September 28 *The Radisson Blu Hotel, Golden Lane, Dublin*

OCTOBER

European Society of Head and Neck Radiology Annual Scientific Meeting
October 3-5 *Ismir, Turkey*
For more information, see www.eshnr.eu.

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IDA hands-on implants course
October 12 *IDA House*
Available to IDA members only. This hands-on course will provide dental surgeons with both the surgical and prosthetic skills to start simple implant dentistry in their practice.

HSE Dental Surgeons Group Annual Seminar
October 16-18 *Mullingar Park Hotel*

AHEKON, the 4th Annual International Family Practice Congress
October 23-27 *Susei Luxury Resort, Antalya, Turkey*

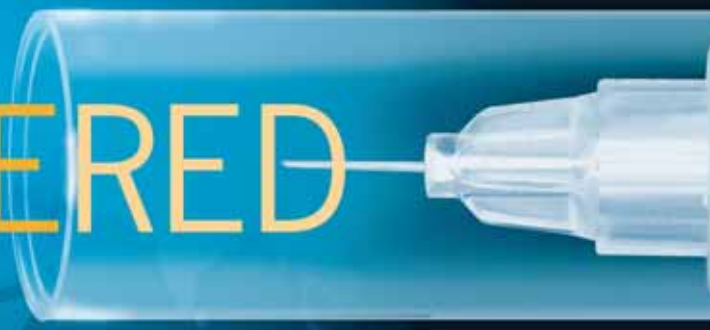
Faculty of Dentistry RCSI Annual Scientific Meeting 2013 – Surgical Aspects of Dental Practice
October 24-25 *RCSI, Dublin*
To register and for further information contact the Faculty Office at facdentistry@rcsi.ie.

MAY 2014

IDA Annual Conference 2014
May 15-18 *Lyrath House Hotel, Kilkenny*

NEW REGULATIONS ON NEEDLE INJURIES

GET COVERED



COMPLIANT WITH NEW REGULATIONS[1]!

ULTRA SAFETY PLUS
THE SAFE INJECTION SYSTEM.

As the world leader in dental pain control [2], Septodont solves the increased need for safe simple solutions to meet new safety regulations.

Over the years Ultra Safety Plus has proven its efficacy and ease of use becoming the standard for needle stick protection on all dental local anesthetic procedures. In the United Kingdom, Ultra Safety Plus already represents over 45% of the injection systems used in the dental groups and hospitals.[3]

Ultra Safety Plus is offered in an assortment of needle lengths and you can choose the sterile single-use handle or an autoclavable handle.

Ultra Safety Plus. Get Covered.

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[1] Council Directive 2010/32/EU of 10 May 2010

[2] Septodont is the only company producing 500 million dental cartridges per year

[3] Source SDM data, YTD Q3 2012

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