Chewing gum could cause migraines

Chewing gum can give teenagers headaches, according to a new study. The findings, published in Pediatric Neurology, could help treat countless cases of migraine and tension headaches in adolescents without the need for additional testing or medication. Study author Dr Watemberg asked 30 participants between six and 19 years old who had chronic migraine or tension headaches and chewed gum daily to quit chewing gum for one month. They had chewed gum for at least an hour up to more than six hours per day. After a month without gum, 19 of the 30 patients reported that their headaches went away entirely and seven reported a decrease in the frequency and intensity of headaches. To test the results, 26 of them agreed to resume gum chewing for two weeks. All of them reported a return of their symptoms within days.

Dolphin receives root canal treatment

Dumisa, an eight-year-old dolphin suffering from “general dental abrasion”, has just had root canal treatment, a process that lasted several hours and to which she agreed willingly, without anaesthesia or conscious restraint. The surgery was carried out by a South African dental surgeon. The surgery was complex and required several months of preparation, with Dumisa gradually being taught to get used to the dental instruments.

Toddler dies following dental treatment

A three-year-old girl who suffered brain damage following dental treatment has died. Finley Boyle visited Island Dentistry on 3 December 2013 to undergo root canal treatment on four teeth and fillings in other canals treatment on four teeth and fillings in other canals. The toddler was given anaesthesia and was later diagnosed as suffering from “general dental abrasion”. For Children on 3 December 2013, Finley’s parents have filed a lawsuit against dentist Dr Greyer who carried out the procedures, and other staff at the dental practice.

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News in Brief

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Young Dentists Struggling to Find Jobs

BDA survey claims job shortage for UK dental graduates

More than one in ten young dentists completing their vocational or foundation training may be struggling to get a foothold on the permanent jobs ladder, according to findings from the 2015 BDA Survey of Foundation Dentists and Vocational Dental Practitioners.

A growing proportion of trainees in England and Wales who participated were obtaining posts in primary salaried or hospital dentistry.

This comes as Health Education England and the Centre for Workforce Intelligence predict that there will be an over-supply of between 1,000 and 4,000 dentists in England by 2040 if the current number of dental students is not reduced.

Following a review published in 2004 that predicted a shortfall of practitioners, some dental schools increased student numbers and there was a creation of new postgraduate-entry institutions. Recent years have seen a significant increase in the number of patients accessing NHS dental care as a result; however these new reports suggest that the number of dental student places needs to be reduced.

Dr Judith Husband, Chair of the BDA’s Education, Ethics and Professions Committee, said: “This research suggests that employment opportunities in general dental practice are not as readily available as they once were for newly-qualified practitioners. In doing so, it adds to the evidence base that must be considered as recommendations to reduce the number of places to study dentistry are contemplated.”

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Woman sinks teeth into car door

A woman caused £220 worth of damage after sinking her teeth into a car.

Rhian Jeremiah, (pictured) from Cardigan, west Wales, bit into the frame above the car door following a row with three strangers, according to the Metro.

The attack happened in Aberystwyth in July last year after 26-year-old Jeremiah had been at a memorial night for her boyfriend, who had drowned off the welsh coast.

“Jeremiah approached the occupants of the Fiat at 2am after she had been drinking,” prosecutor Gerald Neave told Aberystwyth magistrates’ court.

“She became aggressive and angry but the three people in the car could not understand what she was saying and drove off. They were parked outside a takeaway restaurant called Lip Lick’n Chick’en when Jeremiah arrived and tried to wrench open the passenger door. She sank her teeth into the car’s frame between the roof and the door.”

David Folland, defending, said the incident was ‘not quite like’ the scene involving the Bond villain Jaws.

Jeremiah was given a 12-month community order and told to attend 20 alcohol abuse help sessions.

Visitors and migrants to be charged for NHS

The government has decided to go ahead with its proposals for new charges to visitors and migrants that it claims are part of its ‘clampdown on abuse of the NHS’.

Overseas visitors and migrants will need to pay for prescriptions. The government is also considering charging for minor surgery that is carried out by a GP and physiotherapy that has been referred through a GP.

They will also pay higher charges for services that are subsidised for patients entitled to free NHS care, such as optical and dental services.

British Medical Association (BMA) council chair Mark Porter said: “It is important that anyone accessing NHS services is entitled to do so.

“However, the government’s current proposals could create unintended drawbacks for the NHS and patients. They are likely to create a complex patchwork of charging and access entitlements where some services remain free, such as GP appointments, while others will be chargeable.”

Health Minister Lord Howe said it was important to make sure the system is fair to the hardworking British taxpayers who fund it.

The government will reveal more information this month and a detailed, costed implementation plan will be published in March 2014.

Glue to mend broken hearts

Researchers have developed a glue that bonds to heart tissue and could be used instead of stitches or staples.

Jeffery Karp from Harvard Medical School invented the glue, along with researchers from Children’s Hospital Boston, Brigham and Women’s Hospital and the Massachusetts Institute of Technology (MIT).

“The process of using nano-technology to create better, longer-lasting dental implants,” said Tolou Shokuhfar, an assistant professor of mechanical engineering. “But there are two main issues that concern dentists: infection and separation from the bone.”

Shokuhfar says implants with a surface made from titanium dioxide nanotubes can battle infection, improve healing, and help dental implants last a lifetime.

“We have done toxicity tests on the nanotubes, and not only did they not kill cells, they encouraged growth,” she said. She has already demonstrated that bone cells grow more vigorously and adhere better to titanium coated with titanium dioxide nanotubes than to conventional titanium surfaces.

The nanotubes can also be a drug delivery system. Shokuhfar’s team loaded titanium dioxide nanotubes with the anti-inflamma-

tory drug sodium naproxen and demonstrated that it could be re-
leased after implant surgery. That assures that the medicine gets where it’s needed, and it reduces the chances of unpleasant side effects that arise when a drug is injected or taken orally. To fight infection, the nanotubes can also be laced with silver nanoparticles.

Shokuhfar and her team have received a provisional patent and are working with two hospitals to develop the technology and li-
cense it.

Future dental implants could be made from nanotubes

A scientist at Michigan Technological University is in the process of using nano-technology to create better, longer-lasting dental implants.

“Dental implants can greatly improve the lives of people who need them,” said Tolou Shokuhfar, an assistant professor of mechanical engineering. “But there are two main issues that concern dentists: infection and separation from the bone.”

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DPAS appoints new Commercial Director

Dean Hallows has been appointed the new Commercial Director of DPAS, which administers practice-branded dental plans for prac-
tices and patients.

Quentin Skinner, Chairman and founder of DPAS, said: “As we continue to offer a range of services supporting the growth of dental practices and with a new NHS contract imminent, we firmly believe that now is the time to invest in the future and that of the practices with which we work in order to meet and exceed the needs of both dentists and patients.”

Den has over 25 years’ business experience within the dental market, most recently representing Dentsply.

Dean said: “I am very much looking forward to working closely with the team and getting more involved with dental practices across the UK. DPAS has an excellent reputation and, with the dental market about to change, I am positive that we are very well placed to support our customers through any transition.”

According to the paper, pub-
lished in the journal Science Translational Medicine, the glue starts off with the viscosity of honey. A doctor can paint it onto a patch, which then re-
pairs a hole in tissue. Once it is in place, the glue molecules work their way between the collagen fibres in the tissue. The surgeon then shines ultraviolet light on the glue, which bonds the molecules, creating strong chains.

The team has tested the glue on pigs and rats, but human trials still need to be conducted before it can be used in the clinic.
Hello and welcome to the first issue of Dental Tribune UK in 2014!

I hope you had a relaxing break over the festive period and have returned to work bursting with enthusiasm and vigour! No? Just me then!

All joking aside January is a great month to take stock of where you are and focus your energies activities that can make a positive difference.

January has already shaped up to be a tumultuous time in dentistry, with the telling lack of mentions in the New Year’s Honours and Awards list for the dental profession; and NHS dental provision thrust into the limelight by an open letter to the Daily Telegraph and subsequent discussions on national breakfast television and online forums across the country about the adequacy of NHS dental provision and whether it is fit for purpose.

I have a feeling this is a subject that will not be going away very soon. Hang on to your hats!

Do you have an opinion or something to say on any Dental Tribune UK article? Or would you like to write your own opinion for our guest comment page? If so don’t hesitate to write to: The Editor, Dental Tribune UK Ltd, 4th Floor, Treasure House, 19-21 Hatton Garden, London, EC1 8BA
Or email: lisa@healthcare-learning.com

PHE supports plain tobacco packaging

In a submission to the independent review into standardised tobacco packaging, Public Health England (PHE) says it believes there is ‘substantial and compelling evidence’ that it will be an effective measure to tackle smoking.

The Independent Review into standardised packaging of tobacco was established by the Secretary of State for Health in November 2013, to report by March 2014. On 16 December 2013 the review published a method statement and invited research-based evidence.

In PHE’s response, it argues that recent literature reviews show that standardised packaging reduces the attractiveness of cigarettes, increases the importance of health messages and increases people’s intention to quit. The evidence also indicates that young people are markedly affected by standardised packaging and will be less likely to buy the product.

Professor Kevin Fenton, PHE’s director of health and wellbeing said: “With nearly one in five adults still smoking, most of whom started as children, smoking remaining the top cause of premature mortality in England. In tackling this challenge, it is vital to develop strategies based on the evidence of what works.

“Public Health England is convinced that standardised packaging is a crucial component of our broader efforts to reduce the incidence and prevalence of smoking, improve the health and wellbeing of children and young people, and reduce premature mortality.”

Woman grows two new teeth after lightning strike

An 87-year-old woman in Croatia grew two new teeth after being struck by lightning when she was 85.

A dentist told Stana Matkovic that the teeth were there but had never erupted, and speculated that stress could be the reason why they have now come out.

Matkovic then revealed to her dentist that a lightning strike had hit her two years ago and she ended up in hospital.

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“Public Health England is convinced that standardised packaging is a crucial component of our broader efforts to reduce the incidence and prevalence of smoking, improve the health and wellbeing of children and young people, and reduce premature mortality.”
Advanced radiation therapy better for head and neck cancer

A n advanced form of radiation therapy may be better for patients with head and neck cancer than standard radiation therapy, according to an analysis published in the journal *Cancer.*

The study establishes so-called intensity-modulated radiation therapy (IMRT) as both a safe and beneficial treatment for patients with head and neck cancer. Radiation can cause significant side effects including dry mouth, difficulty swallowing, and bone destruction. Research has shown that IMRT, an advanced radiation technique that is designed to treat tumours while sparing normal tissues, can cause less dry mouth and dental problems than traditional radiation.

Beth Beadle, from the University of Texas MD Anderson Cancer Center, and her colleagues analysed a large database of patients treated for head and neck cancer at various clinics across the United States.

They found that 84.1 per cent of the patients treated with IMRT had not died from cancer, compared with 66 per cent of patients treated with traditional radiation. Furthermore, all subgroups of patients treated with IMRT had better survival than those treated with traditional radiation.

“This analysis revealed that patients treated with IMRT have less cancer-related deaths than those with traditional techniques. So, not only do they have fewer side effects, but they also have fewer life-threatening recurrences,” said Dr Beadle.

Lidl bans sweets from checkouts

Lidl has banned sweets and chocolate from checkouts at all 600 of its UK stores.

The racks of sweets have now been replaced with dried and fresh fruit, oatcakes and juices, following a trial at the supermarket last year. During the trial, Lidl found that the turnover of the healthy tills was 100 per cent higher than that of the standard tills, with customers responding positively to their arrival in store.

In a survey, Lidl found that seven out of 10 customers would prefer a sweet-free checkout, while 68 per cent of parents were pestered by their children for chocolate at the checkout, with 66 per cent of parents giving in.

Ronny Gottschlich, managing director, Lidl UK, said: “We know how difficult it can be to say no to peer pressure, so by removing sweets and chocolates from our tills we can make it easier for parents to reward children in healthier ways.”

Malcolm Clark, co-ordinator of the Children’s Food Campaign, said: “We congratulate Lidl for making this move and leading the way on removing unhealthy snacks from checkouts. Theonus is now on other supermarkets and retailers to follow suit; and we and the British Dietetic Association will keep up the pressure for them to do so.”

New campaign highlights toxic effect of smoking

Public Health England has launched a new Smokefree Health Harms campaign highlighting the impact and serious damage that smoking causes the body.

The new campaign, supported by TV advertising, brings to life the toxic cycle of dirty blood caused by inhaling the dangerous chemicals in cigarettes, including arsenic and cyanide flowing through the body and damaging major organs. The chemicals move through the heart, the lungs and into the bloodstream, finally damaging cells in the brain.

The new campaign went live as of 30 December 2013 with support and advice available for anyone looking to stop smoking. Anyone looking to quit can visit the smokefree website.

Chief Medical Officer, Professor Dame Sally Davies, said: “We know about the serious effect smoking has on the heart and lungs but smokers need to be aware of just how much potential damage is being done to the brain and other vital organs through toxins in cigarettes entering the blood.

“Smoking is the major cause of premature death, with one in two smokers dying prematurely from smoking related diseases, and it is extremely worrying that people still underestimate the health harms associated with it.

“However, it is not all doom and gloom for smokers looking to quit this New Year. Within five years of stopping smoking, your risk of stroke can be reduced to the same as a lifetime non-smoker.”

Campaigners crack down on sugar in food

A new campaign group has been formed to try and reduce the amount of sugar added to food and soft drinks.

Consensus Action on Salt and Health (Cash), which has pushed for cuts to salt intake since the 1990s, has set up Action on Sugar to help people avoid ‘hidden sugars’ and get manufacturers to reduce the ingredient over time.

According to the BBC, Action on Sugar will set targets for the food industry to add less sugar bit by bit so consumers don’t notice the difference.

Action on Sugar chairman Graham MacGregor said: “We must now tackle the obesity epidemic both in the UK and worldwide.

“This is a simple plan which gives a level playing field to the food industry, and must be adopted by the Department of Health to reduce the completely unnecessary and very large amounts of sugar the food and soft drink industry is currently adding to our foods.”

Associate Medical Director at the British Heart Foundation, Mike Knapton, said: “We need energy to keep us going through the day. But sugars added to foods like fizzy drinks and biscuits contribute to our daily calorie intake without giving us any other nutritional value.

“If manufacturers made small changes to the products we eat everyday it could make a difference to our waistlines. It would need to be combined with other measures to fully address the problem of obesity, but it’s a step in the right direction.”
Two of the UK’s most respected education and academic organisations have joined forces to provide an innovative, technology driven MSc in Restorative and Aesthetic Dentistry. Healthcare Learning Smile-on, the UK’s pre-eminent healthcare education provider and the University of Manchester, one of the top twenty-five universities in the world, have had the prescience to collaborate in providing students with the best of everything – lecturers, online technology, live sessions and support.

The programme is designed to encourage the student to take responsibility for his/her own learning. The emphasis is on a self-directed learning approach. The majority of the learning resources on this programme will be online. The masters will combine interactive distance learning, webinars, live learning and print.

Students will be able to communicate with a diverse multi-ethnic global community of peers, with who they will also share residential get-togethers in fantastic settings around the world.

This innovative programme establishes the academic and clinical parameters and standards for restorative and aesthetic dentistry. Students will leave with a world recognised MSc.

Call Healthcare Learning Smile-on to find out more:
tel: 020 7400 8989 | email: info@healthcare-learning.com
web: www.smile-on.com/msc
A chance to get it right

Richard Lishman encourages you to make financial planning one New Year’s resolution to stick to

As we move through the start of the year, the cheers of the New Year celebrations probably seem a distant memory. The great Oprah Winfrey calls the event “another chance for us to get it right”, and many people will have done the time-honoured commitment of making resolutions – perhaps to lose weight or give up smoking – but by now, many of those well-intentioned pledges will have been broken.

However, one resolution worth making, and sticking to, is ensuring your finances are in order. Financial planning is especially important when you are running a business, whatever the situation. Indeed, it is just as easy for a new company to rush ahead and overlook financial necessities, as it is for an established one to become complacent and lose sight of monetary efficiency.

Planning for the year ahead
The dental practice is no different from any other business and requires the same degree of consideration, and, as the new tax year looms, now is the ideal time to take stock and create that chance to “get it right”.

Maximising your personal and business tax-efficiency is certainly a good place to begin. With the 2013/14 tax year almost over, now is the time to start planning for the year ahead. After all, the tax situation for you and your practice can change over time, so it is important to review all allowances, expenses and exemptions to ensure that each is being utilised to the full.

Points to consider
All salaries and investments are taxable above a certain level, but there are a variety of investment vehicles to choose from that are tax-efficient within the UK, depending on circumstances. This includes the Individual Savings Account (ISA) for individuals, which allows tax-free interest on savings.

Pensions are a hot topic now, especially with the Government’s new Workplace Pension scheme. If you have not already set up a pension scheme for your practice, it will become obligatory for your business. Apart from the obvious end-value to an individual, pensions can also be tax efficient, as contributions attract tax relief not only for the member, but may also do so for the employer if they contribute.
In the main, the dental industry falls outside the scope of VAT; however purchases still attract the tax. With sole traders and partnerships taxed as individuals, it could be time to review the trading structure of your practice.

Insurance is another area to consider. Insurance cover is the foundation of sound financial planning. While life, vehicle and property cover are obviously essential, protecting your income in the event of you being unable to work through sickness, injury or accident, is equally important.

Once your fundamental financial situation is sorted, you may care to think about more advanced forms of investment such as buying and selling shares. These “speculative” products can provide high rewards and offer excellent tax breaks, but they can also be more volatile and represent a high degree of risk.

Specialist advice
Clearly there are many facets to financial planning and it can be a complicated undertaking, fraught with danger for the unwary or inexperienced. If you feel that your finances are getting beyond your capability, or you are looking for more advanced products, it is time to call on a professional for help. The provision of financial advice is strictly regulated in the UK, so all advisers are highly qualified, highly trained individuals, able to look at your situation in an impartial way.

There are various types of financial adviser you can call on. However, only an Independent Financial Adviser (IFA) will be in a position to look across the whole market to find the financial products that best suit your needs. They will look at your financial circumstances as a whole, consider your existing situation, your objectives for the future, and ascertain any existing or potential problems. They will then make suggestions for products based on any gaps they identify in your provision.

Many IFAs will focus on particular industries, so it is important you find an IFA with experience in the dental sector.

Helping you reach your goals
In addition to providing a range of guides to help you manage your own finances, a specialist IFA can also offer a number of other services to help you reach your financial goals. These may include advanced financial planning and debt management through to preparing for retirement. They can advise on matters such as mortgages and loans, investments, and tax efficiency, and help you make the most of your money.

Financial planning is important at any time, but the New Year can give you the impetus you need to “set it right”. Taking stock of your situation makes good business sense, and with the support of an IFA, especially one that specialises in your industry, you can be confident you are making the best decisions for the year ahead.

‘Financial planning is important at any time, but the New Year can give you the impetus you need to “get it right’

Author Bio
Richard T Lishman of money4dentists, which are a specialist firm of Independent Financial Advisers who help dentists across the UK manage their money and achieve their financial and lifestyle goals.

For more information please call 0845 580 5060 or email info@money4dentists.com www.money4dentists.com

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Buying a dental practice – everything you need to know

A series of articles by Jon Drysdale. Part one – How to make the bank manager like you!

If you plan to borrow money to buy a dental practice put yourself in your bank manager’s shoes. How will they view you as an applicant?

Most banks have a checklist of attributes that make up the ‘ideal’ borrower. Typically, associates won’t meet all these criteria. However, present yourself as strongly as possible and overcome your weaknesses as a prospective borrower where possible.

When did you qualify?

This is one aspect of your personal profile that you can’t change. While banks don’t require a minimum number of years post-qualification it is likely they will expect you to have at least three to five years of experience in practice. Associates without this may struggle to convince the banks that they have the track record of personal performance to take on the principal’s role.

This also applies to a dentist who intends to move from a salaried post straight into practice ownership, regardless of their experience. So, if you are recently qualified (within three years of FD), gaining another couple of years at the practice ‘coal face’ is a good idea.

Do you have the right professional experience?

The ‘wrong’ kind of experience in dentistry can detract from the strength of your application. For example, you may be thinking of buying an NHS practice with a challenging UDA requirement, in which you intend to perform personally. If your past experience is in private dentistry the bank may question your ability to meet the UDA target.

Likewise, if you plan to take over a personal UDA target significantly higher than you’ve been working to, the bank will ask how you intend to achieve this. In some circumstances this can be explained. You may, for example, be able to reassure the bank that you can work additional days to fulfil the UDA requirement at the new practice. It is important to offer this reassurance to the bank before they ask – to demonstrate your pragmatism.

How are your management skills?

A dental practice is now a complex business with practice owners performing regulatory, legal and personnel functions as well as dentistry. Demonstrating experience in these areas will strengthen your financial application. There are plenty of management and leadership CPD opportunities within dentistry and you should research the options available.

Do your clinical skills fit the new practice?

A strong CV is essential, especially if your target practice requires specific clinical skills to maintain turnover. The bank will examine this, particularly where the new practice has an income stream from a specialist area of dentistry. If your strating experience in these areas will strengthen your financial application. There are plenty of management and leadership CPD opportunities within dentistry and you should research the options available.

As I said, banks prefer to lend to individuals with several years post-qualifying experience. In part this is because several years of financial information such as associate accounts will need to support your application. Financial information in the form of personal bank statements and pay slips from your current practice will demonstrate the consistency of your fee income and your financial solvency.

What security can you offer the bank?

I am often asked what level of deposit the bank will expect when lending for a practice purchase. There is no straight answer to this other than the likelihood that they will not usually lend 100 per cent on goodwill and equipment. You should expect to offer between 10 per cent and 20 per cent of the goodwill and equipment value by way of cash deposit or alternative security. Banks may lend 100 per cent of the freehold value of the property, which will be used as security.

Alternative security is usually in the form of a residential property, which involves placing a ‘second charge’ on your main residence. This may be a problem if your main residence is jointly owned because the joint owner will need to be party to the arrangement and the bank will insist they take legal advice (at your expense).

The bank will write down the value of your property by 50 per cent before calculating the amount of security available.

For example, if you have a residential property valued at £500,000, the written down value would be £210,000 less any outstanding mortgage. This may leave little in the way of actual security for the bank to take a charge over.

Borrowing in the name of a limited company doesn’t generally remove personal financial risk. If the bank agrees to lend to a limited company, of which you are a director, they will expect you to provide personal guarantees. In short, if the company defaults on the loan you will be personally liable for repayment of the debt.

Next I will cover finding a practice, ownership options and valuing goodwill.

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As I said, banks prefer to lend to individuals with several years post-qualifying experience. In part this is because several years of financial information such as associate accounts will need to support your application. Financial information in the form of personal bank statements and pay slips from your current practice will demonstrate the consistency of your fee income and your financial solvency.

What security can you offer the bank?

I am often asked what level of deposit the bank will expect when lending for a practice purchase. There is no straight answer to this other than the likelihood that they will not usually lend 100 per cent on goodwill and equipment. You should expect to offer between 10 per cent and 20 per cent of the goodwill and equipment value by way of cash deposit or alternative security. Banks may lend 100 per cent of the freehold value of the property, which will be used as security.

Alternative security is usually in the form of a residential property, which involves placing a ‘second charge’ on your main residence. This may be a problem if your main residence is jointly owned because the joint owner will need to be party to the arrangement and the bank will insist they take legal advice (at your expense).

The bank will write down the value of your property by 50 per cent before calculating the amount of security available.

For example, if you have a residential property valued at £500,000, the written down value would be £210,000 less any outstanding mortgage. This may leave little in the way of actual security for the bank to take a charge over.

Borrowing in the name of a limited company doesn’t generally remove personal financial risk. If the bank agrees to lend to a limited company, of which you are a director, they will expect you to provide personal guarantees. In short, if the company defaults on the loan you will be personally liable for repayment of the debt.

Next I will cover finding a practice, ownership options and valuing goodwill.

‘Most banks have a checklist of attributes that make up the ‘ideal’ borrower’

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References:
1. Bleeding Index Reduction GDF 1 – 2013 (AE0840001). 50.9% reduction in whole-mouth mean Bleeding Index at 4 weeks.
2. GDF 2 – 2013 (DWINLT0004).
NECD/13-0340a

Advanced Defence against gum disease
How safe are you?

Jane Armitage discusses practice security after her first-hand experience

Earlier this year we had a break-in at the Practice. Luckily they only took the charity box, however recently they returned. This time it was rather bizarre.

Our security, I would have thought, was good, but not good enough for anyone with determination. They entered the building by taking a metal frame surrounding the metal shutter, this enabled them to take the shutter off and leave in the car park, so that was rather kind as they could have weighed it in.

They next managed to get through a wood and metal door with three five-lever mortise locks fitted, and entered the building to be met by another door encased in metal. That was no problem to them; this time it was rather bizarre.

‘Our security, I would have thought, was good, but not good enough for anyone with determination’

They led to the Reception area where they managed to dismantle the intruder alarm and leave in pieces. Although we pay for an alert should the alarm activate, two of the partners were abroad and my mobile battery had depleted, so some use that was.

No money was taken but they had destroyed my office including kicking the door in, which brought the architrave down. It was a total mess; paper strewn everywhere, units damaged, some spare keys and paperwork missing. My laptop had been taken, luckily I had backed the computer up and I believe in paper trails so what I hadn’t backed up the paper trail enabled me to re-input.

The computer was encrypted and we follow data security policies; I informed the ICO only to receive an email informing me that a case officer will be in touch shortly. They got in touch after two months. What is the point in having protocols which are compulsory to abide when the first time you need to follow procedure nothing timely happens? Some managers may not even have thought of this as the correct protocol to follow; it’s not something you give daily thought to.

These intruders walked past several laptops and computers and left them, but what they did take was two diplomas: my diploma in Dental Practice Management was taken off the wall plus the Hygienist Diploma taken from her locked personnel file. All personnel files were locked and all had fingerprints on, so I don’t know what they were looking for. I would have thought this could have been an identity theft however the police have said not.

Even the surgeries had been affected; one dental unit requires replacement as it appears they may have tripped over the foot pedal and fallen into the bracket table, making it inoperable. A great hand print was found here, but gloved.

No excessive items were found here, but gloved. Although there were not excessive items taken, it appears that the target was aimed primarily at the Manager’s office. Taking the laptop could have brought us to a halt if it hadn’t have been backed up and encrypted. This could have destroyed years of practice management work; the laptop was the hub of the business.

You never think that in a space of 20 minutes an intrusive act of theft could destroy what has taken years to build up.

It has also made us look at our method of contact should the alarm sound again.

One disturbing comment was said to me and the statement was “usually when a crime like this has been committed it happens again a few months later, knowing that the items will have been replaced.”

I urge you all to ensure you have a form of back up and to look at your security level. Things like this were never heard of, but it is the times we live in where nothing is safe and despite how secure you think you are it’s never enough.

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Single molar restoration — Wide implant versus two conventional

Prof Amr Abdel Azim, Dr Amani M Zaki & Dr Mohamed I El-Anwar

The single-tooth restoration has become one of the most widely used procedures in implant dentistry. In the posterior region of the oral cavity, bone volume and density are often compromised. Occlusal forces are greater in this region and, with or without parafunctional habits, can easily compromise the stability of the restorations (Fig. 1). Wider-diameter implants have a genuine use in smaller molar spaces (8.0 to 11.0mm) with a crestal width greater than or equal to 8mm (Fig. 4 a). Clinical parameters governing the proposed restoration should be carefully assessed in light of the availability of implants and components that provide a myriad of options in diameter, platform configurations and prosthetic connections. Many of the newer systems for these restorations are showing promising results in recent clinical trials. It has further been suggested by Davarpanah and others, Balshi and others, English and others and Bahat and Handelsman that the use of multiple implants may be the ideal solution for single-molar implant restorations (Figs. 4 b & c). Moscovitch suggests that the concept of using 2 implants requires the availability of a strong and stable implant having a minimum diameter of 3.5 mm. Additionally, the associated prosthetic components should ideally not exceed this dimension.

Finite element analysis (FEA) is an engineering method that allows investigators to assess stresses and strains within a solid body. FEA provides calculation of stresses and deformations of each element alone and the net of all elements. A finite element model is constructed by breaking a solid object into a number of discrete elements that are connected at common nodal points. Each element is assigned appropriate material properties that correspond to the properties of the structure to be modelled. Boundary conditions are applied to the model to stimulate interactions with the environment. This model allows simulated force application to specific points in the system, and it provides the resultant forces in the surrounding structures. FEA is particularly useful in the evaluation of dental prostheses supported by implants. Two models were subjected to FEA study.
Material and Methods

Three different parts were modelled to simulate the studied cases: the jaw bones, implant/abutment assembly, and crown. Two of these parts (jaw bone and implant/abutment) were drawn in three dimensions by commercial general purpose CAD/CAM software "AutoDesk: Inventor" version 8.0. These parts are regular, symmetric, and its dimensions can be simply measured with their full details.

On the other hand, crown is too complicated in its geometry therefore it was not possible to draw it in three dimensions with sufficient accuracy. Crown was modelled by using three-dimensional scanner, Roland MDF-X, to produce cloud of points or triangulations to be trimmed before using in any other application.

The second phase of difficulty might appear for solving the engineering problem, is importing and manipulating three parts: one scanned and two modelled or drawn parts on a commercial FE package. Most of CAD/CAM and graphics packages deal with parts as shells (outer surface only). On the other hand the stress analysis required in this study is based on volume of different materials. Therefore set of operations like cutting volumes by the imported set of surfaces in addition to adding and subtracting volumes can ensure obtaining three volumes representing the jaw bone, implant/abutment assembly, and crown.

Bone was simulated as cylinder that consists of two parts. The inner part represents the spongy bone (diameter 14mm and height 22mm) that filling the internal space of the other part (shell of 1mm thickness) that represents cortical bone (diameter 16mm and height 24mm). Two implants were modelled one of 3.7mm diameter and the other of 6.0mm. The implants/abutment design and geometry were taken from Zimmer dental catalogue (Fig. 5).

Linear static analysis was performed. The solid modelling and finite element analysis were performed on a personal computer Intel Pentium IV, processor 2.8 GHz, 1.0 GB RAM. The meshing software was ANSYS version 9.0 and the used element in meshing all three dimensional model is eight-node brick element (SOLID 45), which has three degrees of freedom (translations in the global directions). Listing of the used materials in this analysis is found in Table 1. The two models

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were subjected to 120 N vertical load equally distributed (20 N on six points) to simulate the occlusion; one on each cusp and one in the central fossa). On the other hand, the base of the cortical bone cylinder was fixed in all directions as a boundary condition.**

**Results and Discussion**

Results of FEA showed a lot of details about stresses and deformations in all parts of the two models under the scope of this study. Figures 6a & b showed a graphical comparison between the crowns of the two models which are safe under this range of stresses (porcelain coating, gold crown, and implants showed the same ranges of safety). No critical difference can be noticed on these parts of the system. All differences might be found are due to differences in supporting points and each part volume to absorb load energy (equation 2).**

Generally a crown placed on two implants is weaker than the same crown placed on one implant. This fact is directly reflected on porcelain coating and the two implants that have more deflections. Comparing wide implant model with the two implants from the geometrical point of view it is simply noted that cross sectional area was reduced by 45.3 per cent while the side area increased by 6.5 per cent. Using one implant results as a reference in a detailed comparison between the two models by using equation (1) resulted in Table 2 for porcelain coating, gold crown, implant(s), spongy and cortical bones respectively.

Difference % = [(One implant Result—Two implants Result) × 100] / One implant Result...

Spongy bone deformation and stresses (Table 2) seems to be the same in the two cases. Simple and fast conclusion can be taken that using one wide implant is equivalent to using two conventional implants. On the other hand a very important conclusion can be exerted that, under axial loading, about 10 per cent increase in implant side area can overcome reduction of implant cross section area by 50 per cent. In other words, effectiveness of increasing implant side area might be five times higher than the increasing of implant cross section area on spongy bone stress level under axial loading. Starting from Figures 7a & b, slight differences can be noticed on spongy bone between the two models results. The stresses on the spongy bone are less by about five per cent in the two implants model than the one wide diameter implant. The exceptions are the relatively increase in maximum compressive stresses and deformations of order 12 per cent and 0.5 per cent respectively.

The bone is known to respond

The stresses on the spongy bone between the two models results. The stresses on the spongy bone are less by about five per cent in the two implants model than the one wide diameter implant. The exceptions are the relatively increase in maximum compressive stresses and deformations of order 12 per cent and 0.5 per cent respectively.

Conclusions

This study showed various results between cortical and spongy bone. It was expected that the maximum stresses in the cortical bone was placed in the weak area between the two implants. In addition to be higher than the case of using one wide implant. Although the middle part of spongy bone was stressed to the same level in the two cases, using two implants resulted in more volume of the spongy bone absorbed

---

**Table 1**

<table>
<thead>
<tr>
<th>Material</th>
<th>Poisson's ratio</th>
<th>Young’s modulus MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coating (porcelain)</td>
<td>0.3</td>
<td>67,200</td>
</tr>
<tr>
<td>Restoration (gold)</td>
<td>0.3</td>
<td>98,000</td>
</tr>
<tr>
<td>Implants (Titanium)</td>
<td>0.35</td>
<td>119,000</td>
</tr>
<tr>
<td>Spongy bone</td>
<td>0.3</td>
<td>150</td>
</tr>
<tr>
<td>Cortical bone</td>
<td>0.26</td>
<td>1,500</td>
</tr>
</tbody>
</table>

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the load energy** which led to reduction of stress concentration and rate of stress deterioration by moving away from implants. That is considered better distribution of stresses from the mechanics point of view, which may result in longer lifetime. Porcelain coating showed less stress in case of two implants, longer life for the brittle coating material is expected.

Contrarily more stresses were found on the gold crown placed on two implants due to its volume reduction (less material under the same load). That is clearly seen in increasing stresses on the two implants, that more load effect was transferred through the weak crown to the two implants. That showed maximum stresses in the area under the crown, while the wide implant showed maximum stresses at its tip. Looking to energy** absorption and stress concentration on whole system starting from coating to cortical and spongy bone, although the stress levels found was too low and far from cracking danger, the following conclusions can be pointed out: the total results favour the two implants in spongy bone and the wide implant in the cortical layer, but the alveolar bone consists of spongy bone surrounded by a layer of cortical bone. It’s also well known that according to the degree of bone density the alveolar bone is classified to D1,2,3,4 23 in a descending order.

So, provided that the edentulous space after the molar extraction permits, it’s recommended in the harder bone quality (D1,2) to use one wide diameter implant and in the softer bone (D3,4) quality two average sized implants. Therefore more detailed study to compromise between the two implants size/design and intermediate space can put this stress values in safe, acceptable, and controllable region under higher levels of loading.

**The area under the _ curve up to a given value of strain is the total mechanical energy per unit volume consumed**

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**The area under the ___ curve up to a given value of strain is the total mechanical energy per unit volume consumed**

Summary
_restoration of single molar using implants encounters many problems; mesio-distal cantilever due to very wide occlusal table is the most prominent. An increased occlusal force posteriorly worsens the problem and increases failures. To overcome the overload, the use of wide diameter implants or two regular sized implants were suggested. The aim of this study was to verify the best solution that has the best effect on alveolar bone under distributed vertical loading. Therefore, a virtual experiment using Finite Element Analysis was done using ANSYS version 9. A simplified simulation of spongy and cortical bones of the jaw as two co-axial cylinders was utilised. Full detailed with high accuracy simulation for implant, crown, and coating was implemented. The comparison included different types of stresses and deformations of both wide implant and two regular implants under the same boundary conditions and load application.

The three main stresses compressive, tensile, shear and the equivalent stresses in addition to the vertical deformity and the total deformities were considered in the comparison between the two models. The results were obtained as percentages using the wide implant as a reference. The spongy bone showed about five per cent less stresses in the two implants model than the one wide diameter implant. The exceptions are the relatively increase in maximum compressive stresses and deformations of order 12 per cent and 0.3 per cent respectively.

The stresses and displacements on the cortical bone are higher in the two implant model due to having two close holes, which results in weak area in-between. The spongy bone response to the two implants was found to be better considering the stress distribution (energy absorbed by spongy bone**). Therefore, it was concluded that, using the wide diameter implant or two average ones as a solution depends on the case primarily. Provided that the available bone width is sufficient mesio distally and buccally, the choice will depend on the type of bone. The harder D1,2 types having harder bone quality and thicker cortical plates are more convenient to the wide implant choice. The D3,4 types consist of more spongy and less cortical bone, are more suitable to the two implant solution.

*About the author
Prof. Amr Abdel Azim
Professor, Faculty of Dentistry, Cairo University
drazim@link.net
Dr Amani M. Zaki
GBOI. 2009, Egypt
amani.m.zaki@gmail.com
Dr Mohamed I. El-Anwar
Researcher, Mechanical Engineering Department, National Research Center, Egypt
anwar_eg@yahoo.com

**Editorial note: A complete list of references is available from the author.**
Time proven clinical success of the SHORT™ implant

Prof Dr Mauro Marincola, MDS Angelo Paolo Perpetuini, Dr Stefano Carelli, Prof G. Lombardo & Dr Vincent Morgan

In 1892, Julius Wolff, a German surgeon, published his seminal observation that bone changes its external shape and internal, cancellous architecture in response to stresses acting on it (Wolff’s law of bone modelling and remodelling). Therefore, it is a significant engineering challenge to design a short implant that biocompatibly transfers occlusal forces from its prosthetic restoration to the surrounding bone. It requires the understanding and application of many basic biological, mechanical, and metallurgical principles. It is paramount that the entire design of a SHORT™ implant optimises the effectiveness of each of its features within the implant’s available surface area and length. Clinical success cannot be met by any single implant design feature such as surface area, but rather requires the appropriate integration of all of its features.

Since an implant’s design dictates its clinical and mechanical capabilities, it is scientifically approved that bone healing around a plateau-designed implant is different than the appositional bone around threaded implants. The plateaued, tapered and root-formed implant body provides for 30 per cent more surface area than comparably-sized threaded implants. But more importantly, the plateaus provide for an intra-membranous-like and faster bone formation (20–50 microns per day), resulting in a unique Haversian bone with clinical capabilities different from the slower forming (1–5 microns per day) of appositional bone around threaded implants. Additionally, the plateaus provide for the transfer of compressive forces to the bone throughout the entire implant.

Therefore, it is a significant engineering challenge to design a short implant that biocompatibly transfers occlusal forces from its prosthetic restoration to the surrounding bone.

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proven short implant on the market that was called the Driskol Precision Implant in the early 1980s, than Stryker and the Bicon Dental Implant from 1993 (Boston, USA).

The Bicon implant has a bacterially-sealed 1.5° locking taper (galling or cold welding) connection between the abutment and implant, with the ability for 360° of universal abutment positioning. Having a bacterially-sealed connection eliminates the bacterial flux associated with clinical odours and tastes and reduces inflammation and bone loss consistently.

Another unique characteristic is the sloping shoulder that facilitates the appropriate transfer of occlusal loads to the bone when positioned below the bony crest. But more practically, the sloping shoulder facilitates aesthetic implant restorations, for it provides space for the interdental papillae with bony support even when an implant is contiguous to another implant or tooth. The sloping shoulder design has been, since 1985, the basis of a sensible biological width and the origin of platform switching.

The 360° of universal abutment positioning provides for the extra-oral cementation of crowns; the use of the cementless and screwless Integrated Abutment Crown (IAC™), the intraoral bonding of fixed bridges, which eliminates the need for cutting, indexing and soldering of bridge frameworks, multiple and easy removal of abutments over time; and the slight aesthetic rotational adjustments during and prior to the seating of a restoration.

Clinical long-term results
In the following long-term case description we can observe the stability of the crestal bone around the sloping shoulder of the plateau implant. Clinically, the soft tissue contour around the Integrated Abutment Crowns indicates a healthy and stable epithelial tissue.

The single-tooth implant is a viable alternative for single tooth replacement.8 Single-tooth replacement with endosseous implants has shown satisfactory clinical performance in different jaw locations. Minimal or no crestal bone resorption is considered to be an indicator of the long-term success of implant restorations. Mean crestal bone loss ranging from 0.12-0.20mm has been reported one year after the insertion of single-tooth implant restorations.9 After the first year, an additional 0.01mm to 0.11mm of annual crestal bone loss has been reported on single-tooth implant restorations. Some implants demonstrate no crestal bone loss and/or crestal bone gain after insertion of definitive restorations.10

Crestal bone gain has been documented on immediate and early loaded implants with a chemically modified surface after one year of follow up.11 A six-year prospective study reported that 45.8 per cent of splinted Morse taper implants experienced some bone gain.12 Crestal bone gain has been documented around immediately loaded Bicon implants.13 The factors that lead to peri-implant bone gain in different
implant designs have not been investigated. It would be beneficial for the dental practitioner to understand what factors are associated with crestal bone gain on single-tooth implants after crown insertion. Radiographic long-term control also as a clinical observation of the soft tissue structures surrounding the abutment emergence profile can provide the clinician with a better understanding of an implant’s bone/soft tissue stability (Figs 1–12).

The ideal scenario in modern implant dentistry would be the implant replacement for every missing single tooth (Figs 15&14). The single tooth replacement guarantees good aesthetics, consequently to the fact that a single crown that follows all criteria of a natural-looking soft tissue emergence profile can support the soft tissue in order to recreate papillary anatomy.

Another important aspect of single crown restorations on implants is that the patient can follow a better oral hygiene compared to bridgeworks. Nevertheless, bridgeworks are commonly used as alternatives to single tooth replacement. The reasons are multifactorial, with the cost benefit factor at first place (Figs 15&16). Another significant facet is the atrophic bone situation of the patient, were complicated and expensive bone graft procedures are needed before even thinking of placing single implants.

Alternatively to sophisticated and expensive bridge works (Figs 17&18), cost-effective and simple prosthetic techniques were developed in the last years. One of these techniques, the Fixed on SHORT™, allows to provide the patients with bone atrophies or partial bone deficiencies with a fixed, metal free prosthetic that can be supported by four to six short implants (Figs 19–22).

Conclusion
In this short and synthetic article, the authors like to show the variety of treatment options when implants and prosthetic materials are used with the criteria of long-term crestal bone preservation, recreation and long-term stabilisation of the biological width around the implant/crown and the use of short- and ultra-

Figure 21
Figure 22

‘The ideal scenario in modern implant dentistry would be the implant replacement for every missing single to’

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Stem cells in implant dentistry

Dr André Antonio Pelegrine

The human body contains over 200 different types of cells, which are organised into tissues and organs that perform all the tasks required to maintain the viability of the system, including reproduction. In healthy adult tissues, the cell population size is the result of a fine balance between cell proliferation, differentiation, and death. Following tissue injury, cell proliferation begins to repair the damage. In order to achieve this, quiescent cells (dormant cells) in the tissue become proliferative, or stem cells are activated and differentiate into the appropriate cell type needed to repair the damaged tissue. Research into stem cells seeks to understand tissue maintenance and repair in adulthood and the derivation of the significant number of cell types from human embryos.

It has long been observed that tissues can differentiate into a wide variety of cells, and in the case of blood, skin, and the gastric lining the differentiated cells possess a short half-life and are incapable of renewal.

Not only can stem cells be isolated from both adult and embryo tissues; they can also be kept in cultures as undifferentiated cells. Embryo stem cells have the ability to produce all the differentiated cells of an adult. Their potential can therefore be extended beyond the conventional mesodermal lineage to include differentiation into liver, kidney, muscle, skin, cardiac, and nerve cells (Fig 2).

The recognition of stem cell potential unearthed a new age in medicine: the age of regenerative medicine. It has made it possible to consider the regeneration of damaged tissue or an organ that would otherwise be lost. Because the use of embryo stem cells raises ethical issues for obvious reasons, most scientific studies focus on the applications of adult stem cells. Adult stem cells are not considered as versatile as embryo stem cells because they are widely regarded as multipotent, that is, capable of giving rise to certain types of specific cells/tissues only, whereas the embryo stem cells can differentiate into any types of cells/tissues. Advances in scientific research have determined that some tissues have greater difficulty regenerating, such as the nervous tissue, whereas bone and blood, for instance, are considered more suitable for stem cell therapy.

In dentistry, pulp from primary teeth has been thoroughly investigated as a potential source of stem cells with promising results. However, the regeneration of an entire tooth, known as third dentition, is a highly complex process, which despite some promising results with animals remains very far from clinical applicability. The opposite has been observed in the area of jawbone regeneration, where there is a higher level of scientific evidence for its clinical applications. Currently, adult stem cells have been harvested from bone marrow and fat, among other tissues.

Bone marrow is haematopoietic, that is, capable of producing all the blood cells. Since the 1950s, when Nobel Prize winner Dr E Donnall Thomas demonstrated the viability of bone marrow transplants in patients with leukaemia, many lives have been saved using this approach for a variety of immunological and haematological conditions.

‘Research into stem cells seeks to understand tissue maintenance and repair in adulthood and the derivation of the significant number of cell types from human embryos’
opoietic illnesses. However, the bone marrow contains more than just haematopoietic stem cells (which give rise to red and white blood cells, as well as platelets, for example); it is also home to mesenchymal stem cells (which will become bone, muscle and fat tissues, for instance; Fig 3).

Bone marrow harvesting is carried out under local anaesthesia using an aspiration needle through the iliac (pelvic) bone. Other than requiring a competent doctor to perform such a task, it is not regarded as an excessively invasive or complex procedure. It is also not associated with high levels of discomfort either intra or post-operatively (Figs 4a&b).

Bone reconstruction is a challenge in dentistry (also in orthopaedics and oncology) because rebuilding bony defects caused by trauma, infections, tumours or dental extractions requires bone grafting. The lack of bone in the jaws may impede the placement of dental implants, thus adversely affecting patients' quality of life. In order to remedy bone scarcity, a bone graft is conventionally harvested from the chin region or the angle of the mandible. If the amount required is too large, bone from the skull, legs or pelvis may be used. Unlike the process for harvesting bone marrow, the process involved in obtaining larger bone grafts is often associated with high levels of discomfort and, occasionally, inevitable post-operative sequelae (Figs 5a–c).

The problems related to bone grafting have encouraged the use of bone substitutes (synthetic materials and bone from human or bovine donors, for example). However, such materials show inferior results compared with autologous bone grafts (from the patient him/herself), since they lack autologous proteins. Therefore, in critical bony defects, that is, those requiring specific therapy to recover their original contour, a novel concept to avoid autologous grafting, involving the use of bone-sparing material combined with stem cells from the same patient, has been gaining ground as a more modern philosophy of treatment. Consequently, to the detriment of traditional bone grafting (with all its inherent problems), this novel method of combining stem cells with mineralised materials uses a viable graft with cells from the patient him/herself without the need for surgical bone harvesting.

Bone reconstruction is a challenge in dentistry (also in orthopaedics and oncology) because rebuilding bony defects caused by trauma, infections, tumours or dental extractions requires bone grafting.

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Until recently, no studies had compared the different methods available for using bone marrow stem cells for bone reconstruction. In the following paragraphs, I shall summarise a study conducted by our research team, which entailed the creation of critical bony defects in rabbits and subsequently applying each of the four main stem cell methods used globally in order to compare their effectiveness in terms of bone healing.1

- fresh bone marrow (without any kind of processing)
- a bone marrow stem cell concentrate
- a bone marrow stem cell culture
- a fat stem cell culture (Figs 6&7).

In a fifth group of animals, no cell therapy method (control group) was used. The best bone regeneration results were found in the groups in which a bone marrow stem cell concentrate and a bone marrow stem cell culture were used, and the control group showed the worst results. Consequently, it was suggested that stem cells from bone marrow would be more suitable than those from fat tissue for bone reconstruction and that a simple stem cell concentrate method (which takes a few hours) would achieve similar results to those obtained using complex cell culture procedures (which take on average three to four weeks; Figs 11a–h).

Evidently, although bone marrow stem cell techniques for bone reconstruction are very close to routine clinical use, much caution must be exercised before indicating such a procedure. This procedure requires an appropriately trained surgical and laboratory team, as well as the availability of the necessary resources (Figs 11a–h, taken during laboratory manipulation of marrow stem cells at São Leopoldo Mandic dental school in Brazil).2

All images courtesy of Células Tronco em Implantodontia.2

About the author

Dr André Antonio Pelegrine is a specialist dental surgeon in periodontology and implant dentistry (CFO) with an MSc in Implant Dentistry (UNISA), and a PhD in clinical medicine (University of Campinas). He completed postgraduate research in transplant surgery (Federal University of São Paulo). He is an associate lecturer in implant dentistry at São Leopoldo Mandic dental school and coordinator of the post-graduate dentistry-implant dentistry team at the University of Campinas in Brazil. He can be contacted at pelegrineandre@gmail.com.
Case Report: A large leaf fibroma

Anna Maxwell and Nick Grey from the University of Manchester Dental Hospital discuss the diagnosis and treatment of large leaf fibromas

Leaf fibromas are pink, fibrous, pedunculated lesions that have been flattened against the palate by a denture. Treatment involves surgical excision followed by construction of a new, close-fitting denture. Leaf fibromas can be a source of anxiety for patients, even when they have been present for many years. The differential diagnosis can include giant cell lesions, phoenician granulomas and malignancy. Therefore it is essential that histopathological examination is carried out to confirm the diagnosis.

Introduction

Soft tissue pathologies associated with dentures include infections, reactions to the denture materials and mechanical injury.1 Chronic atrophic candidiasis, also known as denture stomatitis, is a common condition that affects the palatal mucosa of denture wearers. It is often caused by a candidal infection secondary to unsatisfactory dental hygiene and ill-fitting dentures.2 Xerostomia and some systemic conditions, including HIV (human immunodeficiency virus), will further predispose patients to candidiasis.1 Allergic reactions to denture material constituents do occur but is considered rare. The burning sensation perceived as an allergic reaction is more commonly caused by mechanical irritation.1 Traumatic ulcers in denture wearers can be caused by overextensions or uneven occlusal loading.2 This can be relieved by adjustments to the denture. It has been reported that chronic injury from dentures can predispose patients to oral carcinomas thus emphasising the importance of regular dental reviews for denture wearers.3

Ill-fitting or over-extend-ed dentures that have been worn for many years can cause benign hyperplastic fibrous growths or epulides.4,5 These are more common with mandibular dentures.6 These growths are usually firm with little inflammation, and sometimes have ulceration at the base of the epulis where it meets the denture.4,1 If the growth occurs as a result of irritation by the border of a denture, it is known as epulis fissuratum, granuloma fissuratum or denture-irritation hyperplasia.4,6,7 These lesions can vary in size and may be erythematous and ulcerated.1 When the fibrous epulis forms underneath the palate of the denture, it is known as a leaf fibroma.8

Leaf fibromas are painless, pink and lobulated epulis flattened against the palate by a denture.7 They have a pedicle attachment to the underlying mucosa, which can be singular or multiple and are more common in women.4,5 Treatment is by conservative surgical removal and construction of new dentures.4 Long standing leaf fibromas will have a well-developed blood supply and prior to surgical removal consideration should be given to haemostasis.4,5 Whilst altering the denture may decrease the size of the lesion, due to the dense nature of the scar tissue, adjustment alone will not cause complete regression.7

Case Report

A 54 year old female patient was referred to the Department of Restorative Dentistry at the University of Manchester Dental Hospital by her General Dental Practitioner. She attended complaining of a “dangly bit” in her palate that had been present for approximately five years. The lesion was not painful but interfered with her upper complete denture which she had been wearing for approximately 15 years.

The patient’s medical history included depression, hypertension, hyperlipidaemia, arthritis, asthma and rhinitis. She was taking a polypharmacy of fluoxetine, felodipine, bendroflumethiazide, simvastatin, naproxen, salbutamol, beclomethasone, loratidine, citrizine, omeprazole and prednoral. The patient had hayfever, dust allergy and was allergic to septin.

On examination there was a large, pink, pedunculated soft tissue lesion in the patient’s palate, as shown in Figure 1.

The lesion was excised and histopathological examination confirmed the clinical diagnosis of a leaf fibroma. A new set of dentures were subsequently constructed by the patient’s general dental practitioner.

Discussion

The histopathology of leaf fibromas includes dense irregular connective tissue fibres, covered by epithelium which is usually hyperplastic.8 Although classic in appearance, histopathology examination should be carried out to exclude giant cell lesions, phoenicians granulomas and malignancy.9 A case has been reported in the literature of a patient who presented with a lesion resembling a leaf fibroma but on biopsy was shown to be a malignant melanoma.9 Primary intra oral malignant melanoma is rare but has a poor prognosis compared with presentation on the skin, thus illustrating the importance of confirming the diagnosis.8

Small leaf fibromas could easily be missed and this case demonstrates how, if left for some time, they can increase in size and become a source of anxiety for patients.9 There are many presentations of intra oral malignancies, some with a benign appearance, thus a diagnosis of leaf fibroma should always be confirmed.

Case Report: A large leaf fibroma

Anna Maxwell BDS MFDSRCSEd
Career Development Post, University of Manchester Dental Hospital

Professor Nick Grey BDS MDSc PhD
Honorary Consultant in Restorative Dentistry, University of Manchester Dental Hospitals

Author Bio

Anna Maxwell BDS MFDSRCSEd
Career Development Post, University of Manchester Dental Hospital

Professor Nick Grey BDS MDSc PhD
Honorary Consultant in Restorative Dentistry, University of Manchester Dental Hospitals

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