Sound Bite

ISSUE 07

THE COST OF PERFECTION

IT'S A BILLION POUND INDUSTRY IN THE UK, BUT WHAT ARE THE CLINICAL RISKS OF COSMETIC DENTISTRY?

ALSO INSIDE

AN **MDDUS** PUBLICATION

PHOTO: ROSLYN GAUNT

Welcome to your SoundBite

SOCIAL media is an increasingly important part of our personal and professional lives, with more and more details shared online. But while it may be acceptable for some to post any photo or comment they like, dentists must meet appropriate standards of personal behaviour both on and off-duty. MDDUS dental adviser Claire Renton offers advice on avoiding trouble on **page 5**.

When a patient sits in the dental chair and opens their mouth for a check-up, it's safe to say they are consenting to treatment. But what level of treatment can be performed? Our article on **page 4** explores the issue of implied consent. Treating children can be a rewarding, if not challenging, experience that requires good communication skills. Dentist Stuart Davidson and VDP Michael Dhesi have top tips and techniques on **page 10**.

Life is never dull for Scottish International Rugby squad dentist Fiona Davidson who regularly deals with needle phobias and anaesthesia issues in this formidable patient group. Alan MacDermid finds out more in his profile on **page 6**. Dental and maxillofacial radiology offers a career at the cutting edge of both dentistry and digital imaging technology. Find out more about the opportunities available on **page 8**.

Cosmetic dentistry is a billion pound industry in the UK but it brings a number of practical difficulties. MDDUS dental adviser Doug Hamilton highlights some common risk areas in his article on **page 12**. Meanwhile on **page 14**, our case study looks at allegations of negligence and breach of contract over the provision of veneers.

• Martin Nimmo
Editor

VIRTUAL FIRST IN DENTAL TRAINING

PHOTO MOOG INC

A VIRTUAL 3D mouth is being used for the first time at a UK dental school.

Students at the University of Leeds Dental Institute have become the first in the UK to try out new simulation technology that demonstrates what it feels like to drill teeth.

The virtual mouth uses haptic technology similar to that used in flight simulators or in vibrating hand-held computer game controllers. It offers tactile feedback allowing students to distinguish between drilling into healthy enamel or decaying teeth and to judge how much pressure is required when drilling. It even includes a tongue that reacts to touch.

The University of Leeds is the first UK institution to invest in enough virtual mouths for every student on its courses to use regularly. It's hoped training on the simulator will bridge the gap between students practising skills on phantom heads and treating real patients.

The virtual environment allows dental students to play back what they've done and identify areas for improvement. It also prepares them for a wider range of dental procedures, building up more complex cases than a phantom head can offer, such as tackling decay on a single tooth through to opening teeth for root canal treatment.

Director of Student Education at the University of Leeds Dental Institute, Professor Paul Brunton, said: "Dentistry is all about skill, dexterity and most importantly, practice. So having a virtual mouth to test and perfect your skills on, time and time again, means our students are going to be very well practised before they treat a patient."

MDDUS £1,000 GRANT WINNER

THE winner of the 2013 MDDUS VDP Education Grant has been announced as Nicholas Beacher.

The University of Glasgow graduate has been awarded £1,000 to invest in educational training such as attendance at courses, conferences and seminars, practice training and the purchase of text books.

For more information on MDDUS education grants, email Karen Walsh on **kwalsh@mddus.com**

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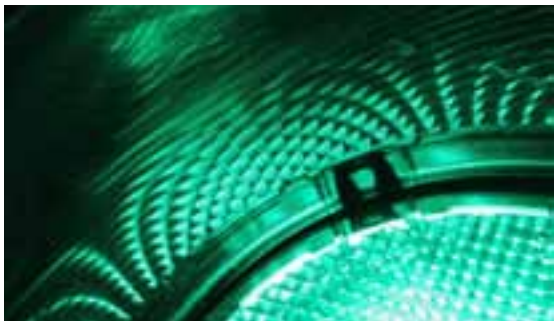


GREEN LIGHT FOR DIRECT ACCESS

DENTAL hygienists and therapists will now be able to offer treatment without a prescription or patients having to see a dentist first under new GDC rules.

The decision to remove the barrier to direct access for some dental care professionals was made following a GDC consultation and full discussion of the evidence at a Council meeting in March.

The move has been condemned by the BDA's General Dental Practice Committee who said the decision "fails to promote the concept and value of the dental team, which we believe is integral to the delivery of safe, high-quality care for patients."

Under the changes, dental hygienists and therapists can now carry out their full scope of practice without prescription and without the patient having to see a dentist first, but the guidance makes clear that they must be confident that they have the skills and competences required to treat patients direct. The GDC believes that a "period of practice working to a dentist's prescription is a good way for registrants to assess this".

Also under the new rules, dental nurses will be allowed to participate in preventative programmes, and orthodontic therapists will be able to carry out index of orthodontic treatment need (IOTN) screening without the patient having to see a dentist first.

Clinical dental technicians will continue to see patients direct for the provision and maintenance of full dentures only and will otherwise carry out their other work on the prescription of a dentist, but this decision could be reviewed in future given the potential for further training for CDTs. The work of dental technicians (other than repairs) will continue to be carried out on the prescription of a dentist.

Dental professionals are encouraged to get in touch with the GDC if they have any questions.

GDC chair Kevin O'Brien said: "Registrants treating patients direct must only do so if appropriately trained, competent and indemnified. They should also ensure that there are adequate onward referral arrangements in place and they must make clear to the patient the extent of their scope of practice and not work beyond it."

PARENTS FAILING TO TAKE YOUNG CHILDREN TO DENTIST

PARENTS are not taking their children to the dentist when recommended, according to a new survey.

Research by Yougov shows 79 per cent are waiting until their children are over a year old before taking them to the dentist, while five per cent wait until their child is five. Parents are encouraged to take children to the dentist as soon as possible, with baby teeth developing at around six months.

The Consumer Attitudes Towards Dentistry Survey found younger parents were more likely to avoid check-ups – less than half (47 per cent) of 18-34 year-olds with children under 16 take their children to the dentist every six months. This is compared to 75 per cent of parents over 45.

DENTISTS WITHOUT INDEMNITY RISK ERASURE

DENTAL graduates are being reminded of their obligation to have professional indemnity cover in place – or risk erasure from the dental register.

All General Dental Council (GDC) registrants are required to have appropriate and adequate indemnity in place so that patients can claim any compensation they may be entitled to. This applies to dental graduates as well as to more experienced practitioners.

There have been a number of high-profile cases in the last year where dentists have failed to have indemnity or insurance and, as a result, have been struck off.

"Having professional cover in place is a GDC requirement and ensures protection for dentists and their patients," said Aubrey Craig, MDDUS Head of Dental Division.

"The GDC are coming down hard on those who fail to protect their patients' interest with a number of dentists erased from the dental register for working without indemnity. There have been recent high-profile cases where the GDC have struck off practitioners and dentists are reminded to ensure they are covered."

He added: "Practitioners may believe they will never face professional difficulties but it can, and does, happen. Even if a patient was to complain and you are innocent of any wrongdoing, you risk being struck off by the GDC if you are not indemnified."

STUDENT DEBT SURVEY

THE impact of debt on dental students' career prospects is being examined by the British Dental Association.

Final year student BDA members across the UK have been responding to an online survey looking at how study-related debt affects access to the profession and career plans.

It comes as new research by the BDA suggests increased tuition fees could act as a deterrent for some students interested in a dental career. Concerns have also been expressed that student loans do not take into account the fact that dental students study for 40 weeks per term, rather than the standard 30 week term other students experience.

Most of the students surveyed agreed that debt was an inevitable part of being a student. The research also found that some students may give up on plans to become a specialist in areas such as maxillofacial surgery and periodontics due to the extra costs involved. When asked about working part-time to supplement their income, many of the students said the academic demands of their course meant this was not an option, however they did know some students who worked.

Chair of the BDA's student committee Paul Blaylock said: "Student debt is a persistent and growing concern in dentistry. We believe that entrants to dental courses must be selected on merit, not their ability to pay course fees – so that the best, brightest and most caring candidates are able to join the profession."

IT GOES WITHOUT SAYING

Making assumptions about the level of treatment a patient has consented to can lead to problems

WHEN a patient sits in the dental chair and opens their mouth for a check-up, most dentists would agree this demonstrates they are consenting to treatment.

The patient may not explicitly say the words, but their actions suggest they are happy for you to proceed. This is implied consent or "consent that is inferred from signs, actions, or facts, or by inaction or silence". Without it (and similarly oral consent), many general dental practices would likely grind to a halt under the burden of securing formal written consent for each and every treatment.

But while it serves a useful purpose, it has its limits and practitioners should not become complacent. MDDUS has dealt with a number of cases where dentists have proceeded with a course of treatment on the assumption the patient is in agreement, only to be subject to a complaint afterwards when the patient claims they had not in fact agreed.

In *Principles of patient consent*, the General Dental Council advises dentists that "giving and getting consent is a process, not a one-off event," that "should be part of an ongoing discussion between you and the patient." When circumstances change, i.e. if agreed costs are likely to increase, then the patient must be asked to consent to any further treatment/extra costs.

The GDC requires dentists to provide patients returning for treatment following an examination or assessment with a written treatment plan and cost estimate, adding: "Make sure that you are clear how much authority they have given you. For example, whether the patient agrees to all or only part of a proposed treatment plan."

The most important element about implied consent (and similarly, oral consent) is that it is appropriate only in relation to minor or routine investigations or treatments – i.e. a basic dental check-up. For anything involving invasive techniques, such as periodontal probing, radiographs or blood tests, you should explain the need for the proposed procedure and any potential risks/consequences and secure the patient's oral consent. Anything that involves higher risk requires written consent to ensure that everyone understands what was explained and agreed.

Implied consent does not just apply to dental treatment but also when sharing information with other dental care professionals. Less common are situations where a patient can't be informed about the disclosure of information, such as in an emergency. In these instances you should only pass on relevant information to those providing care and inform the patient once they are able to understand.

"Satisfy yourself that the patient has understood the information you have given them"

The most important step in any consenting process is to be satisfied that the patient has all the information they need and that they understand the implications of what is proposed. This is what is meant by "informed consent".

The GDC's *Principles of patient consent* advises: "You should give patients the information they want and need, in a way they can use, so that they are able to make informed decisions about their care.

"Satisfy yourself that the patient has understood the information you have given them. Consider whether they would like more information before making a decision, and whether they would like more time before making a decision. Respond honestly and fully to any questions the patient has."

It is important to be as clear as possible and not to assume that simply because the patient sits in the dental chair, for example, that you have free rein to carry out any treatment you believe is necessary. Obtaining consent is part of managing the patient's expectations within a consultation. For dentists, asking a question such as "Do you mind if I examine your gums more thoroughly?" is both reassuring to the patient and a part of ensuring oral and implied consent.

The crucial question is whether the person understands the procedure that is being proposed and can weigh up the relevant information surrounding it. Any question over a patient's mental capacity further complicates the issue and there is more detailed advice available in the MDDUS *Essential guide to consent* in the publications section of **www.mddus.com**.

Remember that patients have a right to refuse consent for an investigation or treatment and you must not pressurise them to accept your advice. Once the patient has given their consent, they are entitled to withdraw it at any time, including during the procedure. It's important that the patient understands how to go about reviewing any decision they have made with whoever is providing their treatment.

For more complex or invasive treatments that go beyond implied consent, be sure to record in the patient's notes any discussions about treatment and if consent has been agreed or refused by the patient.

If in doubt, contact your dental defence organisation for further assistance.

Joanne Curran is an associate editor of SoundBite

PERMANENT RECORD

Filling social media sites with evidence of inappropriate behaviour could lead to professional trouble, warns MDDUS dental adviser **Claire Renton**

HOW things have changed! We hear that a lot, and mainly from people who are sliding into middle age (albeit resisting it all the way).

When I was young, many years ago now, a night on the town meant meeting up with friends and having a few drinks while we got ready. Sound familiar? And it being the 1980s, we'd apply huge amounts of eye makeup, back-comb our hair and don ridiculous high heels for a night at the local disco.

What has really changed since my day is that, with the advent of social media, photos and videos of these kinds of nights out – as well as the aftermath of the morning-after – are increasingly being posted online. While this can be just a bit of fun for some people, the General Dental Council expects dentists to "maintain appropriate standards of personal behaviour in all walks of life so that patients have confidence in you and the public have confidence in the dental profession."

These standards apply when you are both on and off-duty. As such, you should never underestimate the impact of what appears on sites like Facebook, Youtube, and twitter on your professional life. Years ago we may have behaved in a way that would make us blush at the memory, but that was it, just a memory. People seldom carried cameras and even then the hard copy prints would likely only be seen by a handful of friends. Nowadays, any indiscretions can be captured and posted online for the world to see within seconds.

It is now common practice for potential employers to trawl these sites to find out about the "real you", so discovering photos of you doing something questionable could seriously harm your career prospects. Similarly, people you don't know can often access your profile, including personal details and photos. There is little privacy with these sites, even when you think you are being very careful so be extremely cautious about what you post online. Even if you think only friends can see it, often information can be copied, forwarded or otherwise passed on.

The GDC has been consulting on a new guidance document, *Standards of Conduct, Performance and Ethics*, which will include advice sheets on topics such as social networking. The consultation document published in October offers a cautionary message: "There is some evidence from our fitness to practise cases that the number of allegations relating to social networking, personal behaviour, convictions and failure to co-operate are increasing". So, as much as you'd like to think otherwise, your private life does impact your professional life.

As a practising dentist, you might wonder if it's ever okay to "friend" a patient on social networking sites? The simple, safe answer is no. Patients come to see you for healthcare and for quality dentistry. For that professional relationship to flourish, it's probably best they haven't seen you dressed up for a night out, drunk or worst of all dancing. You must maintain professional boundaries with patients and engaging with them online runs the risk of falling foul of the GDC.

Sites like Facebook, twitter, blogs or chat rooms can also be a tempting forum for stressed dentists to let off steam. The job of a dentist is not always an easy one and years ago those looking to vent frustrations may have done so by talking to a colleague or by taking the time and trouble to put pen to paper to write a letter to a newspaper or magazine. And likely by the time you had sealed the envelope and gone to buy a stamp the mist will have cleared and the angry missive would end up in the bin.

Not so these days where our views can be posted online in rapid fire debate for all to see at the click of a mouse. Little wonder then that some come to regret what they have posted not long afterwards. And once it's there, it's very hard to get rid of. Even deleted posts can remain as cached information on search engines and sites years later, leaving you to deal with an ill-considered remark for far longer than you anticipated.

MDDUS has dealt with numerous cases where members have run into professional difficulties by posting derogatory comments about colleagues or patients online. Not only are rude comments about patients likely to call into question your professionalism, they are also very likely to breach strict rules on patient confidentiality. Even if you refer to patients anonymously, you are heading for trouble.

So remember, being a dentist is not just a nine-to-five role. The public and the GDC, rightly or wrongly, expect us always to act in a professional way. That doesn't necessarily mean staying in and never having fun, but be careful about what appears online. Make sure your privacy settings are as strict as possible and don't be tempted to "friend" patients. And while it's fine to have an opinion about things, just be sure that you don't offend anyone. In the words of that 80s music icon Phil Collins: "Oh, think twice".

Claire Renton is a dental adviser at MDDUS

KICKING DENTAL DISEASE INTO TOUC

Sports dentist **Fiona Davidson** talks about the challenges of caring for the Scottish International Rugby squad

RELUCTANCE to visit the dentist isn't confined to the timorous.

In fact some of our greatest exponents of brute force and raw courage have been dragging their feet when they should have been knocking on the surgery door.

That was Fiona Davidson's discovery when she was appointed official dentist to the Scottish international Rugby squad six years ago.

"Compared to the general population they are nearly all terrified of needles," says Fiona. "It is a bit of a standing joke, considering the collisions they get involved in on the pitch. They are all terrified of me. It is quite amazing."

Perhaps her biggest challenge came when one of the largest members of the Scotland squad needed to have a wisdom tooth extracted before a major tournament.

"He is a huge guy, and we were terrified he was going to faint," she says. "We had to give him three times the usual dose of local anaesthetic. I have never given anyone that much. I didn't worry because he was huge – half the weight again of a normal person, and solid muscle. We still joke about it every time I meet him, and the story gets more elaborate every time he tells it.

"The interesting thing is that they don't like dental treatment – the main problem is having the needle. Maybe it is a phobia that has developed because they have to undergo stitching very quickly if they come off the pitch injured.

"There is a lot of banter about it in the squad. I always enjoy that. They take every opportunity to kid each other on – I think it is an attempt to get over their own fears."

Preventive care

Initially taken on to provide emergency cover for international matches, Fiona has grown her role in Scottish rugby to ensure that players have regular screening and that problems are tackled before they become a threat to their game. She has also developed a strong sporting dimension to her SmilePlus Dentalcare practice in Edinburgh.

Fiona's active involvement with rugby began in 2007 when she was approached by James Robson, Medical Director of the Scottish

Rugby Union and the British and Irish Lions. "I had been recommended by a patient who works for Scottish Rugby," she says.

She was an experienced dentist, having qualified in 1986 from the Royal London Hospital where she worked up to SHO level in Oral Surgery. But Fiona felt the need to raise her own game and attended a Certificate in Sports Dentistry course at the Eastman Dental Hospital in London from 2008-09.

The scope of the work before her quickly became apparent shortly before the start of the Six Nations, when three senior Scotland players presented with severe dental problems that had the potential to flare up during overseas travel.

"My view was we had to prevent problems from arising at the wrong time," says Fiona. "For example if an athlete comes in with a problem wisdom tooth, and we anticipate they could suffer from infection at an awkward time, we would plan for an early extraction, rather than treating with antibiotics beforehand, as we would with other patients."

A series of questionnaires sent out to the team about their dental health confirmed her fears that young men tended to leave home and forget to go to the dentist, in some cases for 10 years. So Fiona set up a screening programme which involves thorough 30-minute examinations every four years.

This paid off before the 2011 World Cup in New Zealand when Fiona found that, of the 38 members of the squad, seven had urgent dental problems. Another 24 required more routine treatment ranging from scale and polish to chronic abcesses.

"We had to make sure they were all dentally fit," she says. "Severe dental problems such as chronic abcesses or caries may well have caused problems when they were travelling."

Wisdom teeth, she points out, are a very common problem in young people in their late teens and twenties. Teeth partially erupting through the gum can easily become infected causing pain, swelling and fever. Fortunately none of the players had any problems on the tour, however other members of the party weren't so lucky. Some of the coaching staff and players' wives who had joined the New Zealand tour suffered dental problems of their own.

Lifelong passion

Rugby isn't just a job for Fiona. Married with three children - Fergus, 21, Lorna, 19, and Ruairidh, 16 - her boys are also keen amateur rugby players.

She still provides match cover at Murrayfield internationals - no hardship, since she has been an avid fan of the sport since her days at the Royal London - and she and a colleague share cover at matches involving Edinburgh Rugby and Glasgow Warriors.

They are all nice lads, she says, and their relationship may have something to do with the fact that, at 50, she is the same age as most of their mothers. Indeed, Fiona is in some ways picking up where their parents left off.

"Young men are probably the worst at keeping up with dental treatment," she says. "When they were young their mothers would have taken them to the dentist every six months but when they leave home they forget about that."

Broader outlook

Now Fiona has another target in her sight, and is again meeting the challenge by broadening her education. As a dentist she has grown increasingly concerned at the effect sugary drinks and snacks have on athletes' teeth.

"I want to question why athletes need to take such sugary drinks and snacks. That is where their diet falls down," she says. She admits that, where athletes are concerned, finding a substitute might not be easy. "I don't recommend isotonic or sports drinks to the general public, but athletes may have to take in 3,000-4,000 calories a day and it is difficult to absorb all that in food. But the result is we see damage caused to teeth by high acid and sugar."

"Compared to the general population, the players are nearly all terrified of needles."

For her part, she admits: "When I first met some of the senior Scotland players I was quite awe-struck. I really enjoy watching the young ones starting off and developing through international rugby. It is lovely seeing them getting their first cap."

One of her most unusual assignments to date has been creating a trophy for Edinburgh Rugby using the legendary cauliflower ear of Alan "Chunk" Jacobsen, who retired this year after a career spanning 285 games for Edinburgh and 65 for Scotland.

It began as an attempt to protect the ear from further punishment by covering it in dental putty to keep it from swelling up if it took a knock on the field.

"When that happens the ear swells with blood and if the blood isn't drained off it hardens and you are left with the cauliflower ear," Fiona explained.

Instead of sending Chunk back on with a big lump of putty held in place by a bandage, she took a mould and made a neater, close fitting version which stayed in place without a bandage.

"We mounted the mould and they are going to have one made in silver as a club trophy."

The first winner of the trophy will, fittingly, be "Chunk" himself.

So Fiona has become the first dentist to enrol on an online diploma course on sports nutrition run by the International Olympics Committee in order to find out about athletes' need for sports drinks.

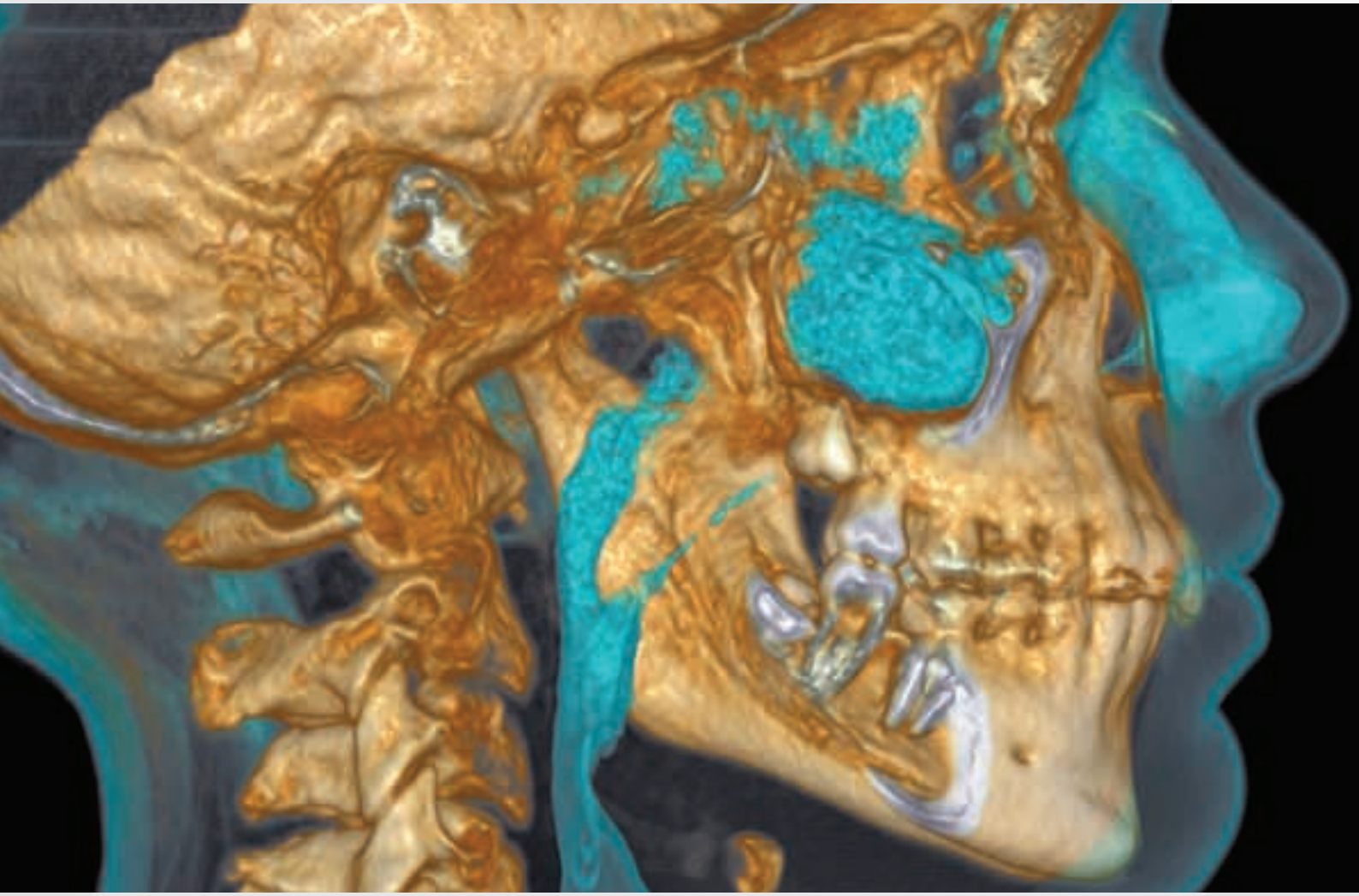
"It is a subject that is outside my comfort zone. I need to understand the nutritional aspect," she said. "I don't know if we can stop them using these drinks - it is a question of working out ways to minimise the damage."

Also high up Fiona's agenda is next year's Commonwealth Games in Glasgow, in which she hopes to play an active part. SmilePlus were represented at the London Olympics by technician Paulina Ciecielag, who provided a mouthguard service.

"The challenges there were less to do with sports injuries than with athletes coming from developing countries requiring actual dentistry," says Fiona.

"It was a case of offering people treatment that might not be available back home. Sports medicine is about the prevention of injury but dental health generally can also affect performance. The Games are an opportunity for athletes to catch up with treatment that they might not otherwise have got."

Alan MacDermid is a freelance journalist



DENTAL imaging is not a particularly new field. The earliest dental X-rays date back to 1896, less than a year after physicist Wilhelm Röntgen took the first "medical" X-ray of his wife's hand. Yet in recent decades the field has seen an explosive growth in technology.

Today dental patients benefit from a range of diagnostic imaging techniques including computed tomography (CT) and cone beam CT (CBCT), magnetic resonance imaging (MRI), sialography and ultrasound. It is the role of the dental and maxillofacial radiologist to utilise these various diagnostic imaging techniques in order to assess the anatomy and pathology of the face, neck and head.

Dental and maxillofacial radiology (DMFR) is one of 13 dental specialties overseen by the General Dental Council and requiring registration on a specialist list. In its booklet *Careers in Dental Surgery*, the Royal College of Surgeons of England states that the specialty requires in-depth knowledge in a variety of areas, including:

- anatomical features as they appear on images taken using various imaging techniques
- interpreting images of diseases, disorders and conditions that affect the teeth, jaws, oral cavity, facial structures and the head and neck
- the provision of therapeutic radiology appropriate to specific conditions affecting the head and neck region
- using evidence-based knowledge of good clinical practice and diagnostic methods to justify the use of appropriate imaging.

Most dental radiologists work in dental schools or hospitals and require a good clinical background in order to treat patients in close collaboration with colleagues in other medical and dental disciplines.

Entry and completion of CCST

To join the UK specialist register in dental and maxillofacial radiology requires a Certificate of Completion of Specialist Training (CCST) which demonstrates satisfactory completion of training in all aspects of the curriculum. Entry to a UK training programme in DMFR is highly competitive and follows a two year period of postgraduate foundation training which may include vocational training (VT) but should also include training in secondary care in an "appropriate cognate specialty". Candidates for specialist training will usually be expected to possess an FDS, MFDS or MJDF of the UK Surgical Royal Colleges or an equivalent qualification, or an appropriate higher degree and/or experience in dental and maxillofacial radiology or a related discipline.

Completion of the curriculum as set by the Royal College of Radiologists should normally require four years of full-time training in an approved deanery programme. Each trainee is issued an RCR Specialty Trainee personal portfolio and logbook at the start of training and must undergo an annual assessment (ARCP) to confirm satisfactory progress.

Training schemes are centred on dental

VITAL VISION

Dental and maxillofacial radiology offers a career at the cutting edge of both dentistry and digital imaging technology

PHOTO: DEMETRIOS HALZONETIS/SCIENCE PHOTO LIBRARY

hospitals and schools, with appropriate rotations to teaching hospitals, district general hospitals and specialist hospitals. Candidates are required to pass examinations for a Diploma in Dental and Maxillofacial Radiology (DDMFR) of The Royal College of Radiologists. There are also workplace-based assessments. Dentists can apply for flexible or part-time training if there are "well-founded individual reasons".

Before acquiring a CCST the trainee will be expected to be capable of providing an independent diagnostic dental and maxillofacial radiology service offering specialist advice to clinicians with direct responsibility for the treatment of patients. This includes running a department with appropriate knowledge of the spectrum of staffing issues, radiological techniques and safety issues.

The job

Dental radiologists working in a hospital setting handle referrals for radiographic services beyond the scope of general dentists and other specialists. These must be checked and approved along with appropriate protocols for the investigation selected. A clinic list may be as varied as carrying out a CBCT evaluation of a prospective implant site to a sialogram to assist in the location of a salivary gland obstruction.

Research and training are also common aspects of the job. Dental radiologists are heavily involved in both undergraduate and postgraduate teaching as well as undertaking research or other original work. Clinical audit is also an important part of the job.

For more information on career prospects in dental and maxillofacial radiology go to the website of The British Society of Dental and Maxillofacial Radiology **(www.bsdmfr.org.uk)**.

Sources

- *Careers in dental surgery*. 2012 The Faculty of Dental Surgery. The Royal College of Surgeons of England. **www.tinyurl.com/ckdvzv2**
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Q&A

Mr Donald Thomson, consultant in dental and maxillofacial radiology at Dundee Dental Hospital

• What attracted you to a career in dental radiology?
I enjoyed radiology and radiography as an undergraduate and I was always interested in anatomy and pathology. This interest in radiology continued after graduation, particularly as part of the oral medicine and oral surgery posts.

• What do you enjoy most about the specialty?
It is rewarding to bring together various parts of the diagnostic puzzle and be able to arrive at the final diagnosis. I particularly enjoy the investigation of some of the rarer conditions which affect the teeth and jaws, and over the last few years CBCT has played an increasing role in this. There is still a lot of patient contact but not usually on a recurring basis.

• What do you find most challenging?
Although there is a tendency to think of a radiologist as someone who sits in a darkened room, there is a lot of interaction with other clinicians. There can be some confrontation when a particular investigation cannot be justified but you should be able to explain your reasoning.

• Have you been surprised by any aspect of the job?
As most dental and maxillofacial radiologists work in dental hospitals, I was always aware that teaching would be a large part of my job. I was surprised by the actual amount of undergraduate and postgraduate training of dentists that is expected.

• What personal attributes do you feel are important in dental and maxillofacial radiology?
An ability to think logically and also laterally and an ability to communicate effectively are all important.

• What advice would you give to a student or trainee considering the specialty?
I do not think that you can have too much experience of clinical dentistry before considering the specialty. Clinical experience greater than that obtained in dental foundation training is advantageous and broad experience of as many of the dental specialties as possible is required. Many of the cases requiring more complex investigations are referred from oral medicine and oral surgery clinics and experience of these specialties was invaluable to me prior to embarking on my career in DMFR.

CHILD'S PLAY

Stuart Davidson and **Michael Dhesi** offer a helpful perspective on dealing with anxious children in the dental chair

THE management of the paediatric patient in dental practice is a challenge faced by general dental practitioners on a daily basis. Treating children can be particularly rewarding but like all aspects of dentistry it requires good communication skills, clinical knowledge and a degree of practice!

Children account for a significant proportion of the population and developing a rapport at an early age will help establish a good long-term practitioner-patient relationship and hopefully result in a healthy, functional, stable and attractive dentition. This is not achieved without a degree of effort and here we offer an overview of both the non-pharmacological and pharmacological techniques that can be utilised to help tiny terrors become pleasant patients.

First it is essential to have a good understanding of the factors affecting anxiety in children. Often for children this is a fear of the unknown. The dental surgery is full of unfamiliar people and strange objects that often produce frightening noises and can induce a 'fight-or-flight' response.

Guidance from The Royal College of Surgeons of England suggests that the behaviour of children in clinical situations can be categorised in three ways:

- Co-operative: the child is able to participate in dental care.
- Potentially co-operative: the child may be able to participate in dental care with the adjunct of appropriate behaviour management techniques.
- Lacking co-operative ability: the child is pre-co-operative, for example, very young children.

It is essential that the clinician takes time to evaluate the child's stage of development in order to appropriately plan the overall management strategy. This involves setting achievable goals and working with children and their parents towards attaining these goals.

Non-pharmacological techniques

Below are a number of communication-based techniques used to manage the anxious child patient.

Tell-Show-Do This technique is extremely popular and is helpful in acclimatising children to the dental surgery and treatment. There are three phases: initially an explanation of the equipment or procedure, followed by a demonstration (e.g. polishing the child's nail) before proceeding with the treatment.

Positive reinforcement This technique involves acknowledgement, praise and reward for positive behaviour (whilst ignoring negative behaviour). For example, stickers or bravery certificates.

Distraction Changing the focus of the child's attention away from the anxiety-causing factor can be effective. A useful example of distraction is having the child choose the music played in the surgery. The band One Direction is increasingly popular in my surgery at the minute!

Non-verbal communication These are non-verbal signals and cues which can help to reassure the child and provide a sense of control to the patient. A particularly effective example is the use of stop signals. A signal is agreed between dentist and patient to indicate that he or she would like to stop treatment. It is essential that if this technique is used the clinician does stop when requested, as often the child will test the 'deal on offer' before committing to treatment.

Modelling This is a particularly useful technique for an anxious child with a co-operative sibling/parent. The child can watch the 'model' taking part in treatment and feel reassured by a positive experience. Often this can remove a fear of the unknown.

Relaxation Simple relaxation techniques using breathing exercises or progressive muscular relaxation can be useful but require a degree of co-operation. This technique may be more useful in teenage or adult patients.

Systematic desensitisation This is a four-step technique to reduce the anxiety associated with a specific stimulus.

1. Identify the stimulus and any factors that contribute to anxiety.
2. Utilise relaxation techniques.
3. Establish a hierarchy of fear – patient scores experiences out of 10. For example seeing the LA syringe may cause an anxiety score of 4/10 whereas having LA administered may give a score of 10/10.
4. Over a period of weeks the patient then uses relaxation techniques to progress through the hierarchy. It is essential the patient completes one stage while maintaining a relaxed mindset before proceeding.

Hypnosis This can be an extremely useful technique if the case is selected appropriately. Some controversy exists in relation to the effectiveness of hypnosis for behaviour management in children. A Cochrane review published in 2010 concluded that on the basis of the studies that met the inclusion criteria there was not yet enough evidence to suggest beneficial effects.

Pharmacological techniques

Conscious sedation techniques can be used with great effect to reduce fear and anxiety in children. Guidance from the Scottish Dental Clinical Effectiveness Programme defines conscious sedation as "a technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which communication is maintained and the modification of a patient's state of mind is such that the patient will respond to command throughout the period of sedation."

Inhalational sedation or relative analgesia (RA) This technique has a wide margin of safety and is generally viewed as the first port of call of the pharmacological techniques. A mixture of nitrous oxide and oxygen is used to achieve relaxation, sedation and a level of analgesia. The level of nitrous oxide is titrated until the patient is confident to start treatment. It is essential that the gas mixture is used alongside verbal support and reassurance from

the operator. A degree of hypnotic suggestion can help the child to feel at ease and progress well with treatment. Breathing 100 per cent oxygen for two minutes after the completion of treatment reverses the effects of RA sedation. Patient selection plays an important role in achieving clinical success as well as the experience of the operator in providing the correct communicative support.

Intravenous sedation IV sedation involves the administration of drugs directly into the venous blood stream via a cannula. Most commonly the drug of choice is the benzodiazepine, midazolam, which provides the useful effects of sedation, anxiolysis muscle relaxation and anterograde amnesia. But midazolam is also a central nervous system depressant and the patient must be carefully monitored throughout sedation. IV sedation should only be provided by suitably trained practitioners. It has the disadvantage of involving a needle to introduce the cannula and it is generally reserved for adolescent and adult patients.

Transmucosal sedation This involves administrating a sedative across a mucous membrane, such as sublingual and intranasal membranes. It is useful particularly with needle phobic patients. The use of midazolam by a transmucosal route is off licence and thus patients and their parents/guardians must be given this information in order to provide informed consent.

General anaesthesia (GA)

Although there are a range of techniques available for the management of the anxious child it is unfortunate that some patients will still require GA in order to co-operate with treatment. GA must be carried out by an anaesthetist in a hospital setting. The national *UK Guideline for the Use of General Anaesthesia (GA) in Paediatric Dentistry* provides a number of situations in which GA is indicated including:

- severe pulpitis
- acute soft tissue swelling requiring removal of infected tooth/teeth
- surgical drainage of acute infection
- single or multiple extractions in a young child unsuitable for conscious sedation.

The decision to use GA should not be taken lightly and the small but catastrophic risk of death must be highlighted in order to gain informed consent. As a result of this risk, all other avenues of anxiety management should be considered before referral for GA. Treatment planning for GA will involve the removal of any teeth of questionable long-term prognosis in order to prevent a repeat GA.

In conclusion, there are a range of techniques that can be utilised effectively to assist the anxious child in co-operating with treatment and developing a positive outlook to holistic dental care. Careful assessment by an experienced clinician and referring when appropriate are essential. Well-considered treatment planning with a long-term overall oral health strategy focusing on prevention and achieving oral health is paramount.

Mr Stuart Davidson is a dentist and Mr Michael Dhesi a VDP at the Clyde Dental Group (www.clydedental.com), which takes referrals for RA and IV sedation in anxious children

Sources

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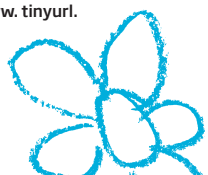


THE COST OF PERFECTION

It's a billion pound industry in the UK but what are the clinical risks of cosmetic dentistry? MDDUS dental adviser **Doug Hamilton** offers some advice

IT IS estimated that up to £1.5 billion is spent each year on cosmetic dentistry in the UK. So, regardless of where graduates choose to start practising, it is likely that they will soon encounter patients who wish to electively alter their smile. This type of treatment, if properly planned and executed, will undoubtedly bring much happiness to the patient. However, it does carry with it practical difficulties which are perhaps not so commonly encountered in therapeutic interventions.

Take, for example, a recent complaint against one of our members who had placed crowns in order to save his patient's fractured, carious incisors. The final restorations were well fitting and aesthetically pleasing. However, one of the prepared teeth subsequently became acutely painful and required endodontic treatment. In keeping with my theory that Sod's law is the governing principle in dentistry, the accessed preparation then fractured (over Christmas).

At this point the patient initiated a formal complaint and threatened to seek the advice of a solicitor. Fortunately, the high standard of our member's work was also evident in his record keeping and we were able to assist with the production of a strong defence. Once the

complaint had been resolved, our member reflected on how stressful the entire episode had been. He had felt genuinely sorry that these complications had occurred but was at least reassured by the fact that crowns had been essential for the patient to retain his front teeth.

Meeting expectations

What, then, if the crown provision had been elective? Perhaps the patient's incisors had been sound but slightly imbricated or discoloured and the treatment had been driven by a wish for a more 'perfect smile' rather than necessity. Would our member have been more vulnerable to a claim when one of the prepared teeth became symptomatic and fractured? In fact, the law does not necessarily demand higher standards for non-therapeutic treatment. Therefore, if the crowns were clinically justifiable, properly consented, well-documented and of good quality, the practitioner might well have a strong defence.

Unfortunately, such niceties tend to be lost on unhappy patients. Even when essential treatment goes wrong, complaints often follow. However, if the patient's perception is that the work "didn't need to be done in the first place" or that the dentist "was out to make money" or that the result "isn't what I expected", the complaint tends to be that bit more piquant.

Here are some practical tips for avoiding these scenarios:

Firstly, learn to walk before you run. Many of the techniques outlined in publications look impressively straightforward but are actually highly technique sensitive. Attempting complex cases before mastering the basics can lead to all sorts of calamities, so it is critical to recognise and work within your scope of competence.

In fact, experience will often enhance a practitioner's risk management skills as well as clinical abilities. As we learn to listen to even the most distant warning bells, it becomes increasingly likely that certain 'high-risk' patients or procedures will be politely declined. The disappointed patient may accept this wisdom or may look for a more malleable practitioner. In the latter case, younger colleagues can end up being pressurised into undertaking ill-conceived or overly ambitious treatments. This is a recipe for disaster. It is the clinician who considers which options are justifiable and presents them to the patient who then decides whether to give or withhold consent.

Even though this rule is axiomatic, there are circumstances where the patient may, quite rightly, feel aggrieved when the expected treatment is refused. Special deals, for example, might seem like a commercially astute ploy. However, this approach may appear to guarantee treatment to patients which cannot be offered once their dental health has been assessed. Remember, when it comes to marketing, there is a fine line between the persuasive and the unethical.

Clear information

To avoid any difficulties, a proper examination is essential before a treatment plan is formulated. The next stage is to provide all the clinical information that a reasonable patient would require to know. This includes advice regarding risks, not only associated with undergoing the suggested treatment, but also of declining. Thus, where jacket crowns are needed to restore fractured incisors, this treatment carries about a 10-20 per cent chance of the pulp becoming moribund.

A patient may withhold consent on this basis, but should do so only after being advised as to whether failure to crown may result in other problems such as the teeth becoming un-restorable. In cases involving elective treatment, however, there may be little or no risk associated with non-intervention (apart from patient disappointment). This point must be explained in understandable terms long before treatment commences.

Another treatment to consider carefully is external bleaching. At first glance it appears to be simple and non-invasive and therefore unlikely to result in any lasting harm (unless the super-bleached smile brings down aircraft). Surely, very little in the way of pre-operative warnings and general consenting is needed for this treatment?

"Attempting complex cases before mastering the basics can lead to all sorts of calamities."

In fact, aside from the new bleaching legislation which should be scrupulously observed, there are practical concerns such as costs, peri-operative sensitivity and the non-bleaching of restorations. The patient may also need to be advised of alternative means by which teeth can be made to appear whiter, like polishing, smoking cessation or internal bleaching for non-vital teeth (or perhaps getting a spray tan).

Managing expectations

Virtually every procedure, however innocuous, requires consent, a process that must also include a written cost estimate. In all likelihood, elective treatment will be relatively expensive and with higher bills come higher expectations. It is therefore vitally important to provide patients with an accurate idea of what is achievable. This could be done through accessible and honest communication, written and verbal, combined with teaching aids such as pre- and post-operative photographs of similar cases. It's important to be realistic, regardless of the patient's enthusiasm for an enhanced smile.

The obvious problem is that judgement of what constitutes an enhanced smile can be highly subjective. Where, for example, a patient presents with an acute pulpitis, provision of pain relief is generally the mutually expected end-point. Cosmetic outcomes are less easy to define which means that, even with the most comprehensive and transparent consenting process followed by technically excellent treatment, there will always be situations where the operator is delighted with the result but the patient is dissatisfied.

Avoiding this highly frustrating scenario is usually a product of years of patient assessment and management. However, even the most experienced practitioner can be caught out. Being confronted with the realisation that your patient's expectations are actually unrealisable or simply indefinable is not pleasant. The trick in these situations is to know when to quit. Replacing already excellent restorations is rarely helpful. At best it fuels the patient's delusions. At worst it leads to fractures, symptoms and general bad news.

Assuming that the patient has not been misled in the first instance, an empathetic yet firm withdrawal from the case may prove to be the least worst option.

Finally, remember the old adage, "if it's not in the notes, it didn't happen". Recording details of examinations, radiographs, consenting, treatment progress etc, can be tiresome and time consuming. However, if something goes awry, these notes can save you a lot of unnecessary stress.

Doug Hamilton is a dental adviser at MDDUS

INFORMED CONSENT

BROKEN SMILE

DAY ONE
Paul is 54 and works as a manager with a major hotel chain. He attends a dental clinic wanting to improve the appearance of his smile and consults with one of the dental partners – Mr K. On examination the dentist notes that Paul's teeth are discoloured and somewhat malpositioned with gaps.

Mr K discusses treatment options with Paul including tooth whitening of the upper and lower teeth, or whitening of the lower teeth with provision of crowns and veneers in the upper teeth. Paul is keen to have both his upper and lower teeth veneered in order to have a uniform smile.

DAY FIVE
Paul attends the clinic for an extended examination. Pre-operative photographs and radiographs are taken and study models are made. Mr K notes no particular abnormalities in the patient's dentition. A consent form is signed and the treatment plan agreed for the provision of veneers at UR4, UR3, UR1, UL1, UL3, UL4 and LR4 to 1/LL1 to 4 along with crowns at UR2 and UL2.

WEEK 3
The patient attends the clinic to view the diagnostic wax up and agrees some further revision to the treatment plan. Five days later he re-attends and veneer and crown preparation is carried out under local anaesthetic.

WEEK 4
The temporary restorations are removed and the veneers and crowns are fitted as per the treatment plan. A few days later Paul attends the clinic complaining of roughness and Mr K carries out some occlusal/incisal adjustment.

WEEK 7
Paul phones the clinic for an emergency appointment. The veneer at UL4 has de-bonded. Mr K re-cements the veneer and again adjusts occlusion to "ease pressure on the tooth". Two days later Paul is back at the clinic with UL4 having de-bonded again. Mr K re-cements the veneer and discusses the possibility that Paul may be grinding his teeth at night. The dentist agrees to make a splint for the patient. Two days later Paul returns to clinic now with both UL4 and UR1 having de-bonded. They again discuss teeth grinding and a lower soft splint is provided. Two days later LR3 de-bonds and must be re-cemented.

WEEK 8
Paul attends a different dental clinic concerned now with the quality of Mr K's restorations. The examining dentist finds cracks in UR3 and LR4 and composite fillings are placed. Later that week LR4 de-bonds and is re-cemented by the new dentist.

ONE month later the dental clinic receives a letter of claim from solicitors acting on behalf of Paul alleging negligence and breach of contract against Mr K. It is claimed that the dentist failed to obtain valid informed consent in the provision of veneers in that he neglected to advise the patient of the elevated risk of treatment failure due to his bruxism or teeth-clenching habit.

It is also claimed that Mr K failed to use reasonable care and skill in the assessment, diagnosis and treatment planning of the restorations carried out. More specifically the dentist failed to identify or note significant incisal and buccal edge tooth surface loss due to the patient's bruxism. It is alleged that had Paul known of the elevated risks due to his bruxism he would not have gone ahead with the proposed treatment.

Mr K contacts MDDUS and an expert report is commissioned from a consultant in restorative dentistry. The expert is provided with the patient records including all available radiographs, photographs and study models.

Examining the pre-treatment study models the expert notes attritional wear along the incisal edges of the lower incisor teeth "more than one would expect as being normal for a patient of this age". Evidence of wear is also obvious in the radiographs. He judges that this should have warranted further investigation of the possibility of bruxism. This observation is particularly relevant as in his view the failure of the veneers was, "on balance, related to the claimant's bruxism habit." A more appropriate treatment option in the opinion of the expert would have been the provision of a mouth guard before considering veneers or even better full coverage crowns.

MDDUS advises that given the expert view the best option is to settle the claim for a modest sum based on the costs for remedial treatment and ongoing care.

Key points

- Discuss with the patient all major risks and contraindications for treatment.
- Do not assume patients are necessarily aware of habits or behaviours that compromise treatment success.
- Establish and follow thorough protocols in treatment planning.

OUT THERE

GROW YOUR OWN Dentists may one day be able to replace missing teeth with ones newly grown from gum cells. A team from King's College London combined adult gum tissue cells with cells from mice to grow a tooth. Other work uses embryonic stem cells to create 'bioteeth', but it's likely to be years before dentists can use such methods. *Source: BBC*

DEATH BREATH Tooth-soape was a precursor to modern toothpaste, made using the ashes of burnt mouse, wolf and rabbit heads. People also washed their teeth with tortoise's blood three times a year to prevent toothaches. It's thought Egyptians were the first to use pastes to clean teeth in 5,000BC.

FATHERS' FEAR Dads who fear dentists are more likely to pass on their anxiety to their children. Madrid Uni researchers found both parents play a big role in the transmission of dentist fear, but particularly fathers.

ROYALLY STRESSED Dental analysis on the bones of King Richard III (famously found under a council car park) shows he ground his teeth with stress and lost several teeth due to severe decay. London GDP Amit Rai conducted the research published in the *BDJ*.

WHAT ARE WE LOOKING AT?

Stumped? The answer is at the bottom of the page

PHOTO: STEVE GSCHMEISSNER/SCIENCE PHOTO LIBRARY

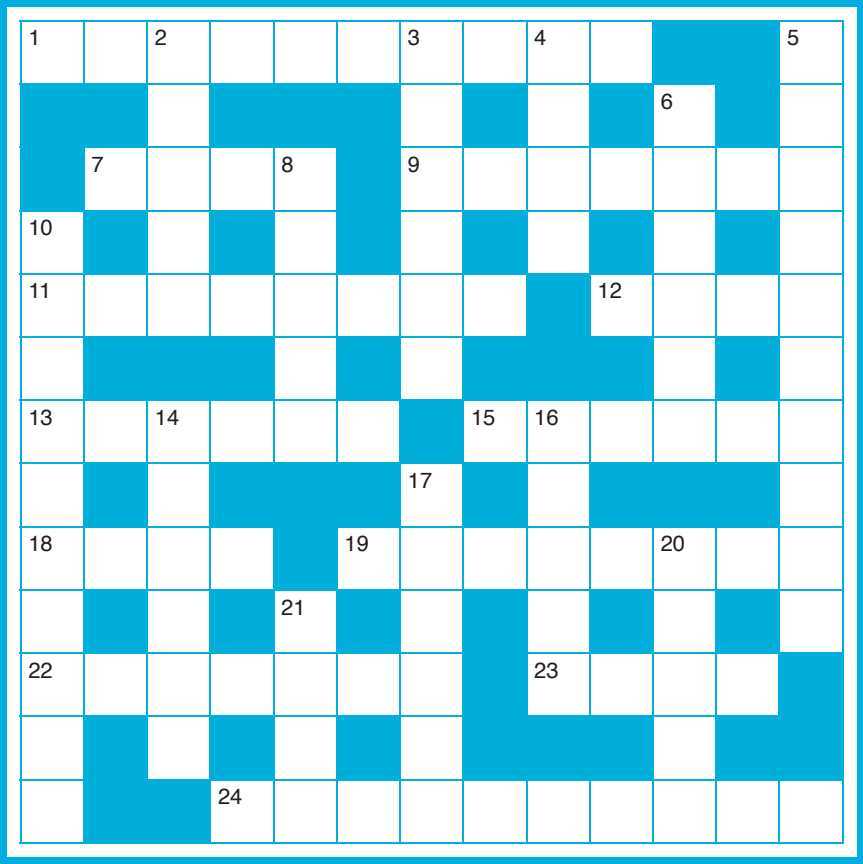
CROSSWORD

ACROSS

1 Removal of nerve, possibly after root canal work (10)
7 Not soft (4)
9 Dental cement made with glass powder (7)
11 Deviant (8)
12 Japan's highest mountain (4)
13 Restorations that extend to replace cusps (6)
15 In the main (6)
18 Front of head (4)
19 Young patients (8)
22 Brand name of luting cement (7)
23 Slender (4)
24 Artificial replacement for a tooth, or part thereof (10)

DOWN

2 Mediterranean country (5)
3 Highly venomous Australasian snake (6)
4 ____ Lisa (4)
5 Causing great fear (10)
6 Quantity (6)
8 Lace placemat (5)
10 Conceal (10)
14 Rented storage space (6)
16 Young owl (5)
17 Poems (6)
20 Wrecks (5)
21 Indicative of tissue damage (4)



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WHAT ARE WE LOOKING AT? *SEM of cat's tooth*

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