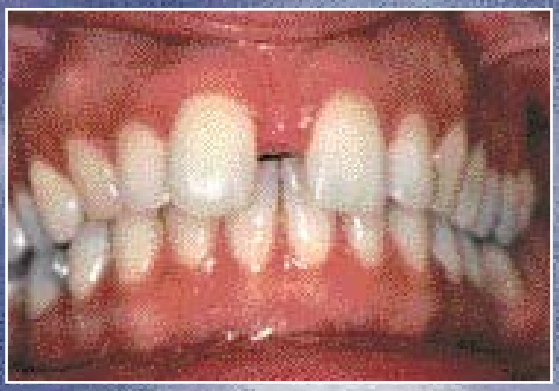
Volume 50 Number 1 Spring 2004

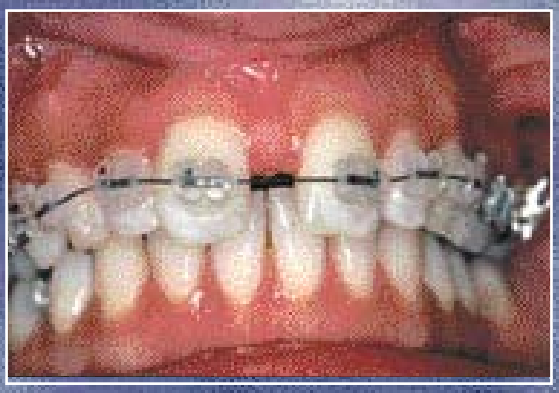
Journal of the Irish Dental Association

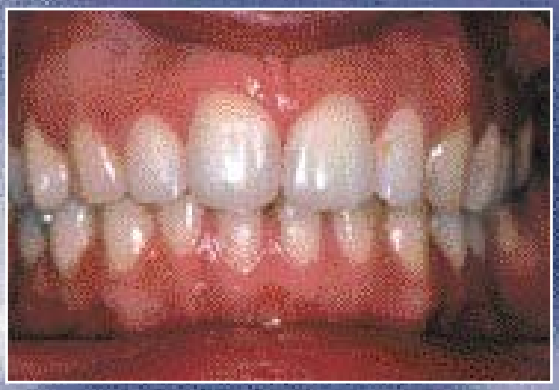
Iris Cumainn Déadach na hÉireann



Maxillary midline diastema

Aetiology and orthodontic treatment





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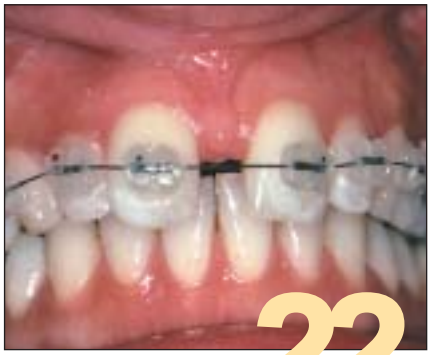

Regulars

REGULARS

Features

FEATURES

Changing for the better

Change, as the saying goes, is always good. Last November, the Journal Subcommittee met with the aim of revamping the Journal — the flagship publication of the Irish Dental Association — and building upon its great reputation. The Journal, the Subcommittee felt, was due some new thinking and design. Hopefully, you will like the new format; we have new publishers, a new cover design, a new layout and new content. We invite your comments and suggestions on the new look Journal.

Speaking of change, I would also like to welcome the Journal's new and extended editorial board. I look forward to working with the editorial board in reviewing and sourcing material. On that note, although your response to my previous request for articles was certainly encouraging, nevertheless, I once again appeal to you to submit articles and ideas to us (particularly clinical techniques and cases). For those of you interested in writing an article, I would encourage you to contact me, or a member of the editorial board. Please note the new guidelines for articles, which appear in this issue.

This edition of the Journal also includes an interview with Professor Van Haywood, a leading authority on bleaching. Professor Haywood co-authored the first article on vital nightguard (at home) bleaching in 1989, and the first article on extended bleaching for tetracycline patients in 1997. Professor Haywood reminds us that patients seeking bleaching require a dental assessment, including radiographs, and diagnosis before prescribing bleaching. Nevertheless, I note with interest recent newspaper advertisements by dental technicians offering this service to the public. A recent article in the *Sunday Tribune* alerts its readership to the availability of this service in a non-dental clinic. I would invite your views on this, whether anonymous or otherwise.

On a lighter note, in each issue of the Journal, a quiz, sponsored by Nobel Biocare Ireland, will appear. The prize for this issue's quiz, which is submitted by Dr Dónal McDonnell, is a case of wine worth €150.

Finally, the annual conference will be held in Limerick from April 28, and has an exciting line-up of speakers on a broad range of topics. I look forward to seeing you all there.

Aisling O'Mahony
Editor

Irish Dental Association Cumann Fiacloirí na h-Éireann

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Displaying prices

Tánaiste, Mary Harney: wants patients to become price aware.

The Director of the Office of Consumer Affairs, Carmel Foley, has been campaigning to have a Prices Display Order made under the Prices Act, which would require dental surgeons, doctors and 'allied health professionals' to display price lists outside their surgeries.

In order to ensure a balanced consideration of Carmel Foley's suggestions, the IDA requested participation at relevant talks.

In December, Tánaiste, Mary Harney, told the Dáil that she had requested her Department to: "Pursue, in consultation with relevant professional bodies, measures to promote greater price awareness by patients such as the making of a Prices Display Order."

A number of meetings have been held with senior officials of the Department of Enterprise, Trade and Employment and representatives from the Office of the Director of Consumer Affairs. The Director appears to be seeking display of large notices outside surgeries itemising a 'basic list of prices' covering all services available.

The IDA has explained that the relevant legislation was designed for the sale of goods and does not translate easily to the provision of most services. In particular, the requirement to display a fee 'as a single amount' is simply not possible for many dental care treatments due to the degree of complexity, surgical skill required and variance in time required. The Association's position is that, in order to achieve the goal of increasing awareness of patients to dental surgeon's professional fees, the display of fees for the initial examination, history, diagnosis, consultation and treatment plan, together with the supply of written fee estimates prior to the commencement of treatment, will meet both the Department's requirements and the patients needs.

It is estimated that a further two meetings are required to reach finalisation on this issue.

500% increase in applications to sit Dental Council examination

Under the provisions of Section 27 of the Dentist's Act, the Dental Council is required to make rules for the admissions to registration in the Register of Dentists for dentists who have qualified outside of Ireland or other European Economic Area member states.

The Council decided that dentists from third countries who have completed a five-year undergraduate dental course should be required to sit a special examination, and, if successful, therein gain eligibility for registration.

This year, the Council approved 43 applicants for the examination, which will be held in two parts in April and June. This represents a 500 per cent increase over the number of applications in 2003.

These applicants come from 15 different countries including India, Pakistan, Egypt, Iran, USA, Belarus, Ukraine, Nigeria and Sudan.

IDA to propose BUPA criteria

BUPA has agreed that it needs to update and review the criteria it uses to recognise dental surgeons for the purpose of providing treatment under its insurance scheme.

Under existing BUPA Ireland rules, only a consultant who 'holds a current full registration with the Medical Council' is allowed to claim for dental treatment given under the BUPA scheme.

The IDA has agreed to prepare a draft proposal identifying appropriate criteria for providers of dental health care in either a hospital, outpatient or surgery environment.

Irish lobbying success at EU

A notable success has been achieved by those lobbying the EU Parliament and Commission to amend the Draft Directive on Mutual Recognition of Professional Qualifications. This Directive, when passed, will apply to all health (and other) professions across Europe.

The original draft allowed for any practitioner from any EU country to work for 16 weeks in another EU country without being registered. However, the European Parliament voted this month to accept amendments designed to delete the 16 weeks' provision. Consequently, if the Directive is adopted in its amended form, all dental surgeons wishing to practice in Ireland will need to be registered with the Dental Council beforehand.

Also, professionals providing temporary services in another EU state should be subject to the host country's rules.

The competent authority in each country will be obliged to share information about the fitness to practice of professionals moving to another member country.

The amendment relating to language fluency was also adopted. It established that applicants should be fluent in the language of the country in which they intend to practice and it allows each member state to check the language fluency before granting registration to practice.

The EU Dental Liaison Committee (and, in particular, the Irish delegation) played a central role in seeking these amendments. Also, with the Dental Council to the forefront, all four health professions' regulatory bodies in Ireland lobbied MEPs, government ministers and other regulatory bodies across Europe.

The amended Directive will now go to the European Council of Ministers.

While these improvements are to be welcomed, members are reminded of the potential impact to manpower levels of the introduction of 10 new countries to full membership of the EU.

Study reveals majority of Irish public unaware of oesophageal cancer

A new study commissioned by the Oesophageal Cancer Fund (OCF) in aid of Lollipop Day has revealed that as many as 73 per cent of Irish people have not heard of oesophageal cancer despite the fact that more Irish people die each year from cancer of the oesophagus and stomach (690) compared to that of breast cancer (630).

While most people associate a breast lump with breast cancer or a mole with melanoma, few appreciate that difficulty swallowing is a key symptom of oesophageal cancer. In fact, only 17 per cent of the general public associates food 'sticking' and difficulty swallowing with cancer.

According to Professor Thomas Walsh, Consultant Surgeon, James Connolly Memorial Hospital, Blanchardstown, the incidence of oesophageal cancer in Ireland is among the highest in Europe, matched only by that in Scotland. Unfortunately, it is advanced in the majority of people at the time of diagnosis and less than 10 per cent survive five years.

The chief symptoms of the disease are dysphagia (difficulty swallowing with the food sticking behind the breastbone), unexplained weight loss, regurgitation and hiccups. These symptoms are especially significant if they occur against a background of chronic heartburn.

"We need to increase awareness of the significance of difficulty swallowing associated with unexplained weight loss. We need to create an association in the public mind between chronic heartburn and the risk of cancer," said Professor Walsh.

Irish Dental Nurses Association AGM

LEFT: Mary O'Donnell, IDNA President; Michael Galvin, IDA President; Liz Rowen, Marketing Manager, Oral Care, GlaxoSmithKline; and Dr Edward Cotter, Outgoing President of the Metro Branch IDA.

BELOW LEFT: Ciara Murphy, IDA Assistant Secretary General receives XXXX

BELOW CENTRE: Elaine Banfield XXXXXXX, IDNA Secretary; and Donal Atkins, IDA Secretary General.

BELOW RIGHT: Mary O'Donnell, IDNA President; Mairead McNamara, GlaxoSmithKline; Michael Galvin IDA President; XXXXXX

The Irish Dental Nurses Association held its Annual General Meeting in Dublin recently. The meeting, which was sponsored by GlaxoSmithKline Consumer Healthcare, was attended by some 100 delegates and also marked both the launch of the new IDNA website and the thirtieth anniversary of the Association.

Irish Dental Nurses Association launches website

The Irish Dental Nurses Association website, www.idna-ireland.com was launched by Ciara Murphy, Assistant Secretary General of the Irish Dental Association, at the Annual General Meeting of the Association.

In launching the website, Ciara spoke of how it is in the interest of all dental nurses to be part of an active and vibrant association. She noted that the IDA website had proved to be a useful tool in addressing frequently asked questions from both patients and members, and that it had greatly improved communications with the grass roots.

Ciara commended the IDNA on the development of an employment section on their website and advised that the classifieds section of the IDA website is frequently accessed by members.

In congratulating the IDNA on its 30 year anniversary, she wished the Committee well in the ongoing development of their website.

Secretary General elected Honorary Life Member

Mr Donal Atkins, Secretary General and Honorary Life Member of the Irish Dental Association.

At the 2003 AGM, incoming President, Dr Michael Galvin, proposed a motion, which was subsequently passed, to elect Mr Donal Atkins, Secretary General, as Honorary Life Member of the Irish Dental Association.

Dr Galvin acknowledged Mr Atkins' input over the past 25 years and noted that he was held in very high regard by members and amongst other professional organisations. The Association's President, Dr Pat Cleary, expressed his pleasure in seconding the motion.

Noting that the honour was well deserved, he said that Mr Atkins had played an important role in the many achievements of the Association during his tenure. Donal Atkins is only the ninth person since the foundation of the Association in 1992 to be so honoured.

WHO releases new report on global problem of oral diseases

Oral diseases such as dental caries (tooth decay), periodontitis (gum disease) and oral and pharyngeal cancers are a growing global health problem, especially in developing countries, the World Health Organisation (WHO) has said.

The major priorities and components of WHO's Global Oral Health Programme are set out in a report recently published by the organisation. In addition to addressing modifiable risks such as oral hygiene practices, sugar consumption, lack of calcium and micronutrients, and tobacco use, key elements include addressing the major sociocultural determinants. These include: poor living conditions, low education level, as well as lack of traditions supporting oral health. Countries should ensure appropriate use of fluorides for prevention of dental caries, while unsafe water and poor hygiene are environmental risk factors for oral as well as general health.

Oral health systems need to be oriented to primary health care and prevention. WHO's Global School Health Initiative, which seeks to mobilise health promotion and education levels at local, national, regional and global levels, has recently been strengthened by an oral health technical document. Increasing emphasis has also been placed on targeting the elderly; by 2050, there will be two billion people over the age of 60, 80 per cent of them living in the developing world.

The Oral Health Programme will also make an important contribution to the early diagnosis, prevention and treatment of HIV/AIDS, which often shows up first in oral fungal, bacterial or viral infections and lesions.

Dental Council vindicated

The High Court recently issued its reserved judgement in the case taken against the Dental Council and the Minister for Health by Martin Kenny, trading as Dentine Express, who claimed, among other things, that the Dental Council had failed to vindicate his constitutional rights to work and earn a livelihood as a denturist.

Mr Kenny also sought an order requiring the Dental Council to bring in a scheme for the practice of denturism pursuant to the Dentists Act, 1985, and unsuccessfully sought a declaration that he was entitled to exploit his profession or craft as a denturist by making, fitting and selling artificial dentures directly to the public.

In denying Mr Kenny's various claims, Mr Justice Gilligan said he was satisfied on the evidence adduced before him that the one-year RTC course completed by Mr Kenny, who had previously trained as a dental craftsman, did not amount to adequate training and would not form the basis for safe or effective treatment of patients.

While certain schemes had been proposed by the Dental Council for the recognition of denturists (under the Dentists Act, 1985), Mr Justice Gilligan noted that the Dental Council did not act unreasonably or unfairly in not proposing a scheme with a grandfather clause for those dental technicians currently practising as denturists.

In considering Mr Kenny's constitutional law arguments, Mr Justice Gilligan took the view "that it is fair to conclude on the evidence that there is a real basis for the necessity that persons who are going to fit dentures into people's mouths have adequate qualifications, training and experience. At present, the only persons in this jurisdiction who are deemed to have the necessary requirements to fit dentures are dentists". According to Mr Justice Gilligan, Mr Kenny "knew when he started to hold himself out as a denturist that he was acting in breach of the law... in fact, he is seeking to work in a area where quite patently on the evidence he is neither trained nor qualified to do so, and on the evidence it is not safe for him to do so".

Mr Justice Gilligan also rejected Mr Kenny's claims in respect of the Competitions Acts 1991 and 2002 and the treaty of Rome.

Costs were awarded against Mr Kenny.

Appointment

Prof. Leo F A Stassen FRCS, FDS, MA, has been appointed as Chair of Oral and Maxillofacial Surgery in the University of Dublin, Dublin Dental School & Hospital and St. James's Hospital.

Prof. Stassen qualified from Trinity College, Dublin, with B. Dent. Sc (Hons) in 1977 and an MB, BCh, BAO, MA in 1980.

He then trained in the UK and India in general surgery, oral surgery and oral and maxillofacial surgery.

Speaking of his appointment, Prof. Stassen said: "I am delighted to return to Ireland after 23 years, to the Chair, the job I had wanted on leaving Ireland in 1980 to seek further oral and maxillofacial training. We are even more delighted to have been able to buy a house in Dublin."

IDA urges Minister to confirm commitment to VT scheme

Following the 2003 AGM, the IDA has contacted the Minister for Health and Children to insist that the number of places being made available each year to Vocational Dental Trainees is known by the end of March of the year in question; that the finances required for such training also be guaranteed at that time; and that the numbers should gradually increase until at least 30 places are available each year.

The scheme for Vocational Training in Dentistry was established in 1999 to provide a transitional year for newly-qualified dental graduates to help prepare them to assume responsibility for the running of a general dental practice or a public dental service clinic, and to acquire greater efficiency in the skills and competencies required to deliver comprehensive primary dental care. It was envisaged at that time that, after a pilot scheme, it would be extended nationally. Currently there are 16 places allocated to the scheme and it is expected that a similar number will be allocated for 2004/05, commencing August 1, 2004. The VT scheme has also secured recognition/accreditation for six months of the 12-month training requirement for undertaking the Member of the Faculty of Dental Surgery examination, which is essential for entry into specialist training.

Minister for Health and Children, Micheál Martin, has been asked to ensure that that the number of places being made available to Vocational Dental Trainees is known by the end of March each year.

The IDA has been represented from the beginning on the scheme's National Steering Group and is entirely supportive of its continued expansion nationally.

In this regard, it was noted at the AGM that it was essential that health boards (or future bodies responsible) are made aware in good time that sufficient funding and other resources are in place to ensure efficient and timely planning for the scheme in 2004/05. New entrants to the scheme can then also be informed in good time of their confirmed participation and all unnecessary last-minute complications in this regard can thus be avoided.

The IDA has sought assurances from Minister Martin that all aspects of planning for the scheme for 2004/05, and thereafter, will be in place in good time.

AIB approved service provider

Following lengthy negotiations with all the main banks, the Council of the Irish Dental Association has approved AIB Bank as the preferred provider of merchant service facilities to its members.

The terms of the deal are as follows:

Joining fee	Waived
Credit card rate for card present	1.2 per cent
Laser transactions	0.15 cent per transaction
Terminal rental	€15 (plus VAT) per month

In order to avail of the above offer, please contact the Business Development Unit in AIB Card Services at 01-6413296.

Enhanced parental leave deal

Health sector unions and the Health Service Employers Agency have concluded a deal to improve parental leave conditions.

The agreement means that parental leave is now available to eligible employees within the Health Service for children up to eight years of age (previously the maximum age was five years). In the case of children with disabilities, the age limit has been raised to 16 years.

Parents of children aged up to eight years are now entitled to 14 weeks' consecutive unpaid parental leave. There are ongoing negotiations in relation to increasing the leave from 14 to 18 weeks.

Meeting with Litigation Committee of the Law Society

Arising from recent discussions at Council, representatives of the Irish Dental Association met with members of the Litigation Committee of the Law Society to discuss matters of mutual interest. Some of the issues discussed included:

- Personal Injuries
- Fees
  - Report fees
  - Stand-by fees
  - Attendance fees
- Treatment of patients awaiting settlement of claims
- Panel of dentists available for expert opinions

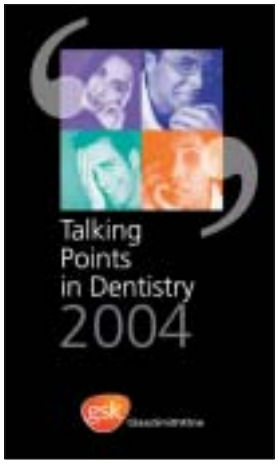
The Law Society advised the Association that it has published guidelines to assist solicitors in obtaining expert reports and evidence from the medical profession, entitled "Medico/Legal Recommendations". Any dentist involved in writing reports or giving evidence should be familiar with these guidelines.

The issue of fees for reports was also discussed. Up until 2001, a scale existed which had been agreed between the IMO, the IHCA, the Law Society of Ireland and the insurance industry. No such agreed scale now exists and fees for reports are a matter for negotiation between the parties. However, practitioners must take cognisance of their ethical duty to provide such a report at a reasonable cost. It is also reasonable to seek payment for a dental report in advance.

Court attendance fees and stand-by fees are also a matter for negotiation. In general, for a court within five miles of the dentist's surgery, an appropriate stand-by fee would be 25 per cent of the day's usual court attendance fee; while for a court more than five miles from the surgery, 50 per cent of the day's usual court attendance fee (exclusive in both cases of reasonable travelling expenses) would be appropriate.

It is important for practitioners to understand that fees charged for reports, etc., are ultimately the responsibility of the plaintiff.

The Law Society expressed concern in relation to the difficulties experienced by solicitors in getting expert dental opinions particularly in dental negligence cases. It was agreed that the situation where foreign experts would routinely engage in such cases was regrettable. In this context, it was agreed that the IDA would consider this issue and revert to the Law Society in due course.



Talking Points in Dentistry seminar

GlaxoSmithKline Consumer Healthcare has announced two dates for the company's Talking Points in Dentistry seminar series. Now in its nineteenth year, Talking Point's second visit to Dublin is designed to challenge, educate and encourage communication in dentistry.

Speakers and their topics planned for the two-and-a-half hour session of postgraduate education are:

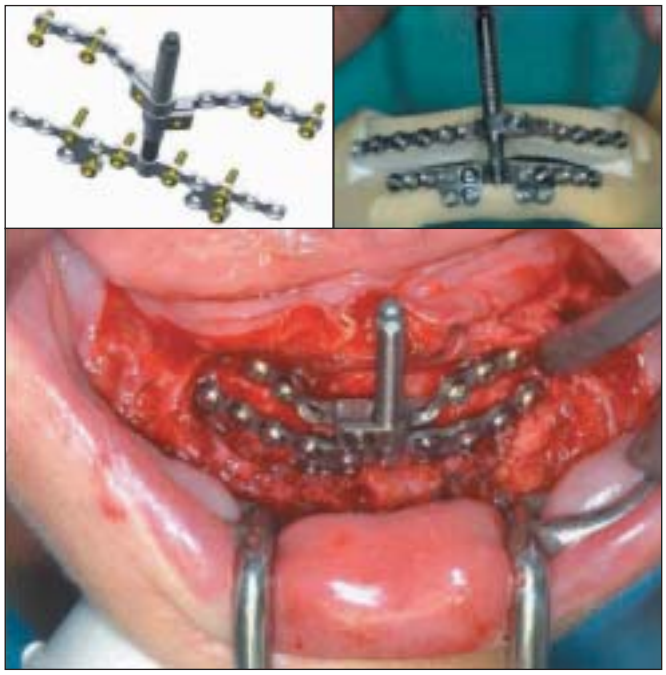
- Leading American restorative dentist, Ron Jackson:
  Direct Use Composite Resins in Contemporary Practice.

- Illinois Psychologist, Bruce Christopher:
  Why are Women so Strange and Men so Weird?
  (Utilising communication within the dental practice to enhance performance and motivation).

- Mabel Slater, Director of PCDs at the GKT Institute:
  Professionals Complementary to Dentistry – The Way Forward?

Talking Points in Dentistry will be held in Dublin's Red Cow Hotel on Monday, May 24, and in the Belfast Hilton on Tuesday, May 25. Admission is free for all members of the dental practice team. Early booking is essential. Invitations will be sent out to surgeries or alternatively, those wishing to attend or to get further information may contact Sarah Perry at Fulcrum Consulting (tel: 01-4520302).

MultiTractor osteogenic distractor



General Medical has launched its Q MultiTractor Osteogenic Distractor, which enables the surgeon to rebuild missing ridges.

The Q MultiTractor Osteogenic Distractor features several refinements including a modular design, which enables the surgeon to select the most appropriate configuration of components for each case rather than trying to adapt a universal design, and longer screws with enclosed threads. A simple modification to the treatment protocol means it is now easier to align all the components after the final sectioning of the graft has been completed.

General Medical has also launched Euroklee's Implant Of Collagen, which is fabricated from sterile bovine collagen and does not cause antigenic reactions.

Other new products launch include the Haley Implant Accessory Catalogue, which includes a range of products designed to make the provision of implant and periodontal treatment quicker and easier. This includes BioMend and BioMend Extend absorbable membranes from Centrepulse Dental.

Essential oils in oral health

A significant amount of periodontal disease is a result of people keeping their teeth longer, keynote speaker Prof Robin Seymour told a meeting held in Dublin on Essential oil mouthwashes - a key component in oral health management.

Seymour, from the University of Newcastle-upon-Tyne, stated that most patients' typical homecare routines revolve around the mechanical removal of plaque using primarily a toothbrush. Some patients may also use floss to clean between the teeth and try and get below the gumline. In many patients, as illustrated by the recent adult dental health surveys, mechanical plaque removal is poor and compliance with dental floss is a particular problem.

This problem can, in part, be addressed by supplementing mechanical plaque removal with the use of a mouthwash. "Adjunctive antiseptic mouthrinses may overcome barriers to controlling plaque build up. Bacteria are often left behind due to inadequate flossing technique where areas are difficult to reach, where patients lose motivation or there is loss of compliance," commented Prof Seymour.

He suggested using the models for change used in smoking cessation techniques to promote behavioural change and outlined the many benefits for a motivated patient.

Current studies comparing mouthwashes, indicate chlorhexidine, particularly at a higher concentration, gives a greater reduction in plaque, but Listerine achieves a greater reduction in gingivitis.

In a six-week study published in the Journal of Clinical Periodontology the lower concentration chlorhexidine and Listerine gave similar plaque reductions, but Listerine showed higher reductions in gingivitis. A higher concentration of chlorhexidine showed a greater plaque reduction and lower gingivitis reduction.

A six-month study reflects similar findings of higher plaque reduction with chlorhexidine and shows Listerine as slightly more effective for gingivitis.

The view expressed at the meeting was that there is no cure for periodontal disease, but more long-term research should be carried out to assess the role of mouthwashes as an adjunct to oral health maintenance.

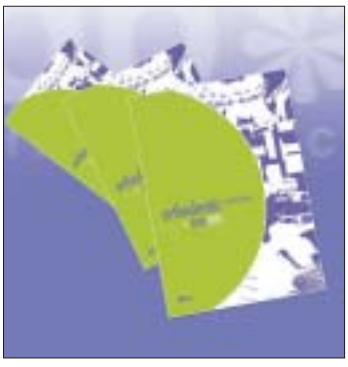
Discontinuation

GlaxoSmithKline Consumer Healthcare has announced the immediate discontinuation of the Sensodyne Gentle Ultra Toothbrush and the Sensodyne Elite Step Trim Toothbrush. The Sensodyne range of toothbrushes will henceforth include two variants: the new Sensodyne Complete Care Toothbrush and the Sensodyne Search Toothbrush Cello 3.5.

On-line guide to dental industry

The 2004 Guide to the Dental Industry on the Internet has been launched to help those in the industry to get maximum benefit from new web-based tools and strategies.

It can be found at www. researchandmarkets.com.

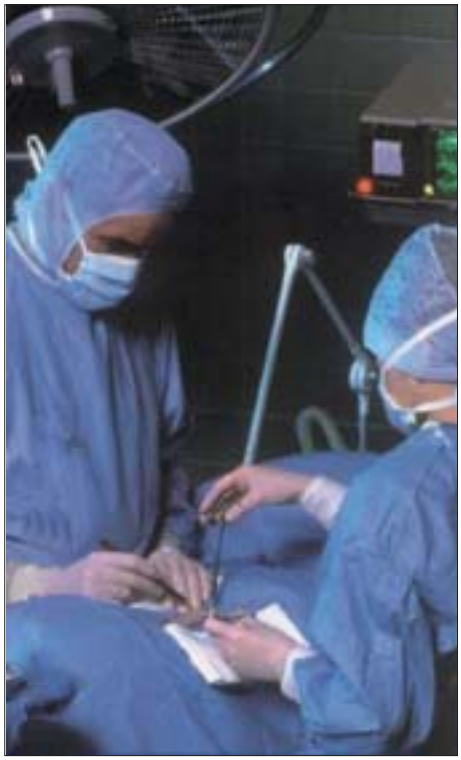


Essential catalogue

Twice the size: the new larger catalogue from DB Orthodontics.

DB Orthodontics has launched its new DB Essentials Catalogue. The full colour catalogue, which is twice as big as the last edition, contains a complete DB Orthodontics product range.

Surgical procedure packs



General Medical has launched a choice of surgical procedure packs, including the new basic procedure pack.

The new pack contains everything the surgeon will require during a surgical procedure.

McCormack Horner

Appointed: Shane O'Hanlon, McCormack Horner's new Equipment Sales Consultant for the southwest region.

McCormack Horner has appointed Shane O'Hanlon as Equipment Sales Consultant for the southwest region, based near Limerick. Shane comes from an engineering background and brings three years' dental sales experience to his new position.

McCormack Horner, as the name suggests is a merger between two long established Irish dental companies, McCormack Dental and E Horner & Sons Ltd.

McCormack Horner says that the result of the merger means it is in a position to offer its customers a complete service, from surgery design, surgery equipment and installation, right through to supplying a full range of dental sundries.

McCormack Horner is equipment distributor in Ireland for A-dec, KaVo, Trophy, Intrumentarium, Durr Dental and NSK. It supports the installation and after sales service of equipment through a team of strategically located service engineers. It also offers the only KaVo accredited handpiece repair service in the country.

Essay competition

Listerine has announced details of its annual undergraduate dental essay competition. The competition invites dental students to develop a comprehensive literature review on a set topic. This year's competition topic is Essential Oils in Oral Health Management. The winning student will receive a €1,500 travel bursary and two runners up will each receive a €500 travel bursary.

The competition is open to all undergraduate dental students and is part of Listerine's continuing commitment to oral health education.

Entry forms are available from Listerine™ Teeth and Gum Defence Competition, Edelman, 5th Floor Huguenot House, 35-38 St Stephen's Green, Dublin 2.

Biocidal solution

Steri-X – a biocidal solution said to kill all known pathogenic bacteria — has been launched.

It is available in a 500ml-trigger spray or in a 5-litre container. Once the liquid has been sprayed and wiped over the designated surface, it remains effective for at least seven days, thanks to its patented residual barrier technology (RBT). Normal surface cleaning and handling will not affect its efficacy, say the producers.

Sugar-free, decay-free

Chewing sugarfree gum has been proven to help in the fight against tooth decay by up to 40 per cent says Wrigleys, who adds that such findings have led to an increase in the number of Irish dentists recommending chewing sugarfree gum.

To promote the benefits of chewing sugarfree gum and all aspects of oral healthcare, The Wrigley Company established the Wrigley Oral Healthcare in Action programme in 2001, to provide dental professionals with support materials.

The IDA welcomes the Wrigley Oral Healthcare in Action initiative and supports the statement: "chewing sugarfree gum helps in the fight against tooth decay".

Current Irish Wrigley OHA members have given positive feedback on the programme, describing it as "extremely informative and helpful, filled with lots of good advice" and "a very useful resource tool, proving particularly helpful when planning communication".

Dry mouth poster campaign

Wrigley Oral Healthcare in Action has introduced a dry mouth poster – The Facts About A Dry Mouth – for dental professionals to display in waiting rooms.

Millions of people suffer from dry mouth (xerostomia), which is caused by thousands of prescription drugs, ranging from anti-histamines to anti-depressants.

According to Wrigley, chewing sugarfree gum helps provide relief from the unpleasant and often painful symptoms of dry mouth by stimulating the natural production of saliva. The stimulated saliva also offers protection against the increased risk of dental decay.

The poster, which has already been successfully used in the UK, has been adapted for Ireland with backing from the Irish Dental Association.

Pathways to perfection

The IDA Scientific Conference 2004

The Irish Dental Association returns to Limerick — the Treaty City — for this year's Annual Scientific Conference, at which the biggest National Trade Show will also take place.

The Conference will be held at the new, business class South Court Hotel from Wednesday April 28 to Saturday May 1, and will include a panel of outstanding national and international speakers.

A comprehensive range of topics, including anterior aesthetic restoration, implant surgery and dentistry for the geriatric patient, will be covered.

Delegates should also be aware that the scientific sessions have been approved for Continuing Dental Education credit and forms will be available for obtaining credits at the conference.

At the event, there will also be a range of additional programmes, which will run alongside the main seminars, aimed specifically at technicians, nurses and hygienists. In addition, there is a 'Lunches for Learning' programme to provide the attendees with an opportunity to interact with one of the speakers in an informal setting.

Registration fees for the Conference range from €300 for private dentists to €20 for retired dentists and €95 for dental nurses. Further details on booking places are available from the IDA offices.

The main programme

Thursday, April 29		Friday, April 30		Saturday, May 1	
09:00	Opening by *Michael Galvin*	09:00	Cautionary tales *Dr Gerry Kearns*	10:00	Staffing matters by *Ciara Murphy*
09:15	Endo updates by *Dr John Regan*	10:00	Am I overexposed? *Dr Donal McDonnell*	10:30	Water contamination by *Mary O'Donnell*
10:00	Bleaching and bonding bonanza by *Dr Martin Kelleher*	11:30	Bridge vs implants *Dr Konrad Meyenberg*	11:00	Five tips to manage your practice by *Dr Garry Heavey*
11:15	Recipes for predictable anterior aesthetics by *Gerard Cliche*	12:30	Questions	12:00	Practice valuation entrance/exit strategy by *Dr Niall Jennings*
12:30	Questions	12:45	Lunches for learning	12:30	Dental Insurance by *Cameron Jayson*
12:45	Lunches for learning	2:00	Bridge vs implants *Dr Konrad Meyenberg*	1:00	Conclusion
2:00	Ortho only for specialists: *Dr J Lawlor vs Dr T McNamara*	2:45	Questions		
or	White is right: *Dr M. Kelleher vs Dr G. Cleary*	3:00	Fitting dentistry to the dentist *Annette Shanahan*		
3:30	Wisdom out *Dr K Halpenny vs Dr L Stassen*	3:30	How to age gracefully *Prof Declan Lyons*		
or	Save the root: *Dr P Cleary vs Dr T O'Brien*	4:15	GP meeting		
4:30	Table demonstrations				
6:00	Costello medal and Moloney Award presentation				

The social programme

A full social programme has also been organised for delegates and includes:

- A newcomers' breakfast at which first time delegates get to meet the President and colleague members of the IDA.
- A wine tasting courtesy of Karwig Wines and the Australian Wine Board.
- A Guinness and oysters reception to start the socialising at the official welcome to the Trade Show.
- A medieval banquet at Bunratty Castle where delegates can join the speakers for a fun filled evening of wine and dining in amazing surroundings.
- A visit to the Hunt Museum followed by lunch at the Georgian House in Pery Square.
- The President's Gala Dinner with music by the Paddy Cole Band.

Finally, there will be two golf competitions. The first of these is at Limerick Golf Course on Friday, April 30, from 10:00am and is open to non-members (male and female) who are attending the conference. The second competition, the President's Prize, will take place at Adare Golf Club the following day.

Pre-conference courses

The pre-conference courses cost €200 and run on Wednesday 28 April


John Regan


Patrick Cleary


Gerard Chiche


Spencer Woolfe


William Davis

The first of the pre-conference courses, Endodontics by Dr John Regan and Dr Patrick Cleary, is an all-day hands-on course, the objectives of which are to give participants:
the opportunity to develop a systematic approach to treatment;
to improve their consistency in endodontic treatment; and,
to organise and simplify their endodontic tray set-up.

The second pre-conference course, Recipes for Predictable Anterior Aesthetics, will be presented by Dr Gerard Chiche and is sponsored by Nobel Biocare. This presentation will discuss the key areas for efficient aesthetic diagnosis and smile design. The presentation will also cover prosthetic and adhesive techniques in terms of armamentarium and products as well as practical techniques with proven efficiency for tooth preparations, bonding sequence and cementation for all-ceramic crowns and porcelain veneers.

The third course, Placing Your Own Implants, Surgical and Prosthodontic Aspects, is sponsored by 3i and will be presented by Dr Spencer Woolfe and Dr William Davis. As the popularity and demand for this treatment has evolved, many general practitioners have started placing their own implants. This course will provide those who wish to consider this the opportunity to experience the surgical aspect in anatomically designed models. In addition, an overview will be presented providing invaluable background knowledge in case selection, diagnosis and planning.

The Conference Council

Dr Billy Davis
Dr Charles O'Malley
Dr Michael Galvin
Mr Donal Atkins
Dr Barney Murphy
Ms Joan Bracken
Dr Sean Malone
Dr Declan Corcoran
Dr PJ Byrne
Dr Pat Cleary
Dr Paddy Crotty
Dr John Walsh

The National Trade Show

The National Trade Show — with more than 40 stands — is the largest ever staged at the Annual Scientific Conference. Alongside the dental industry exhibitors, there will also be a number of non-dental exhibitors that the organisers say will both interest and surprise delegates.

All the exhibitors who support the Conference contribute greatly to its success; and the Irish Dental Association greatly appreciates their presence.

Promed, one of the companies who will be at the Trade Show, is one of Ireland's premier distributors of medical and dental consumables and equipment. In addition to displaying a range of branded products from leading worldwide manufacturers, the company will be offering delegates a programme of educational seminars on topical medical and dental issues.

Also at the show will be 3M ESPE, who will have a variety of products representing real innovations in dental materials science, including RelyX Unicem cement, a self-adhesive resin cement; Filtek Supreme universal restorative; and Adper Prompt L-Pop self-etch adhesive. There will also be a 'Welcome Café' where delegates can relax with a drink and conversation

EXHIBITORS

3M Ireland
Bicon Europe Ltd
Bien-Air UK Ltd
Casa Schmidt Ireland
Celtic Marketing
Claudius Ash
Coltene Whaledent
Dentsply Ltd
D.P. Medical Systems Ltd
Eco-Logic Solutions
Helsinn Birex
Henry Schein Technologies
Irish Dental Equipment
J & S Davis
Karma Dental Ltd
Kerr UK Ltd
Limerick Dental Co Ltd
Listerine Pfizer Consumer Health Care
McCormack Dental Equipment
McDowell & Service
Dental Lab
Merck Sharp and Dohme
Optident
Oral-B-Gillette
Prodent Ltd
QED Ltd
Septodont
Straumann Ltd.
Transafe Ltd
Trophy
W & H
Wyeth Consumer Healthcare

Maxillary midline diastema – aetiology and orthodontic treatment

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Introduction

Maxillary midline diastemas are an aesthetic concern for many patients and their parents. The diastema seen in many children as part of normal development in the mixed dentition, disappears naturally in most cases as dental development proceeds.

It may however persist either because of its width or other associated factors. If it is to be closed satisfactorily by orthodontics an understanding of the aetiology is essential.

Aetiology

Physiological

Most maxillary midline diastemas in the mixed dentition appear as a consequence of the growth in width of the jaws in preparation for the eruption of the larger permanent teeth. The maxillary unerupted permanent canines lie superior and distal to the apices of the lateral incisor roots, and as they erupt they tend to force the lateral and central incisors towards the midline closing the space. In most cases a diastema of less than 2mm will close spontaneously unless the patient has generalised spacing of the dentition.[1] The incidence of diastemas varies with the age group and the race studied.

Richardson and colleagues found the incidence at age 14 to be 12 per cent in white girls, 17 per cent in white boys, 19 per cent in black girls and 26 per cent in black boys.[2] Popovich and colleagues found that 83 per cent of patients with a diastema at nine years in the mixed dentition had no diastema at 16 years.[3]

Tooth size or shape discrepancy

The most commonly presenting of these are small lateral incisors. The Bolton Analysis may be used to compare tooth size discrepancies. This group are the most amenable to restorative and prosthetic solutions.[4,5]

The associated shape discrepancies most frequently seen are central incisors that are excessively triangular or have mesial surfaces that are either concave or convex.

Tooth/tissue ratio discrepancy

Size discrepancy between teeth and jaws can result in generalised spacing in patients with otherwise good occlusions.

Mesio-distal angulation of incisors

Root convergence

Distally inclined incisors can produce a diastema with the tooth space positioned towards the incisal edges of the incisors (Fig. 1).

Aetiology

Common causes of a midline diastema	Less common causes
Physiological (normal stage of development)	Hypotonic lips
Tooth size or shape discrepancy	Habits (thumb/digit sucking)
Tooth/tissue ratio discrepancy	
Mesio-distal angulation of incisors	
Missing maxillary lateral incisors	
Ectopic maxillary canines	
Proclination of anterior teeth	
Abnormal labial fraenum	
Pathology	

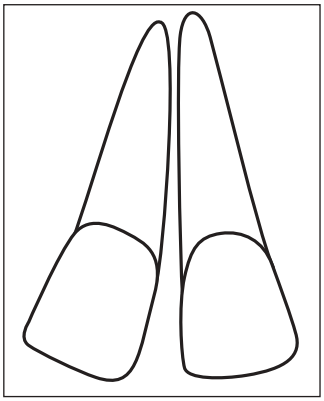


FIGURE 1: Root convergence.

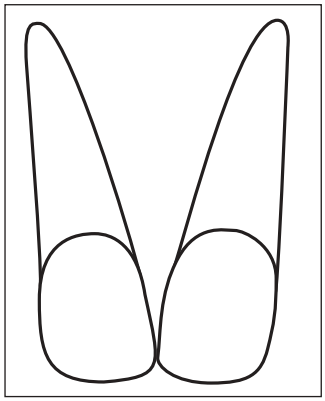


FIGURE 2: Root divergence.

Root divergence

Mesially inclined incisors can result in a coronally positioned contact point and a diastema, which is more gingivally placed (Fig 2). This is often referred to as the black triangle and is associated with reduced papilla infill, so that in effect it is a diastema that is closed off at its incisal aspect by contact of adjacent teeth. Burke and colleagues in a study found that 40 per cent of crowded maxillary incisors can be expected to produce a black triangular space at the midline after fixed appliance treatment unless something is done to close this space before appliances are removed and the case considered finished.[6] There is a high incidence of concave mesial surfaces in crowded maxillary incisors, which becomes more apparent as the teeth are decrowded orthodontically.

Tarnow and colleagues in a study on the effect of the distance from the contact point to the crest of bone on the presence or absence of an interproximal dental papilla found that:[7]

- when the distance was 5mm or less the papilla was usually present;
- when the distance was 6mm the papilla was present 56 per cent of the time; and,
- when the distance was 7mm or more the papilla was present 27 per cent of the time or less.

Missing maxillary lateral incisors

This can allow maxillary central incisors to drift distally. There are no physiological pressures placed on these teeth to close together as the canines erupt.

Ectopic maxillary canines

The absence of the canines from their normal position can facilitate distal drift and tilt of the incisors with space opening and there is the associated lack of the physiological pressures to upright the lateral and central roots that normally closes the diastema.

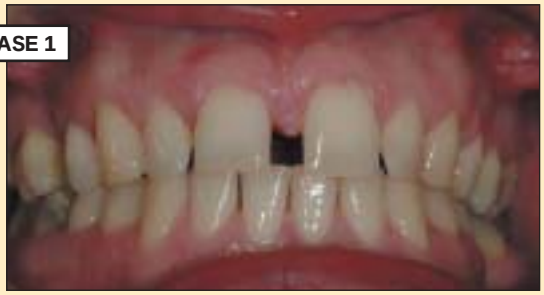
Proclination of anterior teeth

This results in greater arch circumference leading to anterior spacing.

Abnormal labial fraenum

An abnormal fraenum might be defined as one exhibiting excessive thickness and alveolar attachment between the maxillary central incisors and apparent continuity with a large incisive papilla. A large persistent fraenum has been traditionally associated with midline diastema but the relationship between the two may have been overstated in the past. Edwards found a strong correlation between an abnormal fraenum, together with vertical osseous cleft on x-ray and the presence of a midline diastema.[1,8] Popovich and colleagues, however, found no such relationship.[3] Bergstrom and colleagues in a longitudinal evaluation of a group of nine year olds with abnormal fraena revealed no difference in spontaneous closure whether or not a fraenectomy had been carried out.[9] There appears to be broad consensus, however, that when there is a v-shaped radiolucency ("notch") in the crestal bone, on x-ray combined with a large diastema (more than 2mm), and a thick fleshy fraenum, then a fraenectomy is indicated (Case 1; Figures 3,4,5).

CASE 1



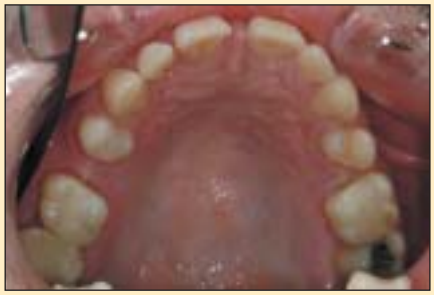


Figure 3 and 4: Wide diastema with frenum extending on to incisive papilla.

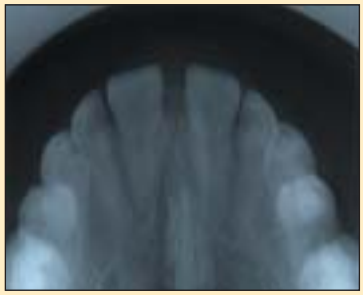


Figure 5: Upper occlusal radiograph with V-shaped radiolucent notch on crestal bone.

CASE 2

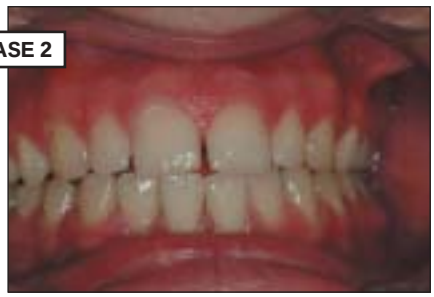


Figure 6: Young adult.

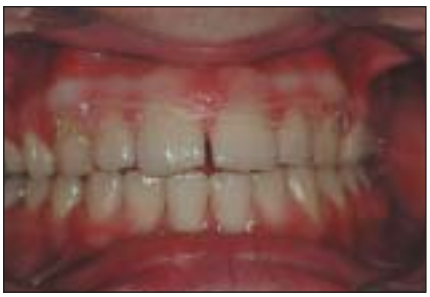


Figure7: Diastema closed with Essix retainer.

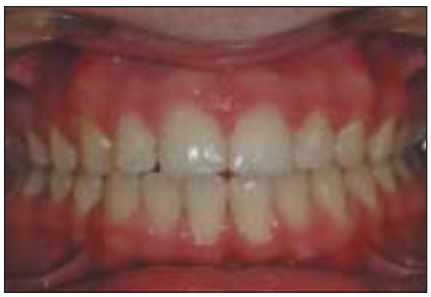


Figure 8: Diastema closed and modified with composite.

CASE 3

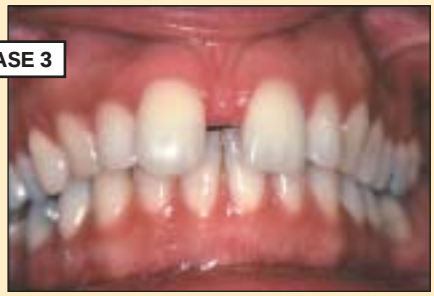


Figure 9: Wide diastema in adult patient.

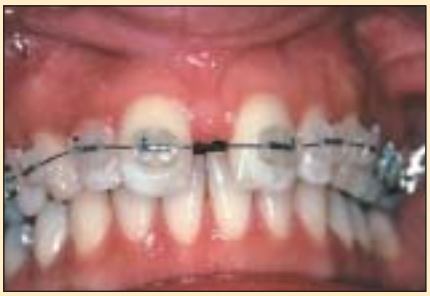


Figure 10: Fixed appliances fitted.

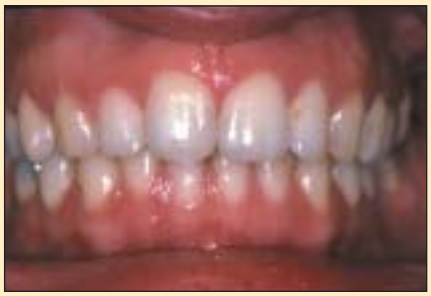


Figure 11: Diastema closed. Palatal retaining wire bonded on central and lateral incisors. Frenectomy postorthodontics.

Pathology

A midline cyst is a rare cause of a midline diastema in children. Adults, more commonly, present with spacing and diastema secondary to periodontal disease and bone loss.

Hypotonic lips

Because of the reduced lip pressure on the labial aspect of the teeth in these patients the labial segments may procline and space.

Habits

The most frequently implicated habits are thumb, digit or soother sucking. These have a tendency to procline the maxillary labial segment, which may lead to spacing and diastema in some patients.

Combinations

Not infrequently a number of the above factors combine in one patient to produce a diastema.

Development

A maxillary midline supernumary is a rare cause of midline diastema in children.

Treatment

Many patients seek closure of a diastema for aesthetic reasons. In the case of normal physiological development, diastemas of less than 2mm in nine-year-old children generally close spontaneously. If they do not do so, small diastemas (less than 2mm) can be closed with finger springs on a removable appliance or with a split Essix plate, as described by Sheridan[10] (Case 2; Figure 6,7,8). In adults with wider diastemas, fixed appliances are required for correction so that crown and root angulations are controlled (Case 3; Figure 9,10,11).

Tooth size or shape discrepancy

In treatment of patients with small maxillary laterals, restoration

CASE 4

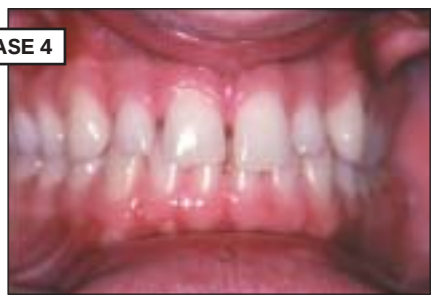


Figure 12: Diastema associated with small lateral incisors.

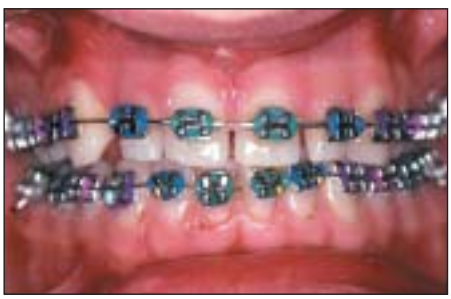


Figure 13: Fixed appliances fitted to close diastema and move upper lateral incisors mesially, leaving most of the space distal to 2/2 for restorative build up.

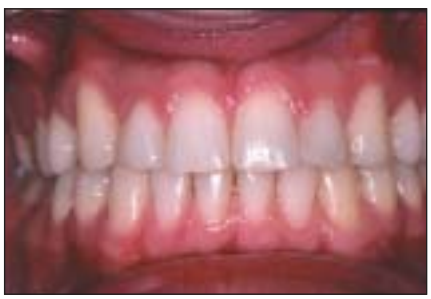


Figure 14: Completed treatment with restorative build up of lateral incisors.

CASE 5

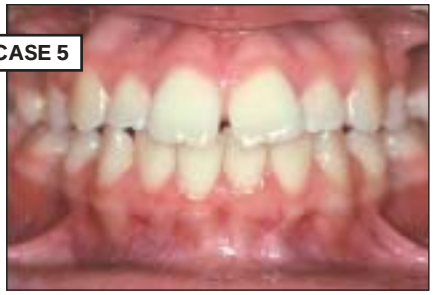


Figure 15: Upper incisor crowns distally inclined and roots convergent to produce diastema mostly towards incisal edges.

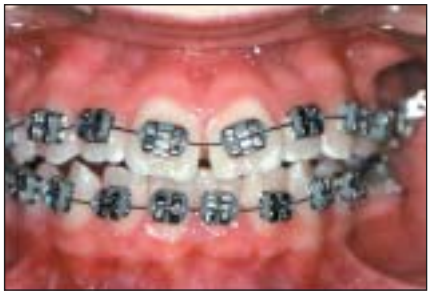


Figure 16: Fixed appliances fitted to correct inclinations.

Figure 17: Dentition aligned.

of these teeth is best aided by movement of the laterals mesially in the space so that most of the restorative build up takes place on their distal aspect to simulate the morphology of normal lateral incisors (Case 4; Figure 12,13,14). Similarly, in cases where build up of small central incisors is also needed, mesial crown and root movement will facilitate restorative build up on the distal aspect for better aesthetics. Tooth shape discrepancies require modification of crown morphology. This may involve disking of the mesial surfaces or restorative measures to modify the defect.

Tooth/tissue ratio discrepancy

In those patients who have generalised spacing, co-operation between the orthodontist and dentist is advised so that the teeth can be positioned for maximum restorative effect. This may mean, for example, the closing of some spaces and the opening of others so that good aesthetic crown contour can be established. Prolonged retention is a requirement in these patients.

Mesio-distal angulation of incisors

Root convergence

Correcting this is usually a matter of angulating the crowns and roots optimally to eliminate the diastema (Case 5; Figure 15,16,17).

Root divergence

Dramatic aesthetic and functional effects may be achieved by moving the crown contact point gingivally, controlling movement of crowns and roots to the optimal position. The central incisor roots are uprighted towards each other, shortening the vertical height of the gingival embrasure. The unsightly black triangle can be eliminated and papillary growth stimulated as in Case 6 (Figure 18,19,20,21). The contact point between the central incisors has orthodontically been moved closer to the crest of the bone between the teeth.

CASE 6

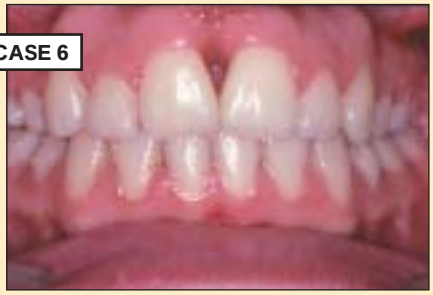


Figure 18: Excessive mesial crown inclination, divergent roots. Note loss of papilla with diastema towards the gingiva, the black triangle.

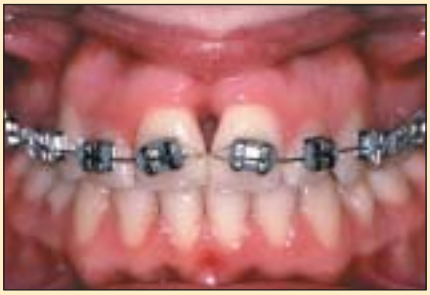


Figure 19: Fixed appliances to correct tooth inclinations.

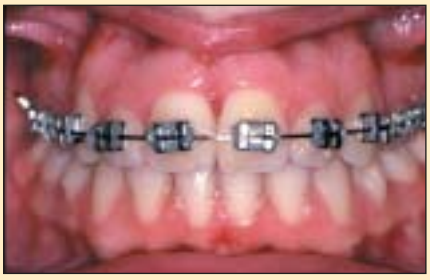


Figure 20: Alignment of incisors nearing completion. Note the improvement in midline papilla.

Figure 21: Two years out of retention, note the normal midline papillary contour.

CASE 7

Figure 22: Diastema associated with congenital absence of upper left lateral incisor. Upper left canine about to erupt.

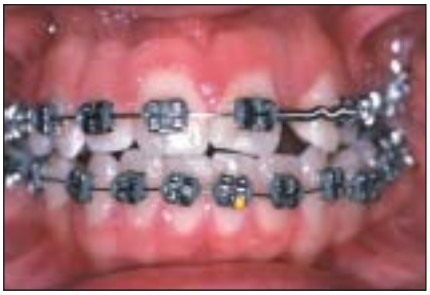


Figure 23: Fixed appliances to move upper left canine distally and upper left central mesially. Further movement of the upper labial segment to the right to correct upper centre line shift.

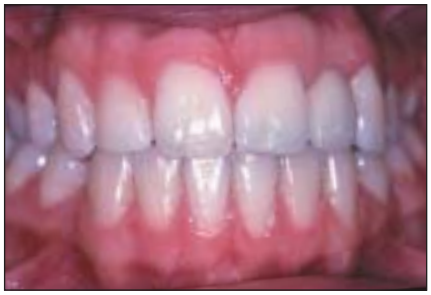


Figure 24: Completed treatment with bridge replacing maxillary left lateral incisor.

Missing maxillary lateral incisors

This young patient's diastema (Case 7; Figure 22, 23, 24) was associated with developmental absence of UL2. When the canine erupted orthodontic treatment was initiated to move UL1 mesially and UL3 distally. Post orthodontics a bridge was constructed to replace UL2.

Ectopic canines

Alignment of impacted canines when there is associated midline diastema helps space closure (Case 8; Figure 25, 26, 27).

Proclination of anterior teeth

Retraction of proclined maxillary incisors to normal angulation will eliminate spacing/diastemas if tooth sizes are normal (Case 9 Figure 28, 29, 30, 31).

CASE 8

Figure 25: Unerupted impacted upper canines leading to midline diastema.

Figure 27: Spacing eliminated and permanent canines in position.

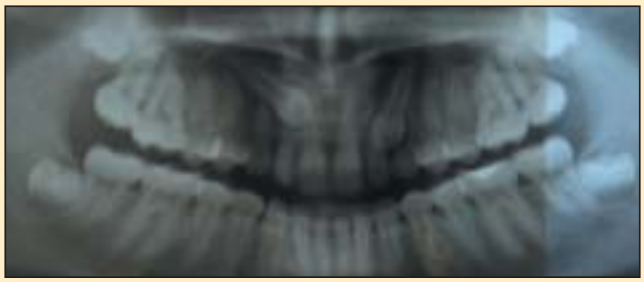


Figure 26: The deciduous canines were extracted; the impacted canines surgically exposed and orthodontically moved down into position.

CASE 9

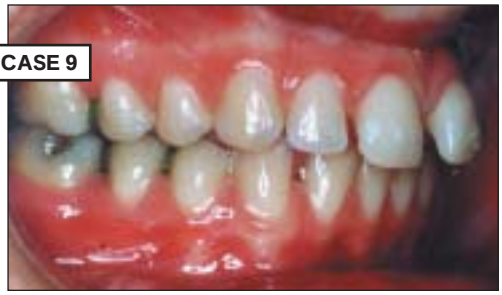


Figure 28: Proclined incisors.

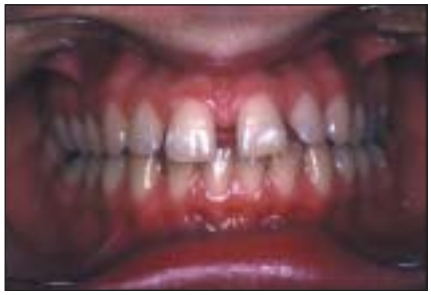


Figure 29: Wide diastema.

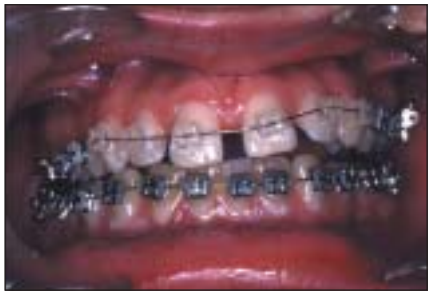


Figure 30: Fixed appliances retract labial segments.

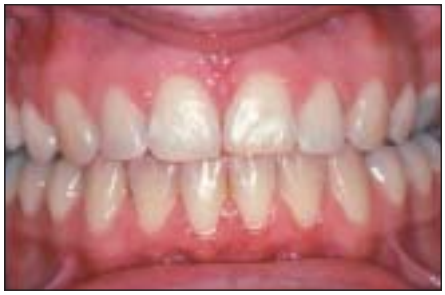


Figure 31: Incisors retracted, diastema closed. Retention, bonded palatal wire 21/12.

Abnormal labial fraenum

Ideally, a fraenectomy should be carried out at the end or near the end of orthodontic treatment. It is an error to surgically remove the fraenum and delay orthodontic treatment in the hope that the diastema may close. Early fraenectomy may cause scar tissue that might subsequently prevent space closure. Occasionally, however, the surgery may be required in the course of treatment if the fraenum tissues become swollen and inflamed as the teeth approximate.

Edwards, in a study of patients with abnormal fraena and wide diastemas pre-treatment, found a strong potential for relapse after orthodontic closure. His study included diastemas wider than 2mm and the mean diastema width of his sample was 3.2mm.[8]

CASE 10

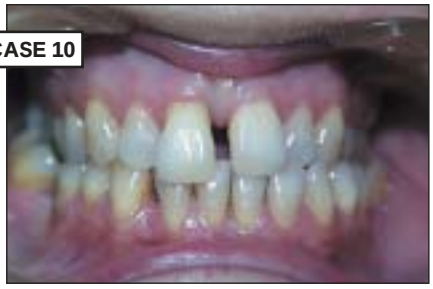


Figure 32: Overerupted upper right central incisor with wide diastema and underlying periodontal pathology (see text).

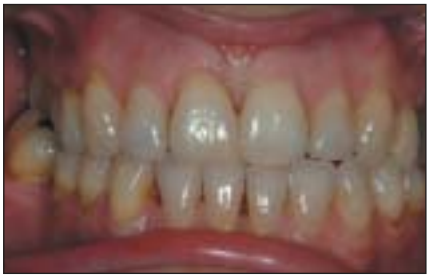


Figure 33: Post-orthodontics. This treatment was carried out after periodontal therapy (see text) bonded wire palatal 21/12.

CASE 11

Figure 34: Wide diastema in presence of large frenum, proclined labial segments, triangular shaped 1/1, missing 2/ and underlying periodontal pathology.

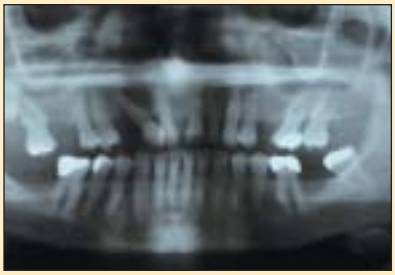


Figure 35: Note alveolar bone loss, missing teeth, especially 2/; there has been a mesial drift 3/.

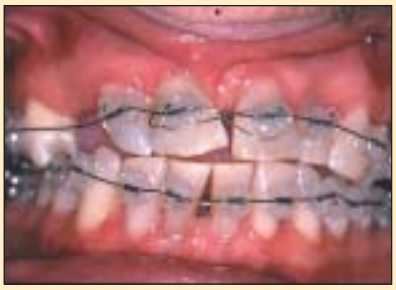


Figure 36: Following periodontal therapy. Fixed appliances were fitted after six months.

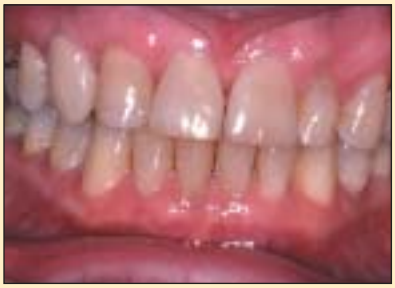


Figure 37: End of orthodontic treatment with partial upper denture restoring the original upper right canine position. The canine at 2/ position has been recontoured.

Sullivan and colleagues in a study of patients with smaller diastemas (>0.9mm with a mean of 1.4mm) found that the presence of abnormal fraenum combined with an intermaxillary osseous cleft to be of minor significance in long-term stability.[12] Proclination of maxillary incisors was the only post-retention change that showed in association with diastema relapse in their patients.

The key to successful fraenectomy is the removal of the interdental fibrous tissue. Because the elastic interdental fibre network does not cross the midline in these patients, the normal mechanism to keep teeth in contact is missing.

To avoid relapse in fraenectomy cases, the authors prefer to bond a palatal retaining wire immediately following appliance removal. Patients should be advised of this pre-treatment.

Pathology

An adult patient (Case 10 Figure 32, 33) with a large diastema and an supererupted maxillary right central incisor. There was a deep periodontal pocket with an infrabony defect on the mesial aspect of this tooth. Following periodontal flap surgery, debridement, and the placement of a bone graft, orthodontic tooth movement was carried out six months later. This involved intruding the maxillary right central incisor and closing the diastema.

Hypotonic lips

These facilitate proclination of the labial segments with resultant diastema. Retraction of maxillary and mandibular labial segments generally closes the space but prolonged retention on the labial aspect is essential.

Habits

These can procline the maxillary labial segment to produce spacing or diastema. If other factors are normal, cessation of the habit in the mixed dentition will generally result in spontaneous resolution.

Combined aetiology

The treatment of an adult patient who presented with a history of increased spacing and drifting of the anterior teeth (Case 11: Figures 34, 35, 36, 37). There were generalised increased periodontal pocket depths with associated bone loss as seen on the OPG radiograph. Other factors that may have led to the patients diastema included a large fraenum, proclined teeth, triangular shaped maxillary central incisors and a missing maxillary right lateral incisor. Initial periodontal therapy was carried out, and once the periodontal condition was stabilised, orthodontic tooth movement was commenced. This initially involved alignment and retroclination of the labial segments. As tooth movement proceeded the maxillary central incisors were reshaped mesially to facilitate approximation. The maxillary right canine apex was uprighted mesially and placed in the maxillary right lateral incisor position. The canine was then reshaped to resemble a lateral incisor (Figure 38). Post orthodontics a wire was bonded on the palatal surfaces of the maxillary anteriors and maxillary and mandibular Hawley retainers were worn at night. The space was provisionally restored with an acrylic partial denture and the patient referred for a midline fraenectomy and implant replacement for UR3.

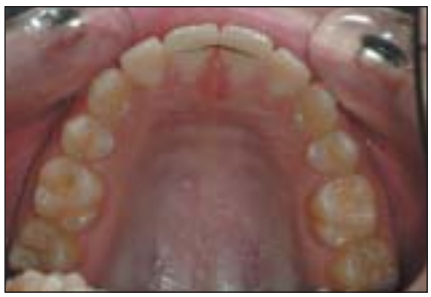


Figure 38: Bonded retainer 1/1.

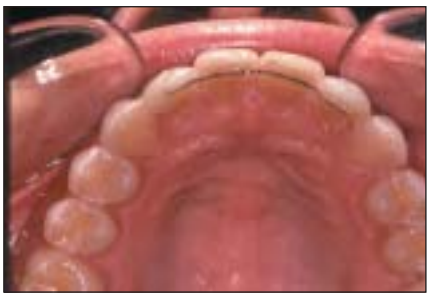


Figure 39: Bonded retainer 21/12.

Retention

A bonded palatal fixed retainer is advisable in the majority of cases to stabilise the result post treatment. In wider diastemas this retention should be permanent. As with all bonded retainers patients should be instructed in good oral hygiene, including the use of floss threaders. Figure 38 shows a bonded retainer UR1, UL1 and Figure 39 shows a bonded retainer from UR2, UR1, UL1, UL2. The authors generally provide patients who have bonded retainers with a removeable Hawley-type retainer to be worn at night for the first few years.

Mulligan in a recent report presents a novel method of reducing retention requirements in these cases.[13] He moves the apices of the incisors distally in finishing the treatment. In this way, he postulates, larger functional moments are produced when the incisor roots are divergent which help to keep the diastema closed. To test the stability he removed the archwires for a six-weeks period near the end of treatment. The disto-incisal edges of the tipped teeth are modified with the use of disks for enhanced aesthetics. This interesting approach holds promise.

Restorative treatment

It is important to mention that there are restorative solutions to these cases without orthodontic intervention. However, restorative measures are more likely to be appropriate in adults and are also subject to on-going maintenance issues. Care must be taken that the emergence profile of any restoration is not over-contoured creating hygiene problems. Care must also be taken with the crown width/length ratio. Maxillary midline spacing can also be reduced or temporarily closed with composite resin directly on the proximal surfaces of teeth adjacent to the space without bonding agent prior to orthodontics. It may then be removed as tooth movement proceeds. When combined orthodontic-restorative treatment is planned, collaboration between the orthodontist and the restoring dentist should begin at the diagnostic phase.

Conclusion

The orthodontic management of diastema closure is determined by the size of the diastema and the underlying causes. Following active treatment, retention by bonded lingual retainers is often needed in association with removable retainers. In the authors' experience, any relapse of a midline diastema post-treatment is of concern to patients.

Acknowledgments

The authors thank Dr Maurice Crean for reading the script and for his helpful suggestions. They also thank the following colleagues who were involved in the treatment of some of the patients described: Dr Tiernan O'Brien who performed the surgical exposure of the impacted canines in Case 8, and the periodontal treatment for Cases 10 and 11; and, Dr James McGovern who carried out the restorative treatment for Case 7.

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Bleaching - the facts and the myths

An in-depth interview by Aisling O'Mahony with bleaching expert, Dr Van Haywood.

Forward

If you offer bleaching, patients will appreciate the option. Regardless of how they appear, most people do not wish to be unattractive. With a good knowledge of how the smile should fit into the face, and how the teeth and gingiva should relate in the smile, the dentist can dramatically alter a patient's appearance. This could be as simple as bleaching, composite bonding, or tooth recontouring or more complicated involving gingivalplasty, surgical corrections and ceramic veneers or crowns.

How many times a week do you get asked: Can you make my teeth whiter? Is bleaching safe? Will it ruin my enamel? How long does it last for? As practicing dentists, we are often questioned about bleaching. More and more patients have increased aesthetic demands and are seeking the whiter than white Hollywood smile. Bleaching of teeth is often the most effective, easiest and least expensive way to provide patients with a whiter more confident smile.

But what is the most efficacious treatment? Is it expensive? Do we need lasers and special lights? Will patients experience post-op sensitivity or teeth become non vital? How long should patients bleach for? Should it be done in the surgery or at home? What kind of tray is best? Should bleaching products be available over the counter to patients? Prof Van Haywood, co-author of the first bleaching article in 1989, and a current leading authority on bleaching discusses his experiences.

Why should we consider bleaching as a treatment for our patients?

One of the most observed features of the face is an attractive smile. How the lips, teeth, and gingival tissue interact to make the smile attractive is in the domain of the dentist. Persons with attractive smiles are thought to be younger, healthier, happier, more intelligent and tend to achieve more in the workplace. Teeth were apparently created to be white. One of the oldest blessings of a father to a son in Genesis 49:12 is that his teeth be "white as milk". (I am certain this was whole milk, not skim milk!).

Although people have their teeth cleaned to avoid gum disease and tooth loss, the primary reason motivating most patients to have their teeth cleaned is to have a healthy smile without bad breath. When teeth are well aligned and attractively white, people will take better care of them. I have seen the example of youth with poor oral hygiene and discoloured teeth making dramatic changes in their brushing in order to obtain bleaching for whiter teeth. This healthier gingiva makes the teeth better looking and also reduces decay. Hence the value of a healthy smile is priceless. I have found that as teeth get whiter, not only do the patients take better care of their mouths, but their entire appearance. They tend to become more conscious of what they eat and how they dress. With the advent of worldwide colour television and movies, better fluoride in the water and toothpaste, and more travel and cross-cultural experiences, people are expecting their appearance to conform more to what they see in the public television programmes.

What is the best material for bleaching teeth?

Carbamide peroxide is routinely used for bleaching and comes in a variety of strengths - most notably 10 per cent, 15 per cent and 35 per cent. I believe that the safest and most cost effective method of tooth whitening is the use of 10 per cent carbamide peroxide in a customised, non-reservoir tray that the patient wears at night. The greater the strength of the carbamide peroxide, the greater the incidence of sensitivity during treatment.

In surgery, bleaching with 35 per cent hydrogen peroxide usually takes two to six visits and does not result in greater shade change than the at-home bleaching. It is also more expensive.

What exactly is carbamide peroxide and is it safe?

A 10 per cent solution of carbamide peroxide is 3.5 per cent hydrogen peroxide and 6.5 per cent urea. Urea is bacterostatic and elevates the pH of the mouth as well as provides long-term stability and time release of hydrogen peroxide. Ten per cent carbamide peroxide was originally used in

Van B. Haywood, D.M.D., is Professor in the Department of Oral Rehabilitation, School of Dentistry, Medical College of Georgia. In 1989, he co-authored the first publication in the world on Nightguard Vital Bleaching (at-home tray bleaching using 10% carbamide peroxide) with Dr. Harald Heymann, which formally introduced the technique to the profession. Since that time, he has completed further clinical and laboratory on that technique, resulting in over 60 bleaching publications and many local, national and international speaking opportunities. He also co-authored the first publication in the world on extended treatment times for tetracycline-stained teeth with 10% carbamide peroxide.

dentistry as an oral antiseptic in the 1960s to promote wound healing, either after oral surgery or tooth cleaning. It is also used today in hospitals in new-born infants with throat infections, administering 7-10 drops every 2-4 hours for 7-10 days, so it is very safe in low doses. Your body produces more peroxide in the eyes, liver and brain than is swallowed from a properly fitting bleaching tray.

What is the exact mechanism of action of the hydrogen peroxide on the tooth?

It is not clear what the peroxide is doing to the tooth to change the colour. More basic science research is needed in this area, since we are not certain what gives the tooth its colour in the first place. Most ideas at this time are theory only. We do know that whatever is happening, it is not damaging the tooth with regard to hardness, subsurface hardness, pulpal problems, or surface changes outside normal wear and tear.

How long does at-home bleaching take?

Expect about two to six weeks of treatment time for at home bleaching. Tell your patient this. Some may only take a few days to lighten. However, if they finish earlier, you are a saint, if it takes longer you are a prophet. I recommend a whitening toothpaste that has peroxide in it to maintain the whiteness for as long as possible. I always tell bleaching patients that it will last one-to-three years and then we have got to do something again. However, we have 10 year recalls with over 40 per cent of the patients still feeling that their teeth are the same as the original whitening colour. The question is, if you've got to do it again in three years, are you going to pay for in-office bleaching again or are you going to wear a tray for one or two nights and be back the way you were? We basically found that on the average it's about one-to-two nights of re-treatment for every week of treatment that you did originally.

Can you describe the tray?

I use a customised, non-reservoir, non-scalloped tray that is soft. The original tray design we published in 1989 was non-scalloped, non-reservoir (Fig 1). This tray fits the best, is most comfortable, and uses less material. This tray should cover all of the tooth surface and extend 1mm past the gingival margin onto the gum. The tray margin should be a smooth straight edge, and not scalloped. Newer tray designs include scalloped (to avoid tissue contact) and reservoir or spacers (to relieve any pressure from a tight fitting tray). There are variations when only portions of the anterior segment of the tray are scalloped, or where the occlusal surfaces are not covered. Each of these variations is dependent on the patient, the material used for bleaching, and the tooth and gingival architecture and characteristics.

Figure 1: A non-scalloped, non-reservoir, straight edge tray design.

How long does the patient wear the tray each time?

I recommend that patients wear the tray with the bleaching material overnight. In the first two hours, about half of the active ingredient of carbamide peroxide is depleted. The other half is used up over the next four-to-ten hours. So overnight wear appears to be better from a cost-effectiveness standpoint as well as safety; the more times you apply it per day the greater chance you have of sensitivity.

How do you manage any associated sensitivity?

One of the most recent significant advances in whitening is the use of potassium nitrate applied in the tray for sensitivity. It is the same ingredient that has been used in desensitising toothpastes for years. It takes about three weeks of continuous use of brushing with sensitising toothpaste to reduce measurably reduce sensitivity. If you put the same toothpaste in the bleaching tray for 10-30 minutes, relief is almost immediate. Ultradent, Discus, and Den-Mat sell specific potassium nitrate syringes in the United States but most of the time I tell patients to first try an over the counter anti-sensitivity toothpaste in the tray instead. If that works, it saves them a trip to the office for professionally distributed products.

Some patients may experience a gingival irritation from the use of toothpaste in the tray, and have to use the professionally-supplied products. However, there is a large variation in the toothpaste ingredients, even in the same company's products, so patients should try several flavours and brands. Sodium laural sulfate (SLS) has been associated with increased apthous ulcers, so using a product with and without SLS may be worth testing.

How much shade change can be expected?

Most patients will change to an A1 or B1, and some will be lighter than B1. It may take two-to-six weeks to get the desired shade change. The biggest shade change occurs in the first two weeks, although teeth will continue to lighten with use of the products until they reach their maximum lightening potential. Then they will not lighten further with continued treatment. The time required to reach the maximum lightening can vary from a few days to many months of treatment.

Any difficulties with smokers?

The process usually takes about three months of bleaching with smokers.

Is night guard bleaching useful in the management of opacities/white spots in teeth?

Bleaching is often effective in the management of white opacities. It

CASE 1

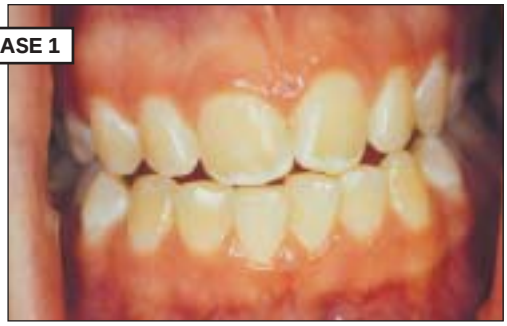

Figure 2: White opacities before bleaching.

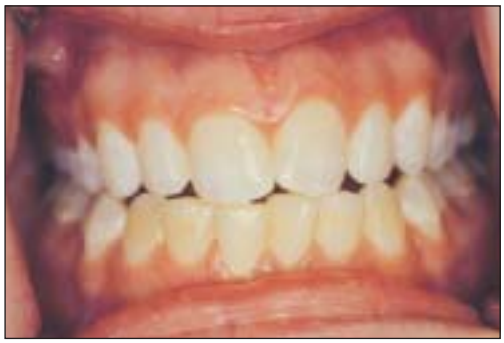

Figure 3: Same patient after five weeks of nightguard bleaching with 10 per cent carbamide peroxide.

does not remove white spots but may lighten the background colour of the tooth, minimising the difference between the colour of the tooth and the opacity. For example, in Case 1 where the patient had fluorosis (Fig 2), you can see that after five weeks of the night guard bleaching protocol there is a remarkable difference (Fig 3).

Other options for treatment of white spots are microabrasion and macroabrasion, as well as removal of infected tooth structure and replacement with a composite restoration.

CASE 2

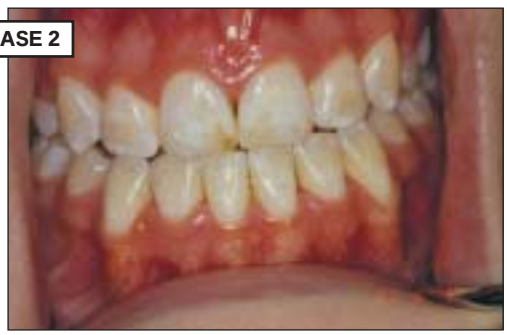

Figure 4: Brown discolouration of the maxillary right central incisor.

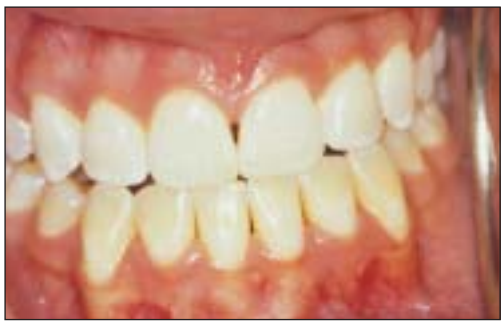

Figure 5: Same patient after six weeks of nightguard bleaching with 10 per cent carbomide peroxide.

What about using bleaching products in the management of brown spots?

Brown discolourations are removed about 80 per cent of the time, and generally take four to six weeks to be effectively removed (Case 2, Figs 4, and 5).

How do you treat the single dark tooth?

For the single dark tooth with no apparent pulp chamber, the best treatment is external bleaching with 10 per cent carbamide peroxide. The decision of what type tray to use is based on whether the adjacent teeth could also benefit from lightening, or whether to leave them their same colour. If all the teeth are to lighten, then a conventional tray is indicated. The other teeth will reach a maximum, and the patient can continue placing the material in the single tooth until it reaches its maximum (placing a mark over the area in the mold with a permanent marker is helpful to patients).

If only the single tooth is desired to be bleached, then construct a non-scalloped no reservoir tray, and cut the adjacent teeth moulds from the tray. Then material can be placed in the dark tooth mould only.

What about the single dark tooth that has been root canal treated? Can you discuss 'inside outside' bleaching and the other option of sealing the carbamide peroxide in the access cavity?

There are a number of options for the single tooth that has been root-canal treated, depending on the condition of the tooth and the time of treatment.

Conventional bleaching: if the tooth has received a root canal, and has been sealed with a restoration, it could be bleached from the outside just like a conventional vital tooth.

Walking bleach technique: if you are unsure whether all the pulp chamber contents and cement has been removed, then the tooth can be bleached internally in a 'walking bleach' technique. The pulp chamber is cleaned, and gutta percha removed 2mm down the canal below the CEJ. The gutta percha is then sealed with a glass ionomer, and 10 per cent carbamide peroxide injected into the chamber. This is covered with a cotton pledget, and sealed with a temporary filling. The patient returns to the office in two weeks to change the material. Treatment time is generally two to four applications.

Inside outside bleaching: a variation of the above walking bleach technique is possible with certain compliant patients and is called inside-outside bleaching. The internal portion of the tooth is prepared as in the walking bleach technique i.e., gutta percha sealed with glass ionomer. However, the chamber is left open, and a bleaching tray is fabricated for the outside bleaching. Bleaching material is injected by the patient nightly into the inside of the pulp chamber and also placed in the tray. Hence, the tooth is bleached from the inside and outside.

What about issues of resorption in non-vital teeth?

Resorption was first reported in 1979. Although it is not completely understood, resorption has been most associated with trauma, heat,

high concentration of peroxide (35 per cent Hydrogen Peroxide) and not sealing the gutta percha. Although I cannot change the trauma, I can eliminate the heat, 35 per cent Hydrogen Peroxide and can seal the GP.

What do you consider to be critical in the assessment of the potential bleaching patient?

It is very important to do a full assessment and diagnosis for the patient before prescribing bleaching. The diagnosis includes:

- A complete charting.
- Identify clearly any restorations in the aesthetic zone (these will not change colour and you must inform the patient that these may require replacement after bleaching).
- Screening periapical radiographs of the anterior teeth and of any other dark teeth (periapical pathology, internal or external resorption, caries).
- Pulp testing, particularly if dark teeth are present or you suspect non vitality.

Also please note:

- Amalgam restorations in the esthetic zone, even on the lingual of anterior teeth, may require replacement in advance of bleaching to prevent greening (due to certain amalgam-Hydrogen Peroxide reactions) and graying (due to increased translucency of the tooth).
- Composites in the anterior of the mouth will most likely require replacement at the end of treatment, but the dentist should wait two weeks for the shade to stabilise and for bond strengths to be at their maximum.
- Calcified/sclerosed teeth will require longer treatment times.
- Smokers require longer treatment times.
- Tetracycline staining requires even longer treatment times.

Any tips on dealing with the disappointed patients?

The best way to avoid a disappointed patient is to inform them completely prior to treatment. They need to have realistic expectations of their teeth getting lighter, but no guarantee that a certain shade can be achieved. I bleach one arch at a time, so the other arch can be used as a comparison for progress. The most difficult issue is to insure compliance of treatment, which one arch treatment helps.

My goal is that they will look natural if their teeth match the whites of their eyes. I also present the other options such as veneers and crowns that they will have to consider if they are unsatisfied with the outcome.

What is your protocol for treating tetracycline stains?

At-home bleaching should be the first option. Once, these patients weren't considered candidates for bleaching, but with the recent development of an extended protocol, we can eliminate many of these stains. There are many types of tetracycline antibiotics and they produce different colours of discolouration in the teeth. The blue-gray discolouration is most difficult to remove.

Also, the location of the staining is important, as discolouration at the gingival one third also has a poor prognosis. Banded teeth from multiple brands may require composite bonding to mask one of the colours after the others have been lightened. Patients should commit to a minimum of two months treatment for tetracycline before they expect to see any significant results. The average treatment time for these patients is four months, with a maximum of 12 months of nightly treatment.

Tetracycline teeth that have been bonded or veneered can also be whitened from the lingual, which may give the restorations a better look clinically. It is important to note also, that Minocycline, the most commonly prescribed drug for acne, has been shown to stain adult teeth. There is no good substitute drug, so patients must continue to use it, but may require bleaching later in life from deposition of tetracycline in the secondary dentin during extended use of Minocycline.

Any other comments?

Bleaching is part of an overall appearance of the teeth, smile and face. A complete smile analysis is needed to determine whether or not bleaching will be part or all of the treatment, and what the appropriate sequence is for treatment (see page 34).

Bleaching instructions

Instructions

- Wear tray at night.
- Apply small amount to inner wall of tooth mould in tray.
- Seat tray and wipe off excess from gums.
- When awake, remove tray and rinse mouth.
- Rinse tray, and store dry.

Records

- Keep up with number of hours worn in log form (in hour increments).
- Note if skip a day or forget also.
- Try to get as much from each syringe as possible (2-5 nights).

Sensitivity

- If have sensitivity, do one of the following:
- Skip a night or two, and start again.
- Brush with a desensitising toothpaste, like Sensodyne.
- Put a densensitising material (Ultra EZ, Sensodyne without SLS, etc.) in the tray for 10-30 minutes when needed.

Next appointment

Call for one-hour appointment when:

- Teeth colour is as you want (matches whites of eyes).
- Out of bleaching material.
- Questions or concerns (tray, teeth, gums, etc.).

Smile analysis

Clinical evaluation

Facial components

Smile/facial symmetry (describe deviations)

Face divided into equal thirds? Y ☐ N ☐

Interpupillary Line = horizon? Y ☐ N ☐

Midline of eyes, nose and chin in line? Y ☐ N ☐

Interpupillary line perpendicular with facial midline? Y ☐ N ☐

Commissure line perpendicular with facial midline? Y ☐ N ☐

Incisal edges line perpendicular with facial midline? Y ☐ N ☐

Proper functional incisal edge length and position (say "F", "V") Y ☐ N ☐

Does patient guard their smile? Y ☐ N ☐

Maximum smile

Draw lips relative to teeth to demonstrate smile line and amount of teeth/gingivae showing during smile

At rest smile: ☐ mm of centrals showing

Full smile: ☐ % of centrals showing

Full smile: ☐ mm tissue above centrals showing

Full smile: ☐ mm of lip movement from rest

Full smile: Is there discolouration in gingivae above teeth? Y ☐ N ☐

Smile form of lower lip	Smile form of upper lip?
☐ Curved	☐ Curved
☐ Straight	☐ Straight
☐ Reverse	☐ Reverse
☐ Asymmetric	☐ Asymmetric

Maxillary centrals 50% of 6-11 width? Y ☐ N ☐

Interproximal spaces visible? Y ☐ N ☐

Mandibular lip line follows incisal edges? Y ☐ N ☐

Incisal edges touch lower wet-dry line? Y ☐ N ☐

Balanced bilateral negative space? Y ☐ N ☐

Occlusal plane A-P correct? Y ☐ N ☐

Dental components

Dental midline (Describe deviations)

Maxillary dental midline coincident with facial midline Y ☐ N ☐

Max/Mand midlines coincident? Y ☐ N ☐

Tooth proportion

Tooth height to width ratio (75%) approximates Golden Proportion (1.6)? Y ☐ N ☐

Length of central incisors 10-11mm? Y ☐ N ☐

Central-lateral-canine in proper ratio (golden proportion)? Y ☐ N ☐

Anterior teeth with proper line angle location and shape? Y ☐ N ☐

Posterior teeth length in harmony and appear progressively smaller? Y ☐ N ☐

Axial alignment

Axial alignment inclines to midline? Y ☐ N ☐

Any flared teeth present? Y ☐ N ☐

Buccal corridors visible? Y ☐ N ☐

Proximal contacts

Proper inciso-gingival proximal contact position? Y ☐ N ☐

Proper incisal embrasure form? Y ☐ N ☐

Spaces gingival to contacts (black hole) diastemas? Y ☐ N ☐

Tooth shade and surface characterisation

(see bleaching analysis form)

Overall shade discrepancy present? Y ☐ N ☐

Individual tooth shade discrepancy? Y ☐ N ☐

Notable surface characterisation? Y ☐ N ☐

Gingival component

Gingiva in harmony with upper lip? Y ☐ N ☐

Gingiva confluent with DEJ? Y ☐ N ☐

Proper Canine-Lateral-Central position? Y ☐ N ☐

Proper gingival embrasures? Y ☐ N ☐

Healthy gingival papillae? Y ☐ N ☐

Inflammation/discolouration present? Y ☐ N ☐

Excessive gingival tissue (cause)? Y ☐ N ☐

Restorations

Defective restorations present Y ☐ N ☐

Tooth # _____ / Description_____

Tooth # _____ / Description_____

Tooth # _____ / Description_____

Tooth # _____ / Description_____

Tooth # _____ / Description_____

Tooth # _____ / Description_____

Patient comments

Is the patient pleased with overall smile? Y ☐ N ☐

Is there anything the patient would like to change about their smile? Y ☐ N ☐

Chief complaint

Summary diagnosis

Consultation required

Prosthodontic Y ☐ N ☐

Periodontic Y ☐ N ☐

Orthodontic Y ☐ N ☐

Dentine hypersensitivity: a review of the literature

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Introduction

Dentine hypersensitivity or 'sensitive teeth' is a common dental complaint, which may cause patients much distress. Almost one in four adults suffer at some time from this problem and many others have occasional sensitivity to sweets, acidic foods, and hot or cold drinks.[1] Dentine hypersensitivity is a diagnosis of exclusion[2] and it is important to differentiate between tooth pain caused by dentine hypersensitivity and that caused by other dental disease. The aetiology is multi-factorial and the treatment selected will depend on the severity of the condition. Despite the availability of many products on the market for the management of dentine hypersensitivity, results are unpredictable and it has been described as a particularly frustrating condition to treat.

Definition and diagnosis

Dentine hypersensitivity has been defined as "short, sharp pain arising from exposed dentine in response to stimuli, typically thermal cold, evaporative, tactile, osmotic or chemical and which cannot be ascribed to any other form of dental defect or pathology".[2] In a recent consensus report it was agreed that "disease" should be used instead of "pathology" in the definition as this challenges clinicians to consider other potential causes for pain associated with tooth sensitivity.[3] By definition, dentine hypersensitivity is a diagnosis of exclusion[2] and should be reached following a process of elimination involving careful history, clinical and radiographic examination.[1] The differential diagnosis should eliminate other conditions associated with dentine hypersensitivity, such as chipped or fractured teeth, caries, marginal leakage of restorations, cracked cusps of teeth and palatogingival grooves. Not all exposed dentine is hypersensitive and research indicates that there is often a difference between perceived and diagnosed dentine hypersensitivity which further complicates diagnosis.[4]

Prevalence and distribution

The age range of patients complaining of dentine hypersensitivity is from early-teens to late-seventies with a peak incidence between 20-40 years[4,5,6]. The apparent reduction in dentine hypersensitivity in later life may be due to age related dentine and pulpal changes such as dentinal sclerosis, increased reparative dentine, reduction in the size of the pulp and less nerve fibres and capillaries.[1,7] Commonly less than 5-10 per cent of exposed dentine has symptoms of sensitivity. A questionnaire study of prevalence of dentine hypersensitivity in a general dental population in Northern Ireland concluded that the prevalence of dentine sensitivity was much higher than previously reported, suggesting an increase in the levels of sensitivity within the general population.[8] A postal survey of 100 Irish dentists reported that 97 per cent of the dentists found dentine hypersensitivity in 18 per cent of their patients.[9] The dentists considered dentine hypersensitivity to be an increasing problem and the main causes cited were inappropriate tooth brushing technique and tooth erosion. The buccal cervical area of teeth is the most common site for dentine hypersensitivity and maxillary teeth are most commonly affected, particularly canines and first premolars.[5] One study reported dentine hypersensitivity most frequently on molars; however this study was on periodontal patients.[10] Almost half of all patients suffer from dentine sensitivity following periodontal root instrumentation; however, this tends to reduce within six months post-treatment.[11]

Table 1: Dentine hypersensitivity - prevalence studies
(*=clinical examination done)

Author & year	Source	Patient Group	Age	Prevalence
Flynn *et al.* (1977)[6]	GDP*	Scotland	11-74	16.8%
Fischer *et al.* (1992)[4]	GDP*	Brazil	13-87	25%
Irwin & McCusker (1997)[8]	GDP	N. Ireland	40 + 14	57.2%
Hsin-Cheng *et al.* (1998)[12]	GDP*	Taiwan	20-83	32%
Gillam *et al.* (1999)[13]	GDP	UK	42 + 14	
Clayton *et al.* (2002)[14]	GDP*	RAF in UK	17-88	50%
Rees & Addy (2002)[15]	GDP*	UK	-	4.1%
GSK, Ireland (2002)[9]	GDP	Ireland	18+	18%
Chabanski *et al.* (1996/7)[10]	Periodont*	UK	19-77	84%
VonTroil *et al.* (2002)[11]	Periodont	Systematic review	-	9-23% (pre tx)
				55% (post tx)

Aetiology of dentine hypersensitivity

Dentine hypersensitivity results from three primary factors:

1) exposure of root surfaces to the oral environment,
2) development of surface porosity/permeability with exposure of patent dentinal tubules, and
3) the inherent susceptibility of pulpal nerve endings to changes in fluid transport within dentine.[16] The hydrodynamic theory of dentine hypersensitivity suggests that the dentinal tubules may act as passive hydraulic links between the site of stimulation and nerve endings located more deeply, either at the pulpal ends of the tubules or in the underlying pulp.[17]

The two processes required in the development of dentine hypersensitivity

Lesion localisation

Firstly, there must be exposure of dentine to the oral environment by gingival recession and loss of tooth substance. Gingival recession may be related to tooth anatomy, tooth position, ageing, ANUG and chronic periodontitis, acute and chronic trauma such as tooth brushing, habits, root planing, periodontal surgery or factitious injury. Communities without access to dental care may also show gingival recession, which may be due to tooth wear, and continuing tooth eruption.[18] Tooth substance loss may be related to abrasion, erosion, attrition and abfraction.

Lesion initiation

Initiation of dentine hypersensitivity requires opening of dentinal tubules in the exposed dentine. It is well established that there are many more and wider open tubules at the surface in hypersensitive than non-sensitive dentine.[19] Factors related to dentine hypersensitivity include high acid diet, gastric reflux and parafunctional habits that may cause attrition and abfraction lesions.[1] In-vitro studies suggest that most toothpastes remove the smear layer through abrasive and detergent actions. However, some can re-occlude tubules with abrasive particles.[1] Erosive agents, particularly acidic dietary fluids, readily expose tubules. pH is an important factor, but other characteristics of these solutions may be relevant to dentine erosion. Some low pH mouth rinses have the potential to cause dentine erosion. Combined abrasive and erosive insults to dentine readily open tubules and cause accelerated dentine loss.[20] Patients may also complain of dentine hypersensitivity following periodontal therapy (root debridement) and vital bleaching procedures,[21] however this tends to resolve within six months.

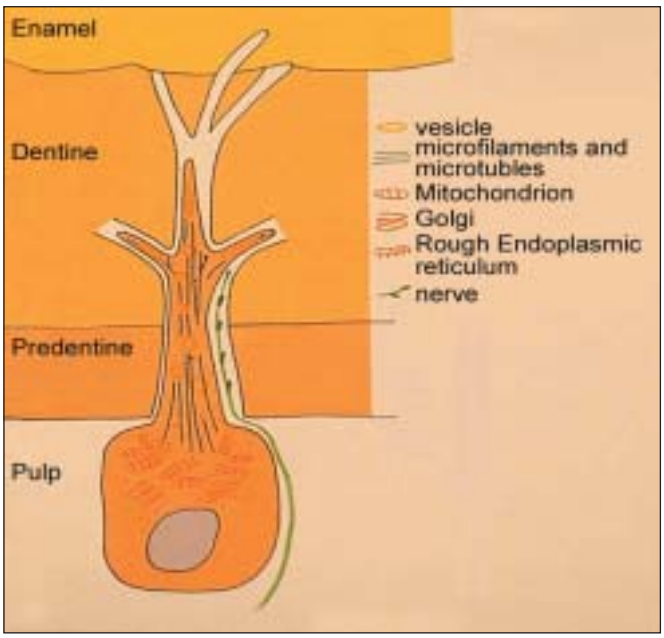

FIGURE 1: Berkovitz, *et al.* 2002.

Management and treatment of dentine hypersensitivity

Management of dentine hypersensitivity should be two fold and based firstly, on prevention of further dentine exposure and, secondly, on therapy to manage the hypersensitivity. Prevention is aimed primarily at preventing further exposure of dentine through tooth wear or root exposure (i.e., control of the aetiological and predisposing factors) and, secondly, at elimination the exacerbating factors such as acid. It is important to explain the multi-faceted causes of the condition to patients and they need to become

Table 2: Aetiology of dentine hypersensitivity
Tissue loss and exposure of dentinal tubules
Tooth substance loss (enamel and cementum)
Gingival recession
Opening of dentinal tubules - removal of smear layer
Acid in dental plaque, diet, gastric reflux
Agents in toothpaste such as abrasive or surfactant
Vital bleaching
Stimulation of dentine hypersensitivity
Temperature (cold drinks, ice-cream, cold weather, etc)
Inappropriate tooth brushing
Acid in diet or gastric reflux
Poor oral hygiene, etc

Table 3: Treatment strategies for dentine hypersensitivity
Level 1: Treatment applied at home by the patient
OHI and dietary advice
Home use of fluoride gels/mouth rinses
Anti-hypersensitivity toothpastes
Level 2: In-office treatment to occlude the tubules
Gels, varnishes, iontophoresis
Primers containing HEMA
Level 3: In-office treatment to occlude and seal tubules
Glass ionomer and adhesive resin systems

involved in the resolution of their condition. Patients should generally be taught appropriate oral hygiene techniques to avoid trauma and other causes of gingival recession should be identified and monitored. The results of an in-vitro study suggest that the timing of brushing should be remote from meals or the ingestion of acidic drinks.[22] It is also suggested that it may be better to brush the teeth before meals.[3] They should also be made aware of the potential problems associated with dietary acid, even at an early age. Dietary evaluation should be carried out to identify any excessive intake of acid. A careful history should identify any sources of gastric reflux/regurgitation of acid. The second aspect of treatment is when the lesion has been initiated and dentine hypersensitivity has been diagnosed.

Treatment may be divided into patient applied home therapy and dental office applied therapy, and is directed towards reducing the fluid flow in tubules, blocking the nerve response in the pulp or possibly both. Treatment may achieve its affects by:

- Occluding dentinal tubules.
- Coagulating or precipitating tubular fluids.
- Stimulating the formation of secondary dentine.
- Blocking the pulpal neural response.

The properties of an ideal desensitiser should be that it is not unduly irritating to the pulp, painless when applied, easy to apply, consistently effective, permanently effective, quick-acting and not causing tooth discolouration.[23] Evaluation of treatment is difficult as the ultimate criterion of success for hypersensitivity treatment is the subjective opinion of the clinician and patient.[24] Pain perception depends on several variables such as the significance of the pain, individual personality, psychological factors, cultural attitudes, anticipation of pain and degree of apprehension.[25]

Therapy applied at home by the patient

A) Toothpastes

Toothpastes contain an abrasive, filler, flavour, water, humectant, surfactant and active agent. Various active agents directed towards dentine hypersensitivity have been incorporated into toothpastes and most are supported by studies demonstrating some effect. Improvement for a majority of cases of dentine hypersensitivity will be obtained by the use of a desensitising agent incorporated into a toothpaste.[3,26]

The following list of agents that have been used to control dentine hypersensitivity:

Strontium chloride: self-applied 10 per cent strontium chloride hexahydrate desensitising toothpaste seems to be effective in relieving the pain of dentine hypersensitivity. The use of a toothpaste with potassium nitrate or strontium may help relieve the pain of sensitive teeth by reducing or blocking reactivity of pulpal sensory nerves. This agent was extensively tested in Sensodyne™ toothpaste in the 1950-1980s.

Potassium nitrate: toothpaste containing five per cent potassium nitrate or 3.75 per cent potassium chloride provides some relief, but was not maintained at six-to-eight week assessment.[27]

Dibasic sodium citrate: toothpastes containing dibasic sodium citrate have provided some relief by blocking reactivity of pulpal sensory nerves.

Potassium citrate: a toothpaste (Mentadent S™) containing potassium citrate has been shown to provide some relief by blocking reactivity of pulpal sensory nerves.

Formaldehyde: this agent is in Emoform™ toothpastes. The mechanism of actions is not understood and study results have been contradictory. In-vitro the formaldehyde formulation left the dentinal tubules widely open.[28]

Sodium fluoride: sodium fluoride is claimed to cause a reduction in the diameter of the dentinal tubules by precipitating CaF2 crystal.

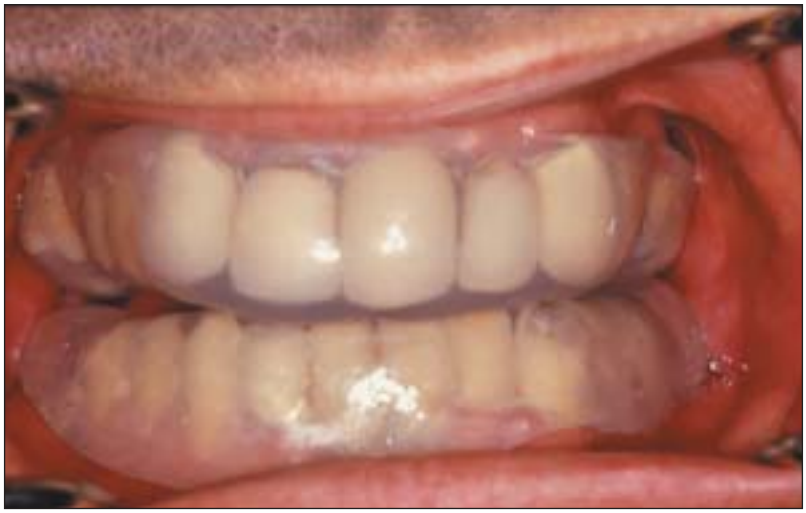

Figure 2 (left): Soft acrylic trays for home application of medicaments.
Figure 3 (above): Soft acrylic trays for home application of medicaments - intra oral.

Sodium monofluorphosphate: monofluorphosphate is thought to interact with hydroxyapatite. It is suggested that the fluoride part, once hydrolised, could be incorporated into the dentine to form a more stable hydroxyapatite.

Stannous fluoride: the suggested mode of action of stannous fluoride is the formation of calcified barriers blocking the dentinal tubule openings. On dentine surfaces treated with stannous fluoride solution, a layer containing tin and fluoride could be demonstrated, which would provide mechanical and chemical protection for exposed dentine.[29]

B) Mouthwashes

Sodium fluoride mouthwashes, either 0.2 per cent weekly or 0.05 per cent daily, may have anti-hypersensitivity actions.

C) Gels

There have been studies to investigate the use of gels containing potassium nitrate, sodium fluoride and stannous fluoride. All studies have demonstrated varying levels of effect. Gels contain glycerine and it has been shown that glycerine alone can reduce dentine hypersensitivity.[30] It is suggested that glycerine may occlude the dentinal tubules or may have a desiccating effect on the tubules, reducing their permeability and fluid flow. These may be applied in mouth guards.

Therapy applied in the dental office

1) Treatment agents that do not polymerise

Varnishes: copal varnish has a transitatory effect. Duraphat varnish contains 2.26 per cent NaF and has some effect on dentine hypersensitivity.

Fluorides: application of high concentration fluorides appears to be effective but may irritate odontoblasts. Applications are thought to precipitate CaF2 at the dentine surface thereby occluding the tubules. This precipitate is slowly soluble in saliva and the effect is thus transient.[31] A paste using 33 per cent NaF, 33 per cent kaolin and 33 per cent glycerine has been used for many years. There is a good immediate response, probably due to the formation of a smear layer, which is lost with time.

Oxalates: oxalates appear to be effective for blocking dentinal tubules, however, the precipitate is dissolved by saliva and the effect transient.[32] Agents which have been used include potassium oxalate and ferric oxalate.

Caustics: caustic agents were used as “obtundants” in an attempt to precipitate proteins. These can irritate the pulp and should be avoided. Caustic agents include silver nitrate, zinc chloride, phenol formaldehyde, concentrated alcohol, strong acids and strong alkalis.

Calcium hydroxide: a calcium hydroxide paste appears to have a desensitising effect. The mode of action is formation of peri-tubular dentine and occlusion of the tubular openings.

Potassium nitrate: the use of 5-30 per cent potassium nitrate applied by the dentist has been suggested. The suggested mode of action is on the nerve fibre membrane.[31]

Primers containing HEMA: the use of HEMA-containing primers appears to have some value in the management of dentine hypersensitivity. It is speculated that the primer causes a precipitation of plasma proteins within the dentinal tubules.

2) Treatment agents that undergo setting or polymerisation reactions

The use of conventional glass ionomer cements and resin-modified glass ionomers/compomers reduces dentine hypersensitivity successfully.

Adhesive resin primers reduce dentine hypersensitivity when used as

Table 4: In-office treatments for hypersensitive dentine

Treatment agents that do not polymerise
A) Varnishes/precipitants
1. Shellacs
2. 5% NaF varnish
3. 0.4% SnF2 , 0.14% HF solutions
4. 3% mono-potassium-monohydrogen oxalate
5. 6% acid ferric oxalate
6. Calcium phosphate preparations
7. Calcium hydroxide
B) Primers containing HEMA (hydroxyethyl methacrylate)
5% gluteraldehyde, 35% HEMA in water or 35% HEMA in water
Treatment agents that undergo setting or polymerisation reactions
1. Conventional glass ionomer cements
2. Resin-reinforced glass ionomers/compomers
3. Adhesive resin primers
4. Adhesive resin bonding systems
Use of mouth guards with various gels
Iontophoresis
Lasers Pashley[32]

a no-etch, light cured procedure. An alternative resin desensitiser, which contains oxalic acid and an emulsion of polymethyl-methacrylate copolymerised with p-styrenesulfonic acid, has been tested. The treated surface becomes covered with a layer of polymer and some primitive resin tags are formed within the tubules.[33] A product containing methyl methacrylate and triclosan has also had favourable results (Seal and Protect™ - Dentsply). In 2002, the effect of desensitising agents on dentine permeability and dentine tubule occlusion was tested.The agents tested were Seal & Protect™, Gluma Desensitizer™ - (Heraeus Kulzer), Hurriseal™ - Beutlich Pharmaceuticals (resin occlusion), Gluma Desensitizer™ (precipitation of proteins), D/Sense 2™ - Centrix, SuperSeal™ - Phoenix, (precipitation of crystals). The dentine desensitising agent tested showed a wide range of dentine permeability reduction. Superseal™ appeared to be the most effective. It demonstrated tubule funnelling to the surface of dentine. This demineralisation is most likely due to the low pH of the solution and may help promote the sealing of the tubules by attacking peri-tubular dentine and using calcium oxalate crystals to block the dentinal tubules.[34] The effectiveness of adhesive resin bonding systems in reducing dentine hypersensitivity has improved as bonding techniques and formulations have improved.[35] The development of self-etching bonding agents offers further possibilities in treatment

4) Iontophoresis

Iontophoresis is the process of introducing ionic drugs into body surfaces for therapeutic purposes, and is highly suited to therapy of conditions at or near the body surface. High concentrations of drugs can be placed precisely where they are needed, rather than depending upon diffusion or systemic administration. This current source must have features that make it not only effective but also safe.[31] It is suggested that the iontophoretic fluoride desensitisation could occur by two mechanisms: intratulular micro-precipitation of CaF2, affecting dentine permeability and the effect of the fluoride on the neural transduction mechanism. The in-office use of iontophoresis of NaF to treat hypersensitive dentine has been advocated. It is a technique-sensitive method that requires the purchase of an apparatus. Reports of lack of efficacy may be due to inadvertent passage of current thorough cervical dentine. However, clinicians skilled in iontophoresis are strong advocates of its use.[32]

5) Lasers

Several studies on the use of helium-neon and Nd:YAG lasers have been reported. The suggested mechanism of action is the coagulation and precipitation of plasma proteins in dentinal fluid and also the possibility for the thermal energy to alter intradental nerve activity. However the clinical results obtained in the use of lasers to treat dentine hypersensitivity do not seem to justify their very high purchase price.[32]

Summary and recommendations

1. Eliminate any other pathological or disease conditions as causes of the sensitivity.
2. Assess lesion localisation in relation to the clinical condition of gingival recession and tooth substance loss (erosion, abrasion).
3. Assess lesion initiation in relation the severity of the condition by means of history (can you jog in the cold air, drink cold drinks), presence of aetiological factors such as acid in the diet and clinical examination (air and tactile).
4. After diagnosing dentine hypersensitivity, it is important to explain the multi-factorial nature of the condition to patients. Patients need to become involved in the resolution of their condition.
5. All treatment should be carried out without anaesthesia to assess response.
6. Advice to patient regarding home-applied therapy:
   - Diet advice regarding acid in diet or other sources (e.g. gastric reflux).
   - Oral Hygiene Instruction and brush gently with anti-hypersensitivity toothpaste.
   - Fluoride rinse should be water based/low alcohol or gels applied in trays.
7. Therapy that can be undertaken in the dental office:
   - Reversible procedures should be considered first including fluoride therapy and various desensitising agents described above.
   - Restorative treatment modalities aimed at occluding the dentinal tubules.
   - Mucogingival surgery for root coverage or, finally, pulpectomy.

There is a need for guidelines on the aetiology, prevention and treatment of dentine hypersensitivity for both dentists and their patients.36 Dental school curricula should offer greater focus on the diagnosis and management of pain in general including dentine hypersensitivity.[3]

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Title page including

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- ☐ Tables on separate pages
- ☐ Legends on separate pages
- ☐ Illustrations

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Aims and scope

The Journal of the Irish Dental Association exists to publish original research studies, clinical case reports, position papers, literature reviews, brief communications, clinical tips and other material that is of interest to the Irish dental profession.

All material will be evaluated for publication on the understanding that the work submitted has not been published elsewhere (except as an abstract), that it has not and will not be submitted to another journal until the editor has made a decision on its acceptability for this journal, and that, if accepted, its contents will not be published elsewhere without the editor's permission. Accepted papers become the copyright of the Journal of the Irish Dental Association and permission mush be sought from the publishers before it can be reprinted elsewhere.

The research must clearly state the problem and objective of the research, include a summary of relevant literature in the introduction, describe the research method, report the results briefly and accurately, discuss the results and list the conclusions that can be drawn from the research.

Clinical case reports should briefly describe the particular clinical problem, the author's method of managing the problem; and, a rationale for such treatment with appropriate references to the literature.

Literature reviews should thoroughly analyse the literature with respect to the chosen topic and reference all material used.

Tips to the readers should report new, helpful or time-saving techniques or procedures.

All accepted manuscripts are subject to editorial revision. The author, who will receive edited proofs for approval, will be responsible for all statements in the article, including changes made by the editor.

Construction

- Three typed copies of each manuscript must be submitted. Each manuscript must be typed on one side only of an A4 sheet of paper.
- The text must be of 10pt size, double-spaced and with a 20mm margin on the left side of the text.
- The right-hand margin must be unjustified.
- Each page must be numbered in consecutive order from the title page, through the abstract, text, references, tables and photographs in that order.
- The first page, or title page must contain the title, all the authors' names and affiliations. Dentists registered in the Republic of Ireland must not use any qualifications not registered by them with the Dental Council.
- This page must also give the name, address, phone number, fax and email (if available) of the corresponding author, who will undertake correspondence, proof reading, etc.
- The second page will contain a concise precis (not more than 25 words) for use in the table of contents. This should state the conclusions of the report.
- Each manuscript must contain a structured abstract of a maximum of 250 words, with the headings: Statement of the problem, purpose of the study, materials and methods, results, and conclusions.
- For the body of the text, use standard

advice to authors

headings: introduction, materials and methods, results, discussion, conclusions, etc.).

- References must identified in the text by superscript and numbered consecutively in order of appearance in the text. References appearing in tables only shall be numbered in relation to the first mention of the table in the text. The reference number must appear as a superscript. The list of references should be placed at the end of the article and must be numbered as in the text, and placed in numerical order. References shall be given according to the Vancouver style: the author's surname and initials (if there are more than five authors, additional authors are designated as et al); full title; journal title (in standard abbreviated form); year; volume number; and page numbers from start to finish. For example:

  Coli, P., Blixt, M. and Brannstrom, M. The effect of cervical grooves on the contraction gap in class two composites. Op Dent. 1993; 18: 33-36.
- Do not cite unpublished data, personal communications, abstracts of meetings, letters to editors or papers appearing in journals that are not both peer reviewed and indexed in either the Index Medicus or the Index to Dental Literature. Such material may be given in the text, if necessary, with the source in parenthesis.
- All tables must be on separate sheets and must have a consecutive number and a clear concise title. Do not duplicate data in tables and text. Include adequate information (using footnotes if necessary) to make the table self-explanatory.
- Include two sets of photographs or high-quality artwork. Any computer-generated graphics must be printed using a laser printer or high-quality plotter. Try to avoid using business-type graphics (3D bars, etc.).
- Radiographs must be of a high quality.
- Identify each figure with a number in order of its mention in the text. This should be written lightly in pencil on the back upper right-hand corner.
- Type the legends to the figures on separate sheets and number to correspond with the figures.
- All acknowledgments should be concise and should include only identification of grant sources and permission to reproduce from previous publications.

Disk version

A version of the manuscript must be submitted on disk. Any IBM PC or format of Microsoft Word® is acceptable on a CD-ROM, zip disk or 3.5-inch floppy disk. Write on the disk label the name of the word processing package used. Where illustrations have been computer-generated, they should be submitted on disk with the final manuscripts and not embedded in the Word document itself; a caption should be placed in the text where the image should appear. Where possible, the disk-based illustrations will be used to maintain quality throughout the publishing process. Please provide the name of the drafting package used and state which files on disk correspond to which figure.

General instructions

- Spelling should be that of the Oxford Dictionary.
- Avoid excessive use of abbreviations. Authors may use abbreviations that are in common use in scientific literature. They may introduce less familiar acronyms whenever unwieldy terms are repeated many times in the text. The abbreviation should be introduced (in parentheses) where the term is mentioned first and the abbreviation should be used thereafter. On occasion it may be desirable to list abbreviations as a footnote.
- Numbers below 10 should be spelled out (one, two, etc.,) as should percentages below ten (five per cent but 15 per cent), but measurements should be given in figures and abbreviations (5g).
- Words are used rather than figures at the beginning of a sentence, or where clarity or elegance requires it. Fractions must be written in full but decimal numbers appear as numerals. A decimal point must be preceded by a number. Where numbers including a decimal point appear in a column, the decimal points should be aligned vertically. Temperature must be expressed in Celsius (C) scale. Measurements and quantities should normally be in Systeme Internationale (SI) units. Those seeking details of the system are referred to Quantities, Units and Symbols published by The Royal Society (1975) or Units, Symbols and Abbreviations published by The Royal Society of Medicine (1976). In general, quantities are best expressed in terms that give the closest approximation to unity: e.g. 4.5mmol/L rather than 0.0045mol/L, and 1.5g rather than 1500mg.
- Specific names of bacteria are printed in italics.
- Names of commercially prepared bacteriological media should be typed with a capital.
- Names and addresses of manufacturers should be given in parentheses.

Review process

All manuscripts are reviewed by the editor, editorial staff and by two reviewers.

Authors must disclose any financial interest that they have in products mentioned in their articles or that they will receive compensation from a commercial company upon publication of the article.

Submitting

Three copies of each manuscript for consideration must be submitted, along with an electronic copy (disk or email) with an attachment in Microsoft Word or similar to:

The Editor
The Journal of the Irish Dental Association
10 Richview Office Park
Clonskeagh Road
Dublin 14
Email: info@irishdentalassoc.ie

NB: The manuscripts must be accompanied by a letter signed by each author.

Classifieds for the summer issue should be sent to the Irish Dental Association by May 21, 2004.

Positions vacant

Orthodontist required to join dental team on a sessional basis in a provincial town 30 miles from Dublin. Replies to Box No. J104.001.

Full time associate required for busy family practice in the northwest. Full book. Apply to Box No. J104.003.

Full-time associate required for Galway city practice. Private, social welfare and medical card patients treated. Replies to Box No. J104.005.

Associate required for established dental practice Galway city centre. Full book. Replies to Box No. J104.007.

Associate wanted with an early view to partnership/sale in busy north city (Dublin) practice. Full book. Tel: 01-6686929 evening.

Dental associate wanted to join very busy well established practice. Full book guaranteed. O.P.G. Fully trained staff. 20 minutes from Carlow/one hour from Dublin. Contact James on 087-6851568.

Part-time dental associate required for busy practice 20 minutes from Galway City. Tel: 086-0708250.

Associate dentist wanted to replace departed associate needed for busy north Tipperary practice. Fully computerised, full digital radiography. Complete clinical freedom. Start immediately. Tel: 0505-23000 during office hours.

Dentist with interest in root canal treatment or endodontist sought for part-time work in south Dublin. Tel: 01-2842570 (surgery) or 087-8775749 (mobile).

Associate wanted in modern progressive practice in southwest. Open to discussion on long-term possibilities. Tel: 086-8124427.

Suffolk, UK: associate required to replace emigrating colleague. Excellent location in busy market town. NHS plus good private potential. Surgery recently refurbished to the highest standard. Excellent remuneration and fully trained, enthusiastic support staff. Contact William on 0044-1787-473874. Email: dutoit@stansteadhall.fsnet.co.uk

Dublin: full-time dentist required for busy and well-located city centre practice. Immediate start. Contact 087-2260473 or pscannell@pmcc.ie.

IRISH DENTAL HYGIENISTS ASSOCIATION

Looking for a hygienist?...

...Look no further

Just contact the IDHA Employment Officer

Paula McEvoy on 087-6590668

(weekdays 7.00 p.m. – 9.00 p.m. only)

Locum required for three to four months in northeast region commencing July 1, 2004. Tel: 086-1741450 or 041-6856543.

Experienced dental associate required, full/part-time to replace departing colleague in busy modern practice with excellent support staff. Midland/Galway region. Contact 086-6093215 evenings.

Clonmel, Co Tipperary: associate dental surgeon wanted. Start after mid-July 2004. Busy, mixed, friendly practice. Excellent staff. Tel: 087-2461006.

Full time dental associate required for busy, modern Dublin surgery. Tel: 086-3844129.

Associate wanted in southwest Dublin, full or part-time. Immediate start. Tel: 01-4513453. Mobile 087-2369757.

Locum required for four months starting July 04 approx, for busy North East practice, 1 hour from Dublin. Tel: 086-1741450 (evenings and weekend).

Associate wanted: private dental practice in Co Meath seeks associate (full-time preferred but part-time considered). Partnership may be offered at a later date. The practice is very busy and no medical card work is undertaken. There is a full supporting team of two dentists, two hygienists and qualified nurses. We are equipped to a very high specification with Sirona chairs, RVG, Digital OPG, Air Abrasion, Operating Microscope, etc. Tel: 046-9071961 evenings and weekends.

Friendly associate required (full-time) for busy group practice in Nenagh, Co Tipperary. OPG on site. One of the DSAs is qualified to take OPGs. Tel: 087-6866180.

Associate dentist: expanding practice in Kilkenny city offers associate position commencing April 04. Call text or voicemail: 087-2427932.

Locum dentists required for temporary placements in all areas of the city and nationwide. Tel: Sue on 087-6825002 or register on our website www.locumlocators.ie.

Associate dentist required for busy south Dublin practice. Associate full-time dentist required for busy three-surgery practice in south Dublin from March. Contact Aoife 087-9887821.

Clarence House Dental Surgery, Norfolk, England. Two long-term positions available for dentists within large, seven dentist practice to begin in August 2004. Very well equipped modern surgeries. Earnings between £25,000-£40,000. For further details see www.clarencehouse.net Please reply with CV to Mark Hansell at dmhansell@btopenworld.com.

Flynn Healthcare is seeking: General dentists, Orthodontists, Endodontists, Paedodontists, Prostodontists. As partners/assistants for a state-of-the-art new dental clinic being developed on Dublin southside. Contact: Dr Michael Flynn, Flynn Healthcare, 121 The Sweepstakes, Ballsbridge, Dublin 4. Tel: 086-8892451 or 01-6605678. Email: flynnhealthcare@o2.ie.

classified

Enthusiastic ethical associate required for Dublin city centre practice, four-and-a-half days per week. Experience necessary. Tel: Roberta Swanwick or Carmel Doran 01-8306646.

Positions sought

Dentist seeks part-time or full-time associate position in SW Dublin, Kildare, Carlow, west Wicklow, Offaly, Laois. Replies to Box No. J104.002.

Dentist seeks one to two days per week in practice in Munster region. Apply to Box No. J104.004.

A fully registered experienced dentist seeks, locum or part-time associate post, in Dublin area (north or east). Tel: 087-6344709.

Associate available immediately for full-time/part-time work. Tel: 085-7256987 or email: dentistadvert@netscape.net.

German graduated dentist seeks a position in a practice with view to an early partnership/sale in southwest Dublin/Dublin; to begin immediately. Tel: 087-6826840 or 045-867954.

Experienced male Irish dentist available for long or short-term locum/associate position. Munster and south Leinster area preferred. Tel (evenings): 021-4369402.

Hard-working, enthusiastic Japanese national seeks full-time (or part-time) position as dental surgery assistant. Excellent English and has some experience of working in an Irish surgery environment. Email: hiro88hiro@hotmail.com.

I am a German graduated Orthodontist, working currently in United States with five years of experience, looking forward to working in an Irish practice. Dr Harald Hoechstetter, 27 Ave C, Apt. 1D, New York, NY. 10009. Tel: 001-917-686-9904.

For sale

Dental equipment and instruments for sale (owner retiring from practice):Two compressors, Degussa Dentomat, Visilux (3m) light curing unit, Ultima 2 (1997), Dentech dental chair, Tridac CS90 aspirator attached to dental chair, Asepti evolution X3000.2C x-ray machine, Highlux shadowless lamp (operating light). All items are in first class condition and working order. Offers to Box No. J104.006.

Long established private dental practice for sale in South Dublin. Accommodated in detached, purpose-built building (three surgeries, reception area, waiting room, office and lab). Also adjacent bungalow residence: detached (three reception rooms, five bedrooms). Location between St Vincent's Hospital and Blackrock Clinic. Tel: 01-2140679 (evenings).

For sale: two-surgery practice in large developing provincial town, 25 minutes north of Dublin. Good potential for expansion. Tel: 041-9838617.

Large period residence for sale. Private large mature site. Just renovated. Private sale/top end. Located Galway, 20 minutes. Phone 087-2907567.

Leasehold practice for sale. Totally private. Superbly located on the QBC in the south Dublin suburbs. Owner is retiring. Tel: 01-2895008 (evenings only).

Modern equipment, three years old from two surgeries available from around July 1 next: Computerised practise management system with integrated digital X-ray system, Dentech package incl. chair, unit, cuspidor, Light, Melag 29-S Autoclave plus filtration system etc., full inventory available. Tel: 087-7688177.

Lease

Dental surgery – prestigious leasehold to rent. Totally private. Superbly located in the IFSC, Dublin 1. Good potential for expansion. Equipment included in rental. Phone 01-6701819 (Martha).

Medical suites to let in newly constructed medical centre in rapidly expanding northeast town. Incoming tenants include general practitioners and occupational therapists with further rooms available for a wide range of medical services. Further information from Sion Consulting 046-9076775 or 087-2407650.

Cork city: Dental specialist. Specialist medical clinic, near major hospitals. Fully equipped dental surgeries. Available for lease or rent. Would suit oral surgeon/endodontist. Tel: 087-2356492.

Rooms to rent: Consultation rooms available at The Plaza Clinic, Main Street, Swords, Co. Dublin. Available on a sessional basis. High quality standard of finish. Waiting rooms. Appointment service. Car parking. Tel: Geraldine 01-8079906. Fax: 01-8902413 or Email: theplazaclinic@esatclear.ie.

To let: new dental surgery to let over pharmacy in Callan, Co Kilkenny. Excellent opportunity, no competition in this rapidly expanding town. Tel: 087-6387902.

Services

Endodontic and implant/restorative practice newly established at Unit 13, The Plaza, Blanchardstown Village. New patients and referrals welcome. Dr Teresa Lynn Bdent Sci MSc (Endodontics). Tel: 01-8201360. Dr Brian Dunne Bdent Sci MSc (Implantology). Tel: 01-8201390.

Dr Claire O'Sullivan BDS, FDSRCPS, M.orth,MSc. is pleased to accept new orthodontic referrals. The Park Clinic, Cabinteely, Dublin 18. Tel: 01-2853666, and Ratoath Dental Centre, Main Street, Ratoath, Co Meath. Tel: 01-8256983 or Email: ratoath-ortho@eircom.net.

Diary of Events

Annual General Meeting

North Munster Branch
Date: April 2004 (TBA)
Venue: TBA

Metropolitan Branch Golf Outing

Metropolitan Branch
Date: April 4, 2004
Venue: Powerscourt Golf Club, Enniskerry, Co Wicklow

Top tips for complete denture success

Dr Peter Howell, Prosthodontist (Kerry branch)
Date: May 13, 2004
Venue: The Brandon Hotel, Tralee

Annual Scientific Conference

Facilitator: Irish Dental Association
Date: April 27 - May 1, 2004
Venue: South Court Hotel, Limerick

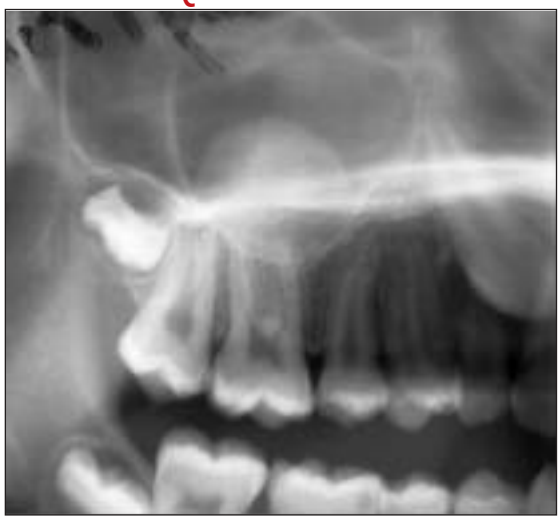
As IDA President, Dr Michael Galvin explains, there are four ingredients in making up a successful Annual Scientific Conference: the first of these is the scientific programme. This year an outstanding programme has been created, full of wonderful national and international speakers. They are lecturing and debating (in the arena) on almost every aspect of dentistry. A comprehensive list of lectures has also been organised for the technicians, nurses and hygienists. The table demonstrations and poster presentations will also inform and entertain us.

The second ingredient is the trade show. This year's National Trade Show is the largest ever staged at the Annual Scientific Conference, with more than 45 exhibitors.

The third ingredient is the social programme. There are plenty of things to enjoy from the cultural, Hunt Museum, Art Gallery and the Georgian House to the sporting, horse riding and golf. The President's Gala Dinner has been moved to the Friday night to become a more integral part of the social programme.

The fourth ingredient is possibly the most important of all— the delegates! In spite of having great ingredients you can't have a successful party without your friends. See you there.

DENTAL QUIZ



Radiology case

Illustrated is part of a panoramic image of a white adolescent male made as part of an orthodontic assessment. There is a well-defined dome-shaped radiopacity above the teeth 17–15.

What is your radiographic diagnosis?

How would you manage this condition?

Answers should be submitted by May 1, 2004, to:

Quiz (1) 2004
The Irish Dental Association
10 Richview Office Park
Dublin 14
Fax: 01 283 0515
Email: info@irishdentalassoc.ie

The first correct entry selected will win a Case of Wine worth €150, which has been kindly provided by

Nobel Biocare

This issue's quiz was submitted by:
Dónal McDonnell, BDS, FFD, MSc, FRCD(C), Senior Lecturer Consultant in Oral Radiology, University Dental School and Hospital, Cork.