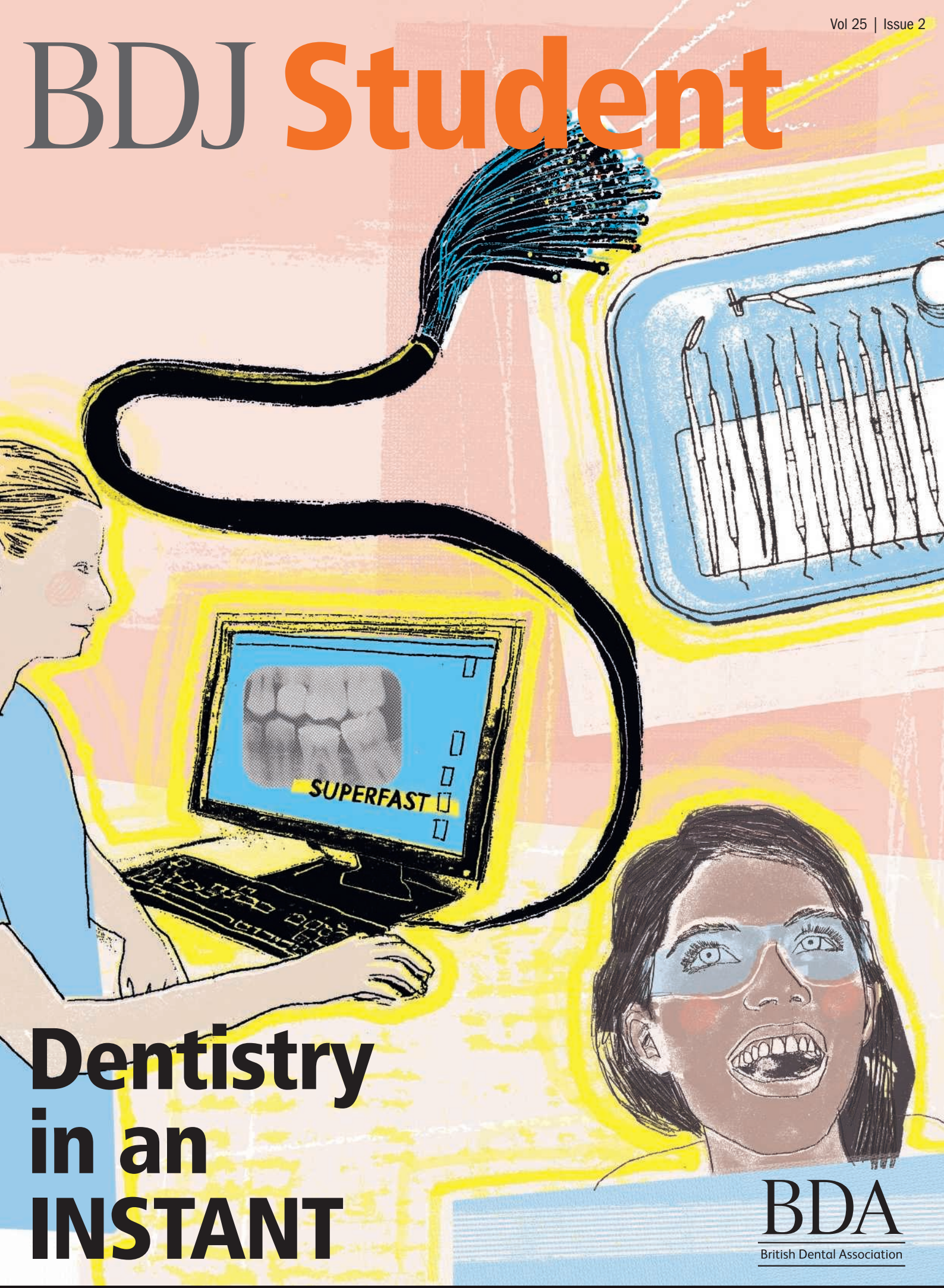
Vol 25 | Issue 2

BDJ Student



Dentistry in an INSTANT

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Top tips for DCT ■ Is communication key? ■ My specialty ■ WSS ■ Being a leftie

PLAQUE CONTROL: 'GOOD' CAN BE BETTER

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References
1. Araujo MW, *et al. J Am Dent Assoc* 2015;146:610–622.
2. Johnson & Johnson. Data on file.

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BRING OUT THE BOLD™

BDJ Student

the British Dental Association's official magazine for students

VOL 25 ISSUE 2

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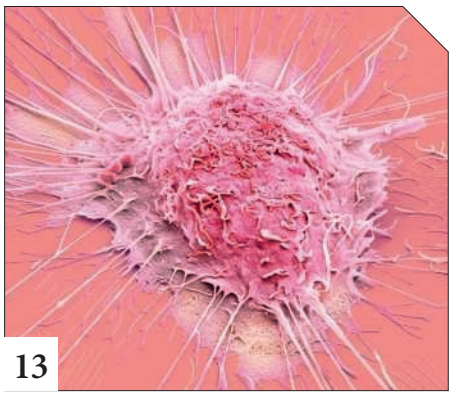

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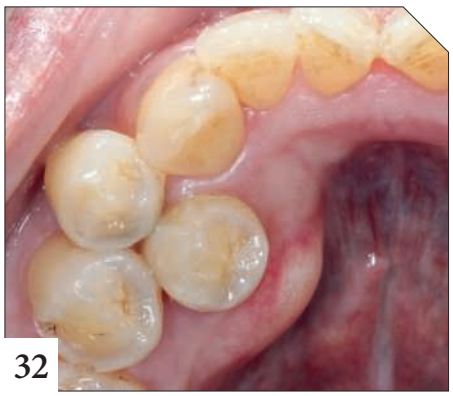

32

UPFRONT

PROFESSIONAL

CLINICAL INSIGHT

Cover image: Kavel Rafferty **Editor** David Westgarth **Editor-in-Chief** Stephen Hancocks OBE **Art Editor** Melissa Cassem **Production Editor** Betty Bohane **Team Leader** Felicity Agyemang **Publisher** James Sleigh **European Team Leader – Academic Journals** Andy May **Production Controller** Natalie Smith. Published three times a year for the **British Dental Association** by: **Springer Nature**, The Campus, 4 Crinan Street, London N1 9XW. Tel: 020 7843 4724. To contact the editorial office: **British Dental Association**, 64 Wimpole Street, London W1G 8YS. Tel: 020 7935 0875. E-mail: bdjstudent@bda.org. Web: www.bdjstudent.co.uk. ***BDJ Student*** is the student journal of the **British Dental Association**. ISSN 2056-4805 EISSN 2056-4813.

BDA
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EDITORIAL

David Westgarth, Editor, *BDJ Student*

Keerut Oberai, Student editor, *BDJ Student*


DENTISTRY IN AN 'INSTANT GRATIFICATION' SOCIETY

Hello, and welcome to the second issue of the 2018 instalment of *BDJ Student*.

Since we last spoke the BDA has finalised its Student Manifesto for the next three years. We know fledgling careers are becoming more and more difficult. Whether that's because you feel uncertain on a particular treatment, are struggling financially or simply don't have the time to balance all of the demands and expectations, rest assured you are not alone. You can also rest assured that the BDA is committed to fighting your corner, and they are just some of the issues we will be tackling throughout the next three years.


SISTERS DOING IT FOR THEMSELVES

To the contents, and one issue we're all probably aware of – and as consumers are complicit in – is the desire to have everything now. Our cover feature looks at whether dentistry is no different in the 'instant gratification' society we live in. Are patients more demanding than ever before? Does technology make it easier to manage their expectations? As ever, food for thought.

Once upon a time dentistry was very much a family business. In many areas, it still is. But does sibling rivalry mean you're already on a career path without really knowing it? Nicola and Amy Gallacher talk about their careers to date and whether one influenced the other.

We know career development is a huge issue for students too. There is so much choice out there it can be a minefield. That's why we've got tips on DCT training, a detailed look at what an MJDF is, a breakdown of some of the specialties available and more.

We also know clinical knowledge and understanding means a lot too, and our clinical section has plenty for you to sink your teeth into. Should wrong site extraction be classed as a never event? Want a summary of trauma in the young permanent dentition? Perhaps you want to know what supernumeraries are. The answers are all there.


A SUMMARY OF TRAUMA IN THE YOUNG PERMANENT DENTITION

For those of you in the midst of exams, from myself and everybody at *BDJ Student*, we wish you the best of luck.

David Westgarth

Dear reader,

This represents my last editorial as Student editor of *BDJ Student*. I have thoroughly enjoyed being a part of such a fantastic publication and it has been an honour to be able to contribute alongside such a host of wonderful authors.

Last year, I wrote an article which focused on low levels of confidence amongst young dentists following the release of the 'NHS Confidence Monitor 2016' which highlighted some of the issues that dental professionals faced. Recently, the results from the 2017 survey were released, which echoed the findings of the previous year, with almost 50% of the dentists surveyed claiming they felt unhappy with the level of treatment they were able to provide on the NHS. Furthermore, 71% of NHS dentists reported that they were either 'extremely anxious' or 'very anxious' about the risk of litigations and complaints.


SHOULD WRONG SITE EXTRACTION BE CLASSIFIED AS A 'NEVER EVENT'?

As a final-year dental student such surveys can often be a source of anxiety about what the future holds for dentistry and the NHS. Despite this, as I did last year, I remain optimistic about the dental profession which, I believe, still has a great deal to offer and is a fundamental part of healthcare in this country. The last edition of *BDJ Student* also showed the variety of different pathways that dentistry has to offer and featured fantastic advice from dentists and dental students from all walks of life.

These perspectives are a fantastic way for dental students to learn and can have a formative influence on our career progression. In this vain, I hope this edition of *BDJ Student* will be thought provoking, informative and enjoyable.

Best wishes to all for your future career in dentistry,

Keerut Oberai

WE LOVE DENTISTRY!

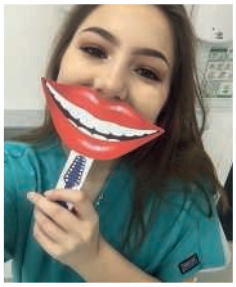
We've had such a great response to our 'we love dentistry' badges that we've decided to give one to every student member. When you renew your membership you'll get a copy of our *Student Membership Guide,* plus a free 'I love dentistry' badge**. Look out for your membership renewal in the post.**

ONLINE REVIEWS

We all read online reviews to check out new restaurants or book a hotel. To help students gain a better understanding of what we do, we've decided to jump on the bandwagon and gather online reviews about our student membership with Trustpilot. We'd love to hear your feedback, so it would be fantastic if you could spend a couple of minutes posting a review for us.

Check your inbox for your review invite!

NATIONAL SMILE MONTH SET TO PUT A SMILE ON YOUR FACE



The Oral Health Foundation is delighted to announce the return of National Smile Month for 2018, with the campaign promising to bring with it a summertime of smiles.

This year, the UK's largest and longest running oral health campaign takes place between 14 May and 14 June, aiming to increase awareness of important oral health issues and make a significant difference to the well-being of millions of people.

Supported by thousands of individuals and organisations, National Smile Month promotes three key messages at the heart of good oral health:

- Brush your teeth last thing at night and on at least one other occasion with a fluoride toothpaste.
- Cut down on how much and often you have sugary foods and drinks.
- Visit your dentist regularly, as often as they recommend.

The charity is calling on dental, healthcare, education professionals and support from the voluntary sector to help spread smiles and key oral health messages even further than ever before.

Chief Executive of the Oral Health Foundation, Dr Nigel Carter OBE, spoke about why you should get involved in National Smile Month.

Dr Carter says: 'This is your opportunity to help spread some smiles and improve oral health.

'Our goal is to improve the oral health of every person in the UK and enable them to smile with confidence. This is, a huge task that we need your help to achieve.

'Maintaining a healthy smile can be so simple, but for so many this is sadly not the case. Despite the many improvements in oral health over the last 40 years, inequalities continue to be a burden for countless groups.'

National Smile Month 2018 sees the return of the now iconic Smiley, something which Dr Carter believes symbolises exactly the purpose of the campaign.

'Elements such as the Smiley enable us to have a real impact,' adds Dr Carter.

'Alongside education, National Smile Month is about having fun and reaching out to people to drive their interest in oral health.'

If you have not done so yet, simply visit www.smilemonth.org to pledge your support and take part in National Smile Month 2018.

BOOK YOUR PLACE TODAY!

The Dental Industry Event of the Year will soon be here! The Digital Symposium 2018 takes place on 27-28 April in London and this year it's thinking big, it's thinking holistically and it's thinking differently.

Driving innovative solutions in areas such as predictive treatment, diagnosis, management, treatment and prevention, the Digital Symposium is an opportunity to witness the transformative power of these emerging technologies first hand and hear from some of the industry's most influential educational and motivational speakers.

This year's Keynote speaker is the Medical Futurist Dr Bertalan Mesko, a self-confessed 'geek physician' with a PhD in genomics and an acclaimed author, who will challenge the audience with his predictions on the impact digital heath technologies will have on the future of health care.

The Medical Futurist is joined by a first-class line-up of speakers including Colin Campbell, Rune Fisker, Sinead McEnhill, Adam Nulty, Josef Kunkela, as well as renowned technicians Petr Hajny and Vicken Hatsakordzian, and many more.

Featuring two-days of high-quality lectures and hands-on workshops led by digital experts at the top of their profession, the Digital Symposium is a must-attend event for those just starting on their digital journey to the most experienced professionals who are already realising the many benefits of an integrated digital workflow.

Register today! The Henry Schein Digital Symposium is taking place at the Park Plaza London Riverbank Hotel on 27-28 April 2018. For more information or to register visit www.hsddigitalsymposium.co.uk, call the events team on 01634 877 599 or email hsddigitalsymposium@henryschein.co.uk. Rewards members get a £25 discount. Log in to your account to get a discount code (or sign up for free at hsdrewards.co.uk)

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STUDENT MANIFESTO LAUNCHED

The BDA has launched its Student Manifesto for 2018-2020, tackling what it conceives as 'key priorities based on the issues affecting dental students'.

The manifesto seeks to address the core concerns of dental students and to highlight the potential to make changes that will improve the situation for student dentists and ultimately patients.

These policy priorities are set out in three areas:

- Clinical experience and the dental school
- Student finance
- Dental Foundation Training.

Commenting on the manifesto for the BDA, Outgoing BDSA President Molly Deykin said: 'The BDA estimates that dental students currently in their first year will graduate more than £76,000 in debt.

'Despite this debt mountain, we still don't have enough to fully cover our living costs. In some cases, the student loan is more than £1,000 a year short of the estimated average living costs and, unlike many other students, getting a part-time job while studying for a BDS just isn't really an option.

'Yet, student finance is only one of many challenges dental students face over the course of an academically demanding five-year course.

'We need to be well-supported throughout our studies; confident we're getting the skills needed for real-world dentistry, free of worry about whether our student loans will cover basic living costs and secure in the knowledge that there's a DFT/VT place waiting after graduation.

'We know that many dental students are concerned that they simply aren't gaining enough clinical experience and confidence during their studies to equip them for life as a dentist.

> 'The BDA estimates that dental students currently in their first year will graduate more than £76,000 in debt.'

'As oral health in general has improved, dental hospitals struggle to attract patients requiring the treatments needed to give the breadth and depth of hands-on experience.

'However, a number of dental schools are taking pro-active steps to attract more patients and to assign them to students in a way that maximises exposure to a range of treatments and that addresses any skills gaps.

'While it is inevitable that there will be some differences in the level of clinical experience of each student, there is undoubtedly more that can be done to share ideas and experience between dental schools to promote a greater consistency between students.'

> 'This means that any graduate wishing to study dentistry must raise a fee in the five figures before they can study; a goal unrealistic for most people.'

Naeem Sheikh from Newcastle University said: 'Student finance is a big issue for myself. As a graduate student, funding a dentistry degree has been a cause for great stress, as unlike students studying dentistry as a first degree, graduate students do not get tuition fee loans. This means that any graduate wishing to study dentistry must raise a fee in the five figures before they can study; a goal unrealistic for most people.

'To raise the money to study dentistry, I personally had to take two years out to work. I believe that this should not be a situation that graduate students should have to find themselves in as it is restricting access to applicants from a low socioeconomic background or those with financial commitments for whom having over £9,000 a year in expendable cash would be unfeasible. The ability to raise the required fees whilst studying gets even harder for graduate students as we find ourselves ineligible for grants and bursaries that people studying for a first degree would find themselves eligible for. Getting a part-time job also puts a strain on finding a good work-life balance due to the long hours that are required daily to study dentistry.

'I believe that the same bursaries and loans that are available to first degree students should be made available to those contemplating studying dentistry as a second degree. This will widen the appeal to potential applicants and will only work to increase the standard of applicants applying for dentistry.' ■

DEVELOPING THE FUTURE LEADERS OF DENTISTRY

28 JULY 2018

On 28 July 2018 we are offering innovative leadership training for your Dentsoc Presidents and Vices. The Student Presidents Meeting gives these new leaders a basic grounding in leadership skills to help them run your Dentsoc effectively. This year we will also be looking at the business and financial side of running your Dental Society. It is also a chance for your presidents to meet up with dental schools from across the UK and get tips on how others run their committees.

Dr Janine Brooks MBE, owner of Dentalia Coaching and Training Consultancy, will look at personality profiling and leadership. Student Presidents will also get a chance to meet Peter Ward, BDA Chief Executive and Paul Blaylock, Chair of the BDA Student Committee.

To make sure that everyone can attend, overnight accommodation, travel and expenses are provided, so if you are thinking of running for the position of Dentsoc President or Vice in your upcoming elections, make sure you save the date!

Find out more at www.bda.org/studentpresidents

Revision resources

Exam time is looming, so to help with your revision, we have developed some helpful revision packs. These cover a range of subjects including restorative dentistry, endodontics and minor oral surgery and include:

- Clinical guidelines
- Cochrane reviews
- Medline search articles
- Policy documents
- Recent *BDJ* articles
- Links to relevant eJournal articles.

Go to www.bda.org/student-library **to find out more.**

Job hunting on the horizon?

If you are moving into your final year in autumn and starting to think about Dental Foundation Training and Vocational Training recruitment, you will be pleased to hear that we have useful support package to help you prepare:

- *Getting your first job* guide – the essential guide to securing your first job
- Interview skills lecture – touring all UK dental schools
- DFT interview skills workshop – to polish up your interview technique.

Find out more and see an overview of both recruitment processes at www.bda.org/recruitmentprocess

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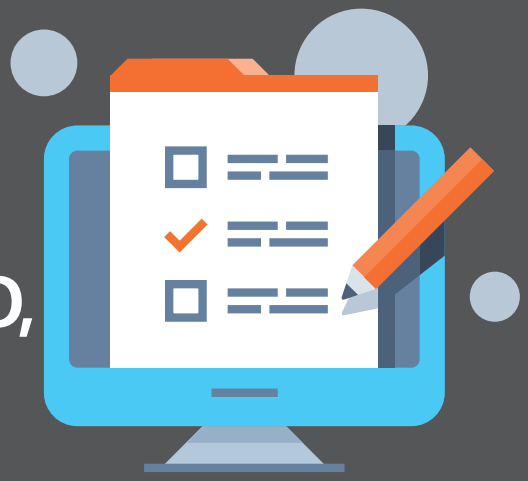
FOUNDATION TRAINING RECRUITMENT: A STEP FORWARD, OR LARGER ISSUE AT HAND?



By **Brandon Owen**, Sheffield University

Dentistry is a rapidly developing field and the recruitment process of newly qualified dentists appears to be no different. Over recent years, the process has had a number of changes in an effort to improve its fairness and ability to detect the best candidates. However, are these changes a step forward, or is it all just missing the point when it comes to the issues which really matter to final year students?

For the first time this year the situational judgement test (SJT) was held online at a choice of centres across the UK before the face-to-face element. In previous years, candidates sat a paper immediately after the live assessment stations. A separate SJT makes the whole process seem a lot less daunting, and gives a chance for candidates to focus on one thing at a time.

The range of communication scenarios were also released before the selection day. This may improve fairness as students will have ample time to acquire clinical knowledge regarding the scenarios to let their communication shine through. Previously, although the station aims to assess communication, it was easy to get caught off guard if you were not sure about the clinical aspects relating to the scenario. It is possible that universities will also be more involved in the recruitment process by preparing students for these scenarios; however, will this create further inequality if certain universities are better at preparing their students? This may also help to alleviate the need students feel to go on an expensive course due to the hope that it will give them an edge over other candidates. I wonder how many students look back and wish they did not go on a particular course? Personally, after one course I attended I felt like I had simply lined the pockets of the organisers. Furthermore, if a more comprehensive set of questions and answers was released this would help to alleviate fear of the unknown – perhaps then many students would not feel the need to part with their money?

At the start of 2017, The Committee of Postgraduate Dental Deans and Directors (COPDEND) announced that they wanted to move the face-to-face portion of the recruitment process to after finals in the second half of June, allowing around 2 months before the start of foundation training. This was very controversial with the British Dental Association, British Dental Student Association, and many individual dental students voicing their concerns. COPDEND listened to the opposition, but not without implementing one important change.

> **'With NHS cuts over recent years, and a drive to become more efficient it is imperative that every newly qualified dentist who wants a placement is able to get one'**

For 2018 entry onwards, offers will no longer be confirmed in January; they will be released after finals results in June. This comes as a surprise as it wasn't mentioned in the initial consultation leaving some confused. Students will go through the recruitment process without discovering whether they have been successful until after finals. COPDEND have said this will place students on a more level playing field as nobody will know if they have an offer until after finals. I wonder if the delay could adversely affect student motivation during a stressful, high workload year? My January offer gave me a boost when I really needed it. However, it was more disappointing for those without an offer approaching finals. Personally, I would have rather not found out until after finals if I was in that position. Yes, I would have been disappointed after finals, but at least I was a dentist at last. This recent change to foundation training could therefore be a step forward.

However, one question that is yet to be answered is what will happen to newly qualified dentists who now suddenly find out they are unsuccessful? Will dental schools be placed under extra pressure for support? Those who are unsuccessful will have a shorter period to find a job or suitable alternative outside of dental foundation training as the next available schemes will start in March of the following year.

Despite being left with numerous questions I feel that following recent changes we are possibly beginning to see a move towards a fairer, less stressful, more student-friendly selection process. There will always be pros and cons – how could a process ever identify the best graduate, most worthy of the scheme of their choice? We all qualify from high quality, heavily inspected and regulated courses, which brings me to my final point.

Regardless of recent changes to the recruitment process a more important issue remains - no guaranteed training place for every graduate who wants one. Personally, a greater concern during final year was actually having a placement – rather than my rank, or the practice I would end up in. Given the considerable NHS investment in UK dental students I feel that this should be an important issue for anyone who has an interest in the NHS. With NHS cuts over recent years, and a drive to become more efficient it is imperative that every newly qualified dentist who wants a placement is able to get one. Ultimately, what is the point of NHS investment in UK dental students if we cannot work for the NHS?

Brandon Owen

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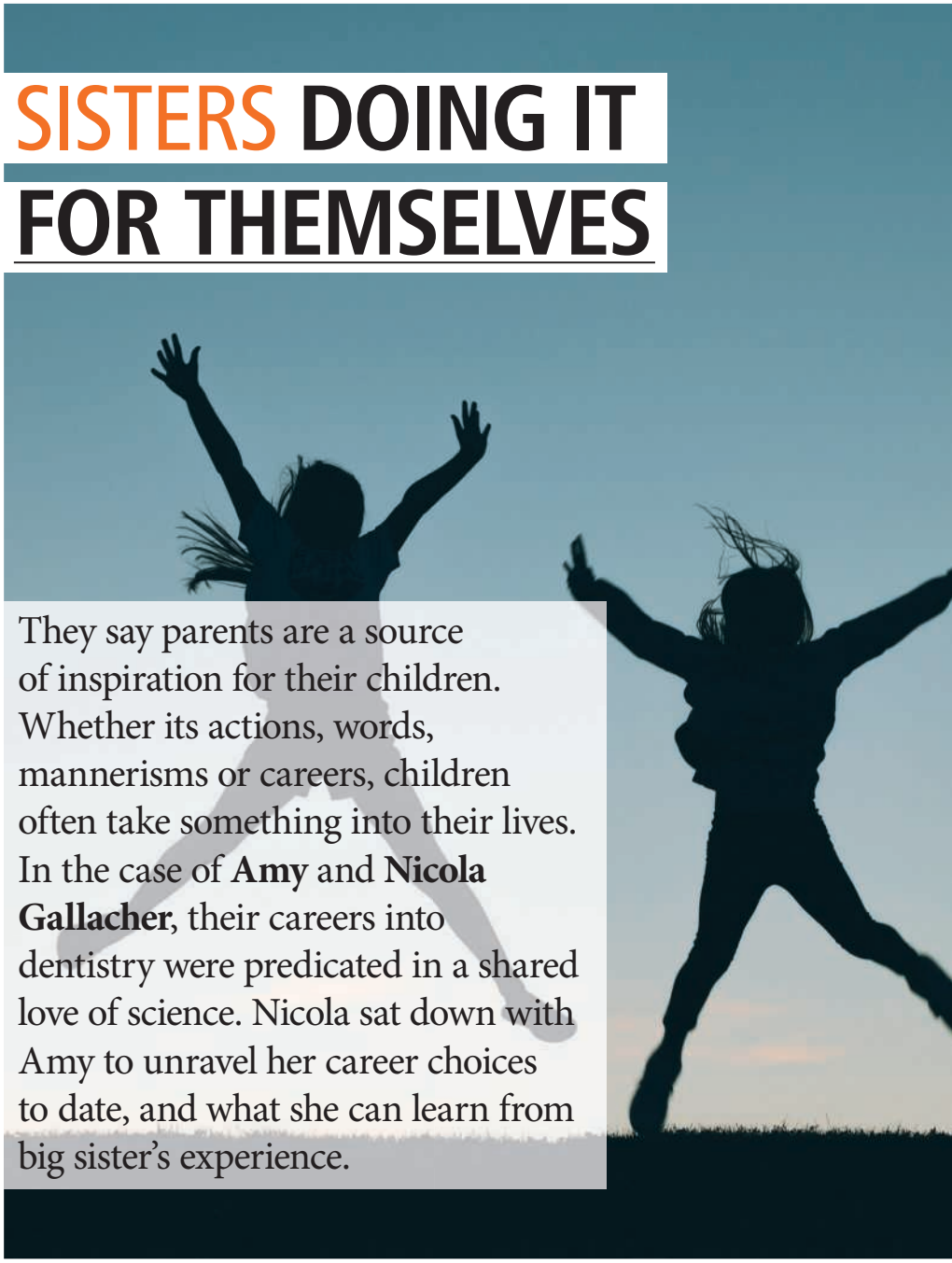
SISTER

➤ Amy Gallacher, *29, is currently undertaking her specialty training in orthodontics at Manchester University after graduating from Liverpool University*

SISTERS DOING IT FOR THEMSELVES



They say parents are a source of inspiration for their children. Whether its actions, words, mannerisms or careers, children often take something into their lives. In the case of **Amy** and **Nicola Gallacher**, their careers into dentistry were predicated in a shared love of science. Nicola sat down with Amy to unravel her career choices to date, and what she can learn from big sister's experience.

NG Why did you decide to go into dentistry?

AG It was always likely to be something science-related, wasn't it? I knew I wanted something more than a lab-based career though – I wanted something where I could communicate with people and bring the practical elements of science in. So I did some work experience and went from there really.

NG We always had an interest in science growing up together! Is that why you chose orthodontics?

AG Probably! It's good to choose an area that suits your personality. That's the case with orthodontics for me. There's plenty of planning involved. You have to sit down, assess the patient's malocclusion and plan how you are going to treat them over the course of their treatment. I'm quite analytic in my approach, so orthodontics suits me. I quite enjoy that I see patients for two years, especially at the age they're at. They change so much – most end up

NG Do you find there's a difference in adult and child patients?

AG I think so. Because we're only providing NHS treatment, it's the traditional fixed, 'train track' style braces with removable appliances. We do get a lot of young patients coming in asking for fast and clear aligners, but most teenagers seem happy to have the traditional braces.

At the other end of the spectrum I do see more adult patients than I did when I first started. It's quite a unique situation. Patients come in asking for Invisalign, a brand, without really understanding what the treatment involves. There's a lot of compliance involved, particularly given the cost associated with the treatment. It's not something we've really seen before.

NG This is where some of our similarities end. While we both went to Liverpool University, while we have both forged a career in dentistry, paediatrics was always going to be for me.

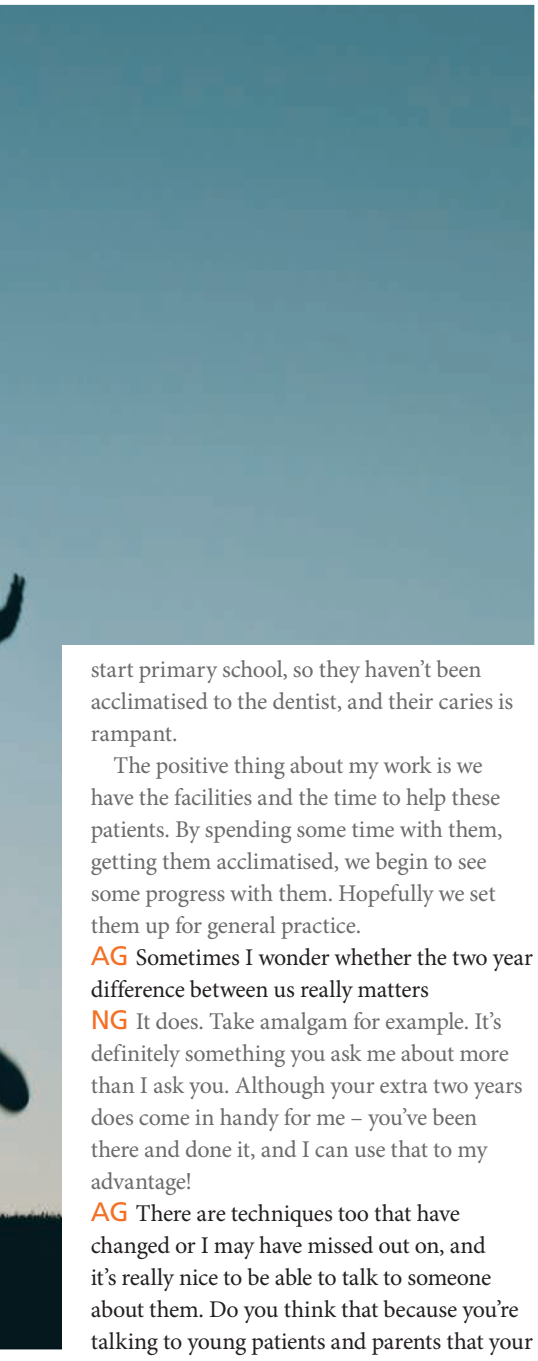
AG Do you ever think your choice of career was influenced by mine?

NG Maybe, yes. As an 18-year-old fresh out of university, I didn't really know what to do. Like you, science was always going to underpin my career. I had my degree in Anatomy and Biology, so like you I did work experience in a number of different disciplines and thought dentistry was a good career path.

Doing my LDFT working in general practice in Rotherham and a community centre in Doncaster and Barnsley has its challenges, but I love it. Particularly the behaviour and patient management aspect of paediatric patients. Give me a patient that is anxious and comes into the practice screaming and I'm happy. I see it as my goal to make any kind of progress I can and encourage them to trust me. I don't know how you would cope with that!

AG I don't think I would either. But we have different strengths in different areas. What kind of oral health do you see in Yorkshire?

NG We do a lot of GA lists, and they're increasing every year. I think we're all aware of how bad the statistics are – they are some of the worst in the country. Lots of my paediatric patients have never seen a dentist before they



start primary school, so they haven't been acclimatised to the dentist, and their caries is rampant.

The positive thing about my work is we have the facilities and the time to help these patients. By spending some time with them, getting them acclimatised, we begin to see some progress with them. Hopefully we set them up for general practice.

AG Sometimes I wonder whether the two year difference between us really matters

NG It does. Take amalgam for example. It's definitely something you ask me about more than I ask you. Although your extra two years does come in handy for me – you've been there and done it, and I can use that to my advantage!

AG There are techniques too that have changed or I may have missed out on, and it's really nice to be able to talk to someone about them. Do you think that because you're talking to young patients and parents that your communication skills perhaps have to be a little more rounded than mine?

NG It all depends on the individual. It's the way you phrase things. Parent reaction can be mixed. Some parents are never told not to send their child to bed with a bottle, for example. They're completely shocked when you tell them how bad their child's teeth really are.

AG So do they get defensive?

NG They can, yes, but if you don't bombard them with information and try to steer clear from blaming them, most come round and are receptive to what you're telling them. It comes down to experience. Liverpool University was great for teaching us the basics. It's not just about what you say. It's how you say it, your body language, eye contact, things like that. As your clinical experience expands, you're encouraged to develop your own methods. You have to make it your own – it's the only way to survive.

AG What has your LDFT taught you so far?

NG After my two-year longitudinal scheme finished, I felt those years changed my approach to communicating with patients. I'd even go as far as saying I was a completely different communicator by the end of those two years. A lot of that is down to experience.

AG How do you sleep at night knowing you spend your time whipping teeth out of kiddie's mouths?

NG If you can make a difference to that child's life and get them out of community centres and into general practice, there are siblings, parents and others you can potentially influence. Hopefully the tips you pass on will trickle through so we don't have to see them again. To me, that's a real positive. It's like a ripple effect. Do you find that with orthodontics?

AG Making a difference is rewarding. It's one of the fundamental principles of the profession. I know it's one of the reasons I went into it.

'I see it as my goal to make any kind of progress I can and encourage them to trust me. I don't know how you would cope with that!'

As long as we can see the difference – and orthodontics is a great specialty for being able to track progress – it makes any day rewarding.

NG How did you choose your area of specialty?

AG I thought it was about getting out and trying things. After graduating I got a role in restorative practice, which I found out wasn't really for me. During that post I got allocated to an orthodontic clinic and that was the area I enjoyed. If it wasn't for that restorative role, I wouldn't have found my current specialty.

It's about exposure to as much as possible. Something will click. You will find something you enjoy. That will feed into your career – you will want to learn, want to attend courses, want to talk to people to pick up tricks and tips to make yourself better. And so in that sense it picks you.

NG In many ways we're the same, but in lots we're totally different. I feel the same about my area of interest, but because I'm a few years behind you, I still have that flexibility. Right now I know that paediatrics is where I want to be, but I hope to secure another placement to reaffirm that belief. Like you said, I can keep my options open.

SISTER

➤ Nicola Gallacher, *27, is completing her Longitudinal Dental Foundation Training at the Yorkshire and Humber Deanery after also graduating from Liverpool University*

AG What do you think about the profession in general based on your albeit limited experience?

NG I'm in a fortunate position I suppose in that I haven't really seen the full picture. I know from what you have said there are some significant challenges on the horizon, particularly in NHS general practice. With both of us choosing to look at specialties away from that setting, it doesn't sound like a bad thing at the moment!

AG It can be easy to focus on the negatives. I attended a presentation by Matthew Hill, the GDC's Executive Director of Strategy, and the guy couldn't leave the room fast enough. It wasn't because we were an angry mob, but the negativity was astounding. He's still answering questions about things that happened three and four years ago. We have to move on and realise there are future challenges we need to meet.

NG I still have all of this to look forward to! We are making progress overall. Decay is coming down. Who knows what the landscape will look like in five years or so. I love my job, and at my stage of my career, that's all I can ask for!

Nicola Gallacher ■

TOP TIPS FOR DENTAL CORE TRAINING

By **Nicola Holland (DCT3)**, Aberdeen Dental Hospital

The Dental Core Training programme in England, Scotland, Wales and Northern Ireland is one of many valuable opportunities available to a young dentist when starting their career. Many newly qualified clinicians decide to enter the core training scheme with the main aim of consolidating and improving their knowledge and skills. It allows postgraduates to build on their undergraduate training and is a common pathway taken on the road to dental specialty training. It is beneficial to know in advance how to make the most of this new and exciting experience, which is where I hope I can shed some light.

In the last three years I have gained valuable experience in dental core training. Here are my top tips to make the most of your experience so that you not only learn a lot, but also enjoy yourself.

1 There's no 'I' in team

The process of working collaboratively with a group of people to achieve a common goal is essential in many areas of work. In dental core training this is especially true. No matter what post you are in you will find that you are working with people of differing knowledge bases, backgrounds and skills. Identifying individual strengths and weaknesses can determine the success and efficiency of the team.

As part of the training programme you will be involved in many audit and quality improvement projects and these can be a good opportunity to partner up with other people to share ideas and workload. This also acts as a good foundation for submission of work to conferences and journals.

2 Get involved

There are many opportunities available for learning and development. Use your personal development plan to determine areas that require improvement and to direct how you would like to progress. There are many courses and conferences that you can choose to attend and these can also be a good opportunity for networking and socialising. You will have regular meetings with an allocated educational supervisor who is there for support and they will be able to provide advice on how to improve. It is important to be proactive in your work in order to show commitment to a specialty. This can be done by registering with dental societies and attending relevant continuous professional development courses.

There are also many opportunities to be involved in organising and participating in journal clubs and rota organisation. These are indicative of good management and leaderships skills.

Postgraduate exams such as the MFDS (Member of the Faculty of Dental Surgeons) are included in the essential criteria when applying for specialty training posts and dental core training provides a good platform in order to practice your communication and treatment planning skills.

3 Communication is key

It is common for dental core trainees to have to communicate with the whole dental team and also other integral members of secondary and tertiary care services. These may be secretarial and administration staff, laboratory staff, radiologists, medical doctors and consultants. At first this may seem daunting and in a large NHS system it can often be hard to know who to ask for advice. My experience is that most people are welcoming and understanding and being clear and concise can often ensure you receive and transfer the best possible information.

4 Keep calm

Dental core training comes with challenges and pressures and with this also comes a certain level of stress. It is useful to know how to control this stress. Having hobbies and interests outside work, and socialising with friends and family can often be a stress buster. Exercise and sports can help mental health and act as a tension reliever and courses and books are also available on 'Mindfulness' and stress reduction. However, everyone is different and you may already be aware of what you like to do to relive stress. Talking to someone when you feel low or worried can be all you need sometimes to feel more positive and reassured. There are lots of people around to listen and help anytime you need to.

5 The 4 Ps

Prizes, presentations, posters and publications are key to progression and career development. The way to get these is to get involved in audit, research and quality improvement projects. These can then be submitted to journals and conferences. It's good to record these in your portfolio to show evidence of engagement in your post.

6 Write it down

To-do lists not only reduce the pressure to remember but also ensure nothing is missed. As a junior member of staff it often falls to you to do a lot of background planning for patient care, for example liaison with medical teams and organising investigations prior to treatment. This is particularly true in a maxillofacial surgery rotation; in this particular post having to juggle multiple tasks can mean it i smore common to make mistakes. Checklists have been used in aviation for years, mainly for safety, and there is a reason for this. The ward and dental nurses will use some form of checklist daily to ensure equipment works properly and that departments are complying with regulations. It's a simple concept but can be very useful.

Furthermore, the importance of contemporaneous and concise clinical note taking is essential for the transfer of information and is also important medico-legally therefore it is good to get into the habit of this at an early stage.

BE ORAL CANCER AWARE… REMEMBER THE '7 DEADLY SIGNS'

Oral cancer is defined by the World Health Organisation as any cancer of the lip, oral cavity, nasopharynx and pharynx.[1] **Beth Bradley**, a 4th year at Leeds University, highlights the signs.

Dentists and dental students play a vital role in the early detection and prevention of oral cancer (Fig. 1). The sooner an oral cancer is diagnosed the better chance of survival a patient will have. This is why, as dental students it is paramount we know the risks, signs and symptoms to look out for.

Below is an acronym designed to help students across the country remember the 7 signs to look out for when screening patients for oral cancer.

C is for cigarette, cigar and pipe smoking and chewing tobacco

When reviewing a patient's social history it is vital to quantify and address their smoking status. Smoking is the leading cause of mouth cancer and making your patient aware of the hazardous effects within their mouth is *vital*.

Chewing tobacco has increased use in some minority ethnic and religious groups. It is therefore important to identify patients who do so and warn them of the link to oral cancer. Habitual pan chewing is associated with early presentation of oral submucous fibrosis, which can be a precursor of oral cancer.[2]

THE FACTS

- A smoker is 3 times more likely to develop mouth cancer than a non-smoker[3]
- More than 60% of mouth and throat cancers are caused by smoking[4]
- Chewing betel quid, pan masala, gutkha and chewing tobacco are closely linked to increased oral cancer risk.[2]

A is for alcohol intake is high

An accurate alcohol intake history will help identify patients who are at risk of developing oral cancer. Use of the 'AUDIT-C' alcohol screening tool can be used to identify at-risk patients.[5] Patients demonstrating drinking alcohol to excess should be recognised and counselled appropriately.

THE FACTS

Drinking alcohol to excess on a regular basis increases oral cancer risk by 30%. (Cancer Research UK, 2018)

The 'Danger Group' for oral cancer are patients who smoke and drink to excess regularly.[3]

N is for non – healing ulcer

Any ulcer which fails to heal within 2-3 weeks should be deemed suspicious (Fig. 2). If appropriate management has had no effect and no differential diagnosis can be agreed upon.[3]

Oral SCC of tongue

What is normal?

A key aspect of identifying suspicious lesions within the mouth, is having an acute awareness of what is deemed 'normal' (Fig. 3).

When reviewing lesions within the mouth the following clinical features should be deemed suspicious:

- **Induration** – a thickening and hardening of the soft tissues
- **Growth** – any enlarging elevated lump
- **Fixation** – lack of mobility of a lesion
- **White / Red Patches** – Erythroplakia/ Leukoplakia/Mixed lesions
- Unexplained **Tooth Mobility**
- Unexplained **Pain / Paraesthesia** with no apparent cause
- **Dysphagia** with no related diagnosis.

Fig. 1 (British Dental Association, 2018)

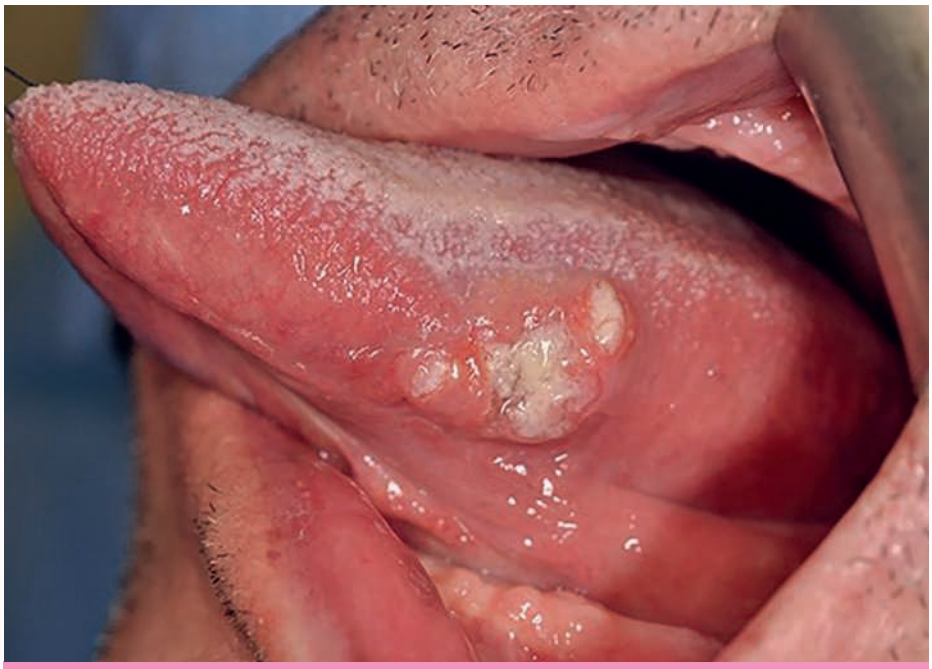


Fig. 2 (Credit: Cancer Research UK, 2018)

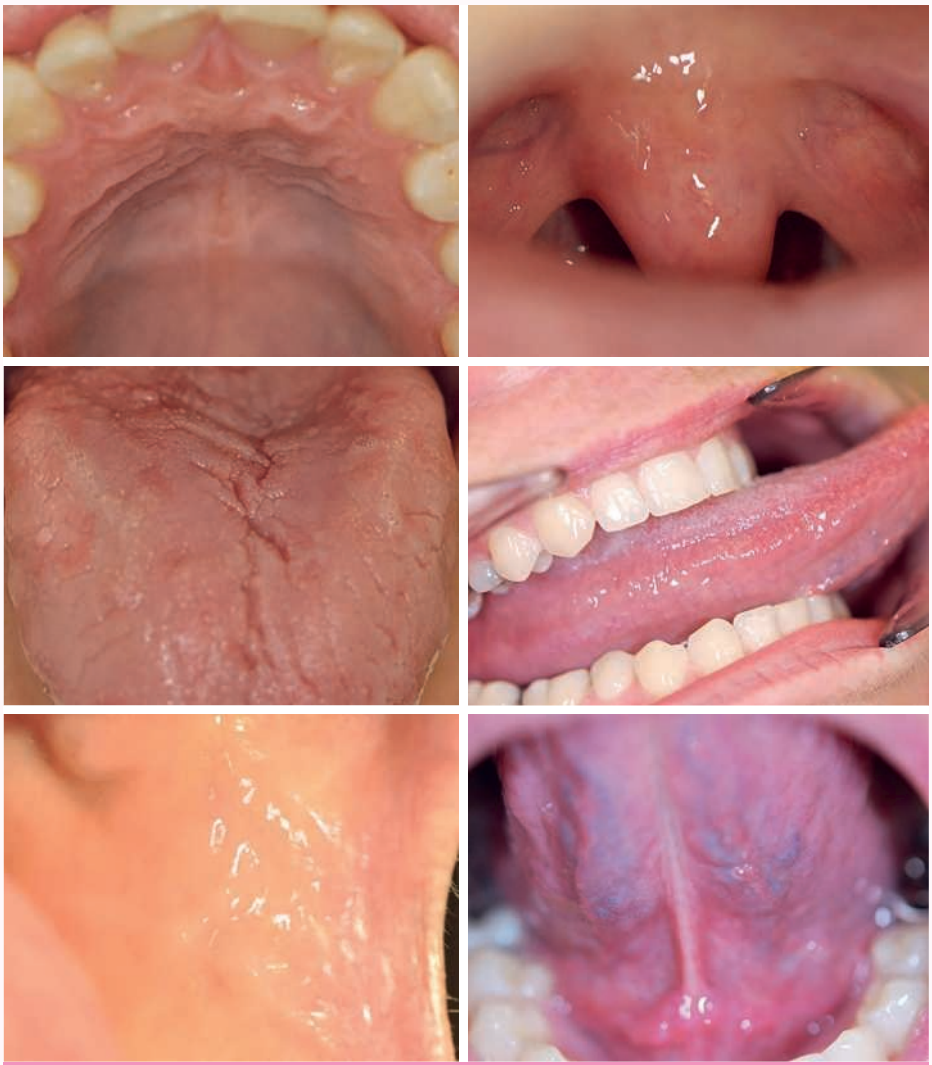


Fig. 3 (Source: Cancer Research UK, 2018)

C is for cancer history

A history of a squamous cell carcinoma (SCC) within the head and neck region of a first degree family member may increase a patient's risk of developing an SCC both within the oral cavity and/or head and neck region.[6]

It is vital to ascertain this information to appropriately risk assess these patients.

E is for extra and intra oral examinations

An examination of a patient must be carried out in a systematic and thorough pattern to limit risk of missing essential areas of interest.

'The patient needs to consume a diet with sufficient fruit and vegetables to reduce risks of oral cancer'

Extra-oral examination begins from the moment a patient enters your surgery, observing a patient's general well-being, any asymmetry, swellings, blemishes, moles, skin lesions and pigmentations. From this point, conduct a stepwise examination of the extra-oral soft tissues including:

1. Lips
2. TMJ
3. Muscles of mastication
4. Lymph nodes, examined thoroughly assessing for any enlargement or pain.
   - Submandibular, upper, middle and deep cervical nodes are most commonly associated with intra oral lesions.
   - Enlarged areas which are free from pain may suggest cancer and require further investigation.

Intra-oral examination should also be conducted in a systematic and repeated pattern as shown below (Fig. 4).

R is for refer when in doubt

If you diagnose a lesion within the mouth which you are concerned about, particularly if the patient fits the description of the 'danger group', you should consult your clinical tutor about making an appropriate referral.

You may wish to use clinical photography to record the lesion at the time of recognition, in order to be able to identify any changes or progression of the lesion.

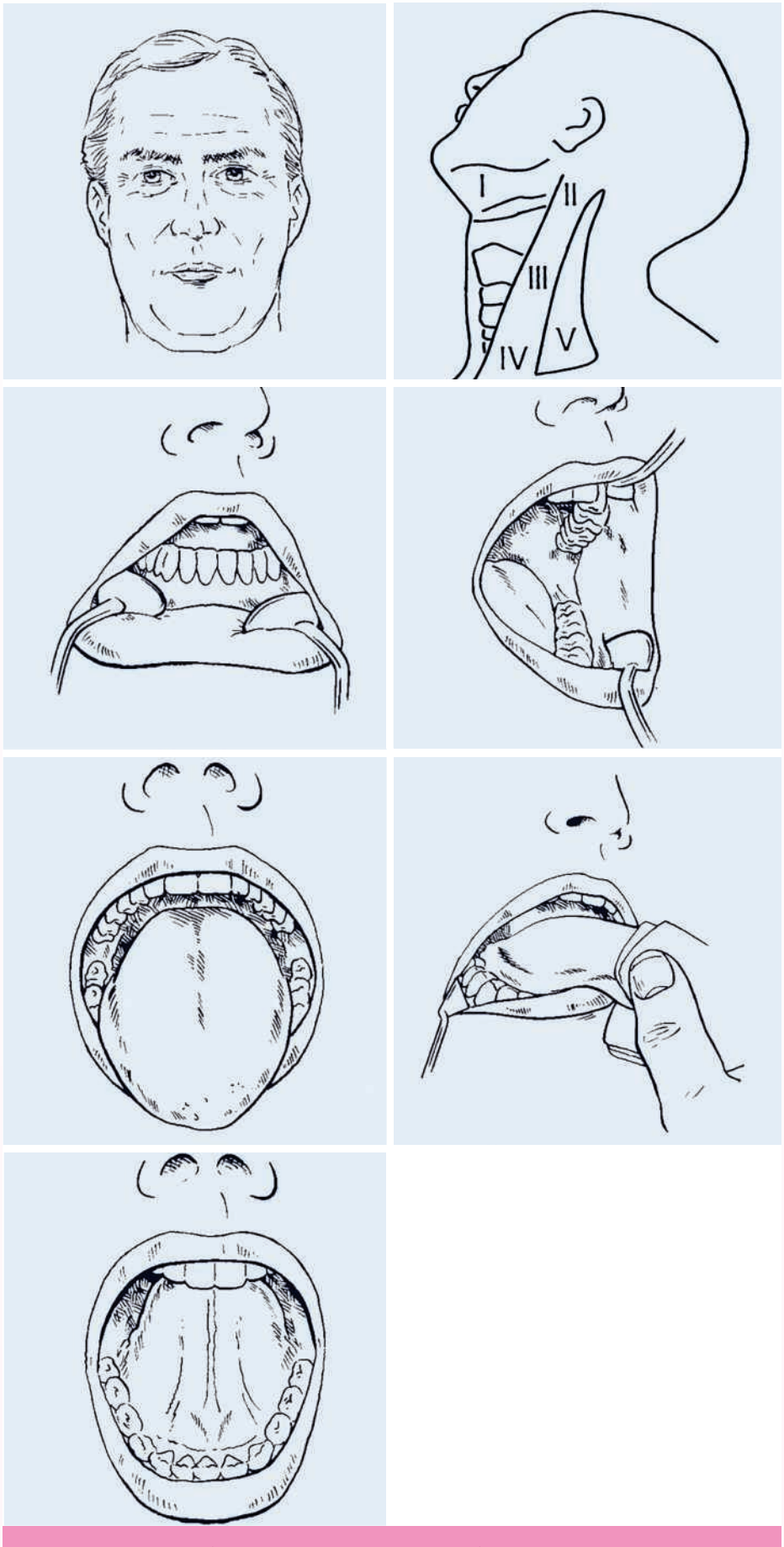


Fig. 4 Intra-oral examination (Source: British Dental Association, 2010)

NICE guidelines should be utilised to ensure a correct referral has been made.

! is for anything else?

The Human Papillomavirus (HPV) has recently been suggested, will overtake smoking as the leading risk factor for oral cancer within the next 10 years.[3] It is important that you alert you patient to this link between the extremely common sexually transmitted disease and oral cancer. You should be aware of any history of HPV from your assessment of the patient's medical history and, if appropriate making sure the patient is aware of vaccination possibilities as a helpful preventative measure.

Diet can influence a patient's risk of developing an oral cancer. You should appropriately tailor advice to ensure the patient is consuming a diet with sufficient fruit and vegetables required to provide the necessary vitamins and minerals to reduce risks of oral cancer. Tip: diet sheets should be utilised here as they are not just for assessing dental caries!

Ultraviolet exposure can cause skin cancers of the head and neck such as squamous cell carcinomas, basal cell carcinoma and malignant melanomas. These can present on the lips, so where necessary you should counsel patients in measures of avoiding too much UV exposure.[2]

So, next time you are faced with a new patient examination, or have a concern about a current patient use the acronym 'C-A-N-C-E-R-!' to remember the '7 Deadly Signs' when screening for oral cancer.

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Beth Bradley

COMMUNICATION: IS IT REALLY *THAT* NECESSARY?

By **Shyam Karia**,
5th year BDS student at Cardiff University

If you were asked what one factor makes a successful dentist, what would you say?

For me, it's taken close to three years of clinical experience to be able to answer this question confidently and now, without a doubt, I'd say it is communication. Even though our dental schools concentrate on teaching us the academic and the clinical elements of dentistry, we must not forget that, ultimately, dentistry is about caring for our patients. The ability to communicate effectively is a soft skill which I feel is salient to dentistry, yet all too often its importance is neglected and it ends up taking a back seat. Regardless of our clinical talents, effective communication skills are essential if we are to become the successful well-rounded practitioners that we all aspire to be. I believe that communication is 99% of our job, and here's why.

What does effective communication involve?

Patient-centred care is what all clinicians should strive to deliver and it is identified by The Institute of Medicine as an essential aspect of high quality care.[1] Delivering such care requires practitioners to use effective communication to respect and respond to patients' needs, emotions and expectations. However, in order to fully appreciate why communication is so important, first we need to understand what it involves.

Effective communication is a bidirectional process which begins with listening. Commonly, listening is misunderstood as a passive process, but in fact it is highly active and is actually quite a challenge to accomplish effectively. Moving off in our own thoughts and drowning out the speaker is something that we are all guilty of. However, skilful practitioners not only listen to their patients' words, but encourage them to talk, paying attention to the emotive elements behind what is being said.[2] Aptly called 'listening with the 3rd ear', this useful technique allows practitioners to derive a broader picture from their patients' narrative and by providing a sympathetic ear, it is often a remedy in itself.

Appreciating the true importance of listening is a crucial lesson and its one which I learnt on clinic. More often than not, we're faced with the difficult issue of reassuring emotional patients in our dental chair and I recall a similar patient interaction. After asking my patient the details of their case, I was caught off-guard by an onslaught of emotions pent up from the stress and turmoil of daily life. However, out of the corner of my eye I saw one of the nurses signalling to me that I should probe further into this. Rapidly the situation diffused and in this case I was able to provide her with a listening ear and she was genuinely glad to have someone to which she could 'open up' and express her thoughts and feelings. It was a humbling and memorable encounter.

Of course, communication is not just restricted to verbal aspects. For patients, actions truly do speak louder than words. Non-verbal communication represents 65% of our total communication and when mixed messages are sent between verbal and non-verbal aspects, patients are more likely to believe the latter.[2] The effectiveness of non-verbal cues like maintaining eye contact and posture, and the use of pauses, proximity and facial expressions should not be under-emphasised. They are key to reinforcing your spoken messages!

Patient satisfaction and adherence to treatment

When dentists go to sleep at night, I bet they all dream about achieving 100% patient satisfaction rates! And, considering that satisfied patients are happy patients and happy patients mean happy dentists – why shouldn't they?

Surprisingly, research highlights that patients predominantly use the dentist's altruistic and communication abilities to assess the quality of their care, not the dentist's clinical abilities.[1,3] Therefore, those patients who feel respected, cared for and listened to will ultimately report higher rates of patient satisfaction and not only will they continue their care with you, but they'll also make recommendations to friends and family.

It is generally thought that satisfied patients place a greater level of trust in their clinician – and this couldn't be more correct. Satisfied patients are more appreciative of their own responsibility within their treatment and they're more likely to be compliant to advice.[4] The end result – improved treatment outcomes.

Decision making and valid consent

Nowadays, dentistry is developing at an exponential rate and consequently there are multiple solutions to a single problem. Although this gives great flexibility in treatments which can be offered to patients, our treatment plans should be tailored and individualised.

Those of you in the later stages of dental school, will appreciate the importance of clearly communicating to patients the benefits and pitfalls of all viable treatment options, in order to gain valid consent. However, often when you are rushed for time and have lots of information to deliver, it can be all too easy to talk your way round in circles and deliver irrelevant information full of jargon. At the end of such appointments, asking your nurse for their feedback on how effectively they felt you communicated, can be a helpful method of assessing and developing your communication strategy.

Malpractice

No one likes talking about malpractice, but as a result of living in an age where information is readily available at our fingertips, malpractice claims are increasingly prevalent.[5] At its essence, literature shows that a significant proportion of malpractice claims stem from a communication breakdown between the patient and the practitioner, leading to inadequate levels of emotional support and information sharing.[3] However, many patients are actually very forgiving. Human error is normal and if mistakes are made, accepting responsibility and managing the situation, in order to put patients at ease, will often diffuse the situation. Hence, not only is effective communication essential for avoiding tricky situations, but for getting out of them too.

Anxious patients

According to the British Dental Industry Association (BDIA), in 2012 approximately 2.5 million people from the UK said they were too fearful to visit the dentist.[6] Dental anxiety is an emotional state that has a significant impact on patient quality of life and it is something that we will all see in our careers, if not at dental school. If dental anxiety is not managed, patients run the risk of falling into a self-perpetuating vicious cycle of decline: patients' fear of dental treatment leads to avoidance which can result in worsening of their oral disease. Treatment of this may require increasingly complex interventions, thereby exacerbating the patients' anxiety and feeding the cycle. Although a range of pharmacological and non-pharmacological approaches can be used to manage dental anxiety, the importance of building rapport and trust shouldn't be underestimated. These underpinned with effective communication should form the foundation of any approach; and as I discovered (as highlighted below) it can really work wonders!

Mrs A was a patient I first saw on a sedation clinic and her care has been a critical point in my undergraduate clinical experience. She was an obviously nervous patient and sitting her down in my dental chair for the very first time, she began to tell me how her fear of dental treatment had led to an inability to sleep at night, especially when a dental appointment was 'imminent'. She also expressed certain aspects of dentistry that she feared the most and discussing these with my supervisor, we agreed that it would be in Mrs A best interest to try non-pharmacological management first. The key was to try and build some rapport by introducing techniques such as stop-signals, tell-show-do and positive reinforcement. Alongside this, we listened and addressed Mrs A concerns and slowly but surely we gained her trust. Mrs A became willing to accept dental treatment without sedation and now to my surprise she even accepts treatment on routine dental clinics!

My top tips for effective patient communication

1. Listen carefully and pay attention to the emotive elements behind what is being said
2. Be open and honest
3. Use non-verbal communication to reinforce your spoken messages
4. Involve the patient in their care
5. Don't be afraid to make mistakes - practice makes perfect!

In the demands of modern day dentistry, we can get so focused on treating the tooth that it becomes easy to overlook the fact that it is the patient we are caring for. Granted dentistry is often fast paced, placing time restraints on us; however, we should not let this influence the quality of care we deliver. Effective communication and the ability to build rapport are essential skills that should be present in a dentist's repertoire and in their absence, developing a successful patient-dentist relationship becomes altogether more difficult. The reason that the above experience will always be memorable to me is because it opened my eyes to the many possible benefits that adopting a patient centred approach has. It will always be a reminder that communication is the first and most important aspect of our job, then everything else follows.

Shyam Karia ■

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DENTISTRY IN AN 'INSTANT GRATIFICATION' SOCIETY

IWWIWWIWI. Far from being a random assortment of letters, it stands for a phrase increasingly common in mainstream marketing circles first coined by Dr Kit Yarrow; *I want what I want when I want it.*

Consumers are so overwhelmed by the volume of information in their lives that they ignore information before they need it, but expect immediate solutions when they need them. And dentistry is no different. **Claire Dewshi**, 4th year dental student at King's College London, tells us what dentistry is doing to keep up with the changes.

We live in an era where we can get everything we want at a touch of a button. From Deliveroo to Uber, Asos to Ocado, the internet and apps have us covered. Wait seven working days for a delivery? No; Amazon Prime can give it to you in 24 hours. If a video takes more than three seconds to buffer, we scroll past it. That is how thin our patience has been stretched.

So what does this mean for dentistry? More and more patients today want their mouths to be perfect in one appointment. Trying to convince a patient that they need to have healthy gums before we can give them a fixed or removable appliance is sometimes a challenge.

But technology has advanced and we should not be afraid to use what we have at our fingertips for the best interest of our patients. Here are a couple of key innovations which may just appease our need for consumer instant gratification.

Impressions

Digital dental impressions use either an LED light or a laser to record an image of the mouth straight onto the computer. This technique is growing in popularity as it is easier, cleaner and more importantly faster than taking standard impressions. Information can be downloaded directly to the lab's milling units to produce CAD/CAM restorations within hours. You don't need stone model work and there are no distortion issues or casting errors. Other time savings include tray selection, material dispensing and disinfection. It is more environmentally friendly as there is no packaging of the impression, writing the lab script, or postage since online prescriptions are sent electronically.

This means greater accuracy when restoring multiple units, such as veneer cases or complex bridge work, and greater efficiency in our working lives. You can review your digital impression immediately and rescan any problematic areas.

The patient can also see the image there and then, making them more engaged in the process. Instant gratification – check.

CAD/CAM

Furthermore, if you have a CAD/CAM construction milling unit on site, you can even make your prostheses and hand it to the patient on the same day.

CEREC (Chairside Economical Restoration of (A)Esthetic Ceramics) is a type of CAD/CAM dentistry used to fabricate restorations. Although it has been around for roughly thirty years, recently it has had a popularity boost as it is becomes more affordable.

In the future, it is predicted that CEREC will be able to incorporate 'automatic restoration design' based on patient factors, such as skeletal and arch classifications, toothwear, excursive movements, TMJ condition, condylar movements and of course, aesthetic concerns.

3D Printing

Many people get confused between CAD/CAM and 3D printing as they are both similar in end product, but the process is different. Whereas CAD/CAM always uses a subtractive process (cutting away material from a larger block), 3D printing is additive (fuses layers of material together in the correct shape and form).

Currently, printers are used to make things like implant surgical guides, restorative setups, orthodontic aligners and retainers, dentures, night-guards and temporary crowns.

With recent advancement in hardware, this field is growing at a surprisingly fast rate, but sadly we need research into dental materials to catch up before major progress is made. Basically keep your eyes open and watch this space!

'Same day' dentistry

Practices now offer 'teeth in a day' where they promise patients that they are able to go from 'total tooth loss to having new fixed teeth in one treatment session'.

They advertise IV sedation so the patient will wake up with the implants in the jaw and can then choose the provisional bridge to complete the look – all in one afternoon.

Further steps of the procedure are outlined, and follow up appointments are made, but the ability for a patient to walk into a surgery without teeth at lunch time and leave smiling confidently by dinner is incredible.

Advantages

For nervous patients, of which there are many, fewer visits to the dental surgery is obviously a good thing. Technology has also made the entire process smoother and more accurate, leading to fewer recall and adjustment sessions.

Function is restored instantaneously so patients can speak and chew again like normal. Confidence is regained as they can smile without feeling self-conscious. When you give someone their teeth back, you are not simply giving them acrylic, but so much more.

Disadvantages

Of course, if a patient is having implants we need to think about long term maintenance. The patient will need immaculate oral hygiene to prevent peri-implantitis and even then, the long term success of implants are affected by a number of variables. Although the smile may be ready in no time, whether it will stay there is a different matter.

As future dentists, we have to be careful about explaining the longevity of dental work. Although the patient may be instantly happy, we have to remind them that proper maintenance is required.

Cost is also an issue. You need deep pockets to afford this kind of dental work which is very rarely available on the NHS. Be prepared to spend at least £1,000 per implant, and if you want to restore your whole arch in one day, this price can easily be nearer the £10,000 mark.

Whitening

Instant gratification is mainly a vice of young adults. Millennials are expected to take 22,700 selfies in their lifetime1 so it is no surprise that more and more young people are becoming more self-conscious about their teeth.

DIY home whitening kits are a solution, but many people opt for in-surgery whitening simply because they advertise 'instant results' up to '12 shades lighter'.

What many patients don't realise is that the effects are not permanent. If you continue with the same habits, the same stains will reappear. Not only will staining remain, but side effects such as sensitivity are often overlooked when patients desperately want a quick-fix. Composite restorations will not be lightened, deep intrinsic stains won't change. If a patient has aesthetic concerns, you may consider replacing amalgam restorations after the whitening treatment to get a uniform dentition.

As a dentist it is your role to highlight this information before you start treatment. We have to be careful to assess if the quick and easy option the patient seeks is really as simple as it sounds.

Veneering teeth would be the next possible option, but since the main group of people interested in having a perfectly white straight smile are in their twenties, it means removing a lot of structurally sound teeth at an early age. Of course, these veneers are going to need replacing after less than a decade, which means these patients are going to be needing extensive treatment multiple times throughout their lives. Long-term consequences need to be considered when we try to get instant results. Ethically, we need to think if it is just to pick up a drill in the era of the Minimally Invasive movement. We need to understand which non-operative methods can be tried first.

Dental perspective

But we ourselves aren't immune to the epidemic of instant gratification. We want to dive in and cut our first crowns and bridges, or make dentures for patients immediately rather than wait 6 months for the perio treatment to be carried out. After an extraction, we need to let the bone heal and monitor this slow, biological process to ensure it is going smoothly. Years of technological advancement cannot speed up the normal human body. Sadly Apple have not invented superfast osteoblasts... yet!

Sometimes we need to take a moment and look holistically at the patient before we finalise our treatment plan. We must always remember to put the patient's interests first because they are the ones who are going to be spending years with our restorations in their mouths, whereas we are only going to see them for a matter of hours.

Conclusion

The world is changing faster than we could ever imagine. Before you know it, the iPhone 11 will be out, you will have upgraded your tablet twice, bought a new laptop and received a new Fitbit for Christmas. Just trying to keep up is tiring.

It can sometimes feel the same with dentistry, but the important thing to realise is that basic principles will never change. You still need foundations before you build a house, just as you still need a stable patient before you restore their dentition.

We can hasten the process thanks to significant advancements in technology such as digital impressions and new implant techniques, but the principle behind good work is to have a good plan. Behind every good plan is a great dentist. And you absolutely need at least five years of education for that.

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Claire Dewshi ■

ETHICAL DILEMMA

Alison Large, dento-legal advisor at the DDU, poses another ethical dilemma and what you should do…

I am working in a dental practice and have concerns about a senior colleague. He always seems in a rush, isn't very good at explaining treatment options or their benefits and risks very well and often seems irritated if a patient asks for more information.

Most of his patients seem happy enough with his treatment but the way he behaves goes against what I was taught at dental school. I know I have a duty to raise concerns if I am worried about a colleague's behaviour, but I only graduated a few months ago where as my colleague has years of experience. What should I do?

Dental professionals have a duty to tell someone if they have concerns about a colleague. For newly qualified dentists this can be a worry, especially if the person they are considering raising concerns about is much more experienced. It is always advisable to consider whether your outlined concerns are based on fact or opinion, and whether the information has been gained by direct observation, or reported via a third party e.g. a patient, or work colleague. How you approach this matter will vary depending on the circumstances and your defence organisation will be able to assist you when you are deciding what to do.

Principle 8 of Standards for the Dental Team is to 'raise concerns if patients are at risk'. This means all dental professionals have a professional responsibility to speak up if they witness treatment or behaviour which poses a risk to patients or colleagues. There is also further GDC guidance specifically about raising concerns which aims to help guide dental professionals on what steps to take if they think patients or colleagues may be at risk. The guidance reminds dental professionals of their responsibility to raise concerns, explains why and how to raise a concern and provides sources of help and advice. It also reminds practice managers and employers of their duty to support a workplace culture where staff can speak about issues openly and without fear of reprisal.

'If a concern turns out to be nothing serious, a dental professional's actions will not be viewed badly as long as they acted honestly, used the right channels and had patients' or colleagues' best interests in mind'

The DDU receives many calls each year from members who are wondering whether they should raise concerns. It is important not to turn a blind eye to issues such as a colleague's poor performance or lack of resources, which could cause harm to patients. Even if a concern turns out to be nothing serious, a dental professional's actions will not be viewed badly as long as they acted honestly, used the right channels and had patients' or colleagues' best interests in mind.

You should report your concerns promptly, following local policies. Concerns should be put in writing with as much detail as possible and a written response requested so that you know they have been dealt with. It is important to stick to the facts and not to let your personal feelings about a colleague, good or bad, get in the way of you raising concerns. Make sure you keep a record of the issues that led to you raising concerns and also keep a copy of your letter.

On occasion you may be aware of other colleagues who share your worries. In those circumstances you may wish to consider writing a joint letter of concern which may add more weight to your concerns and have a greater impact.

If after you raise concerns, no action is taken to address the issues that you have raised and you are worried that a patient may be harmed as a result, you may have to escalate your concerns further by informing the CQC or the GDC. Although in most circumstances it will be sufficient to initially raise concerns within the workplace, on rare occasions, it may be necessary to go straight to the GDC, for example, if you are aware of a colleague working without professional indemnity or if you fear they are working under the influence of drugs or alcohol. If you feel this is necessary you should again, keep a record of your concerns and the fact you have raised them.

In any case, if you are considering raising concerns about your colleague, you should contact your dental defence organisation for advice and assistance in the first instance. They will be able to guide you through the process and offer support.

Alison Large ■

INTERVIEWEE

Martin Jones, works in Manchester as a restorative registrar, training to become a specialist consultant in restorative dentistry.

WHAT IS AN MJDF?

Martin Jones and **Nick Powrie** talk to *BDJ Student* about the career paths they chose.

Throughout your dental career, there will be a point where you may consider the relative merits of undertaking additional postgraduate qualifications. But with various qualifications on offer, how do you decide which best suits you? And when you spend time studying for your degree, when is the best time to take the next step?

One option is to take the two-part Membership of the Joint Dental Faculties (MJDF) which is run by the Faculty of General Dental Practice and the Faculty of Dental Surgeons. MJDF is considered to be the only examination of its type that truly covers primary and secondary care dentistry and tests candidates on the skills and knowledge used in practice.

What first led you to consider the MJDF?

MJ I first heard about it at Warwick Medical School and at the time I wasn't really sure which way I wanted to go career-wise – general practice or a hospital-based specialty-training route. I knew for hospital careers it's pretty much essential to have some kind of Royal College membership to progress. I also knew that it might help me stand out in general practice if I decided to go down that route. So that's why I decided to take the MJDF as it combines both options.

NP I knew at some point I wanted to do postgraduate work and continued education and the MJDF is a bit of a prerequisite, which is the main reason I wanted to do it. It's also a good refresher post-foundation year to get back into the academic world and way of working after having left university.

When did you take the MJDF?

MJ I sat part 1 of the exam about halfway through my DF1 job. I had just finished my finals exams and so all the material was quite fresh in my mind and, although you may not feel like it in VT, compared to later years you do have quite a lot of free time to revise. I sat Part 2 halfway through my first hospital job, my dental core-training job. I chose timing over location and actually travelled to Leeds for the exam from London.

NP I did the first part of MJDF after my foundation year. I then did Part 2 a couple of years later.

MJDF is in two parts. Can you outline the process for these in your experience?

MJ Part 1 should be fairly familiar with most dentists and dental students because it's mainly multiple choice questions. It's a completely written exam. So, it's the same kind of material as finals, the same kind of exam style, so, that's not usually too dissimilar.

The second part is more objective structured clinical examination (OSCE)-based or viva-based (where questions are answered in speech rather than writing) which again most people have had some kind of experience of at dental school at undergraduate level. You probably spend a little bit longer with each examiner than you might have done at a university. Each station is probably about ten minutes.

NP It's fair to say the MJDF Part 1 & 2 is very similar to finals, in the sense that you have some written exams, some vivas and you have work-stations. There are actor patients as well. So it's quite similar in that respect.

Are there any options for revision support from the Faculties for MJDF?

MJ I attended a revision day for MJDF Part 2 at the Royal College, in London, which was really useful. Although we weren't told what was going to be on the exam, we were given an idea of the types of questions so that we could prepare for it. But they don't give away the answers too easily!

NP I attended one of the study days at the Royal College of Surgeons, and it was very useful hearing from student dentists who'd sat the exam before about what comes up; what the exam entails. It was very useful to do, and very good value for money as well!

How do you feel you benefit from MJDF in your career now?

MJ I'm following a very hospital-based career pathway heading towards consultancy and specialist-level training. For me, it's pretty much essential, really. Although it's not actually an essential criterion, it's desirable when you come to a specialty-level entry. It's so competitive. If you didn't have a Royal College membership you stand out for the wrong reasons, and you probably wouldn't get too much of a look-in, because there are just so many good candidates.

Even before you get to that level every hospital job I've had it's been on the desirable-person specification, so it's probably helped me get each job I've had on that ladder to where I am now. And then my general-practice side of things, as well, I worked for a time in a private practice. The practice principal had done lots of courses with the Royal College of Surgeons, such as the implant course and several others, and I think, or I hope anyway, when he looked at my CV he realised that I was also affiliated with a Royal College. That might have given me a little bit of an edge over the other applicants. I think, it might have helped me get that private-practice job, so it's equally valuable even outside hospital.

NP The long-term support from the Faculties following the MJDF exam is one of the main benefits. Access to all the FGDP(UK) publications and guidelines is very useful, because they are considered gold standard, and it can really help especially in today's environment. What's more the *Primary Dental Care Journal* is an excellent reference material with really good evidence and articles in it.

Upon passing the MJDF you can become a member of the two dental faculties for less than the price of one. How has being a member of the Faculties helped your career?

MJ For me I think having it on your CV has really helped getting hospital and general-practice jobs, and even a private practice job. The opportunity to network with like-minded people through the Faculty is also useful for your career. The membership includes lots of far more experienced people who are further through their careers than me who I can talk to, through the college, for advice and help in progressing my career.

Membership of the two Faculties means dedicated support in primary care from FGDP(UK) and in secondary care from FDS. How do you think the MJDF relates to both primary/secondary care dentistry careers?

MJ I think it relates more heavily than people think. Half of MJDF is the Faculty of General Dental Practitioners, which is purely aimed at general dental practitioners and the other half is actually more towards hospital based and specialty-based care through FDS. And with MJDF you have the option to make a decision on the best route to follow much later on in your career. That's one of the great things about it.

So, I think it can be beneficial for both, in kind of equal measures. It's quite versatile - you can take from it what you want.

NP The MJDF is good because, if you want to stay in general practice, it's a great tool for that. But equally if you want to stay in secondary care, it's perfect for that as well. So it is a good exam to do because it lets you go down either avenue.

Any tips for students thinking about next steps?

MJ The first tip would be that although immediately after finals you may have a strong desire to have a ceremonial bonfire with your notes you took, try to resist the urge because they will become really useful, particularly for Part 1 of the exam. The second piece of advice would be start as soon as you can. If it is still fresh in your mind from finals it saves a lot of additional revision time!

I think it's a really good thing to do at the start of your career in order to get the maximum benefit from it as soon as possible.

NP One of the really good things for me about sitting MJDF was that, after leaving university, you get into your foundation year and you are not used to necessarily working and reading texts, journals etc. Sitting the MJDF provides some of the guidance having left formal education and encourages you to be self-directed.

Martin Jones and Nick Powrie ■

INTERVIEWEE

➤ *Nick Powrie graduated from Newcastle University, completed his foundation year and undertook a further 2 years in practice in London. He is now a dental associate in a practice near Manchester.*

MY SPECIALTY

In the second part of the series, **Claire Harwood**, **Arti Hindocha** and **Amanda Lim** guide you through three of the specialties available…

Oral Surgery

By Claire Harwood (STR in Oral Surgery)

Training? 3 or 4 year full-time (or equivalent) programme and passing the Membership of Oral Surgery examination (RCS England).

Approximate posts available for application each year? 1-3.

What they said

Oral Surgery is one of the first recognised dental specialties. The GDC defines Oral Surgery as dealing with 'the treatment and ongoing management of irregularities and pathology of the jaw and mouth that require surgical intervention'. Oral surgeons focus on surgical interventions to tackle jaw and mouth problems, including extraction of broken/decayed teeth, removal of non-cancerous lumps/cysts, facial trauma and implant placement. Oral surgeons can work in primary and secondary care as specialists (through specialist training), or with a special interest in the field. A medical degree is not required. Application for Oral Surgery specialist training in England and Scotland is via National Recruitment. Northern Ireland and Wales advertise posts locally. Specialist training is generally a 3-year (whole time equivalent) post (sometimes 4-years) after which certificate of completion of specialist training (CCST) will be awarded. Some centres offer a further 2-year post-CCST training that is assessed by the Intercollegiate Specialty Fellowship Examination (ISFE).

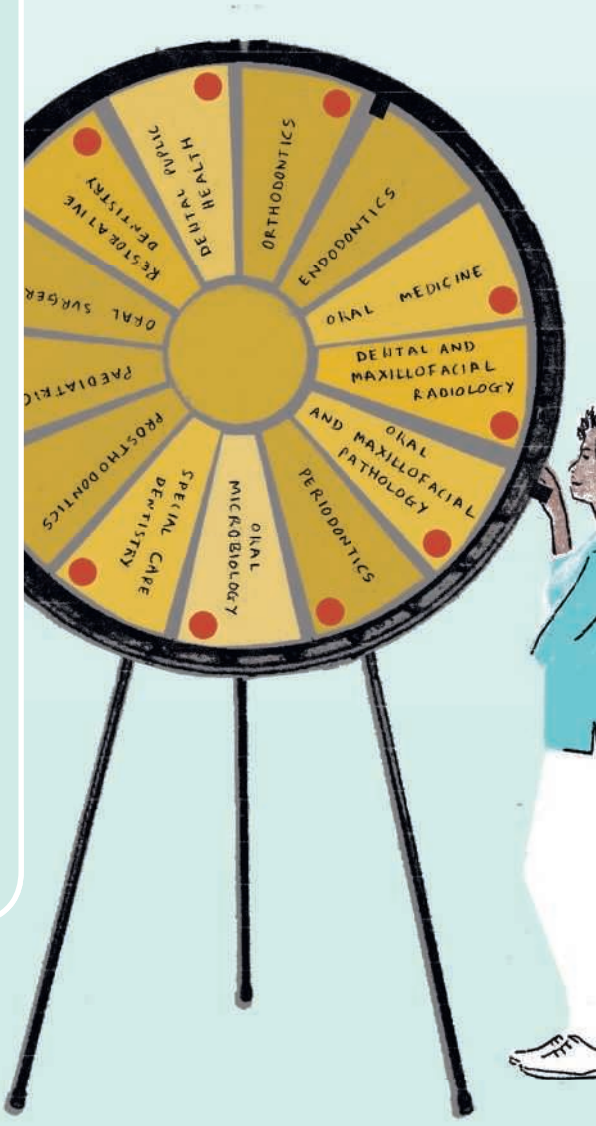
Claire's tips

If you are interested in Oral Surgery specialist training you must be:

- Able to evidence competencies (logbook and portfolio) of UK Foundation Training, Dental Core Training year 1 and, at the time of interview, Dental Core Training year 2
- Able to evidence participation in audit/service evaluation
- Able to show commitment to the specialty of Oral Surgery.

Applying for Specialist training in Oral Surgery is highly competitive (approximately 50 applicants per post), therefore further clinical experience is more desirable; many recent appointees have undertaken Staff, Asssociate Specialists or Specialty Doctor roles in Oral Surgery.

Membership of the British Association of Oral Surgeons (www.baos.org.uk) is encouraged and it provides access to useful resources and professional networking/educational opportunities for those interested in specialist training and a career in Oral Surgery. **Claire Harwood** ■



Orthodontics

By Arti Hindocha (POST CCST in Orthodontics)

Training? Three year full-time (or equivalent) programme, completing a self-funded university postgraduate degree (Master's (MSc, MClinDent, MPhil) or Doctorate (DDS) level). The trainee is then eligible to sit and must pass the Royal College of Surgeons Membership of Orthodontics (MOrth) examination[1].

Approximate posts available for application vary annually? 20-40 for specialist training, and 12-26 POST CCST positions (higher training).

What they said

Orthodontics is the branch of dentistry concerned with the growth of the teeth, jaws and face. Orthodontics can involve treating both adolescents and adults with a variety of appliances and these patients can be treated in orthodontic practices or hospital settings. An orthodontist can work in both the private and NHS sector.

In order to become a specialist orthodontist you must apply via National Recruitment for an Orthodontic StR training post in England, Wales, Scotland and Northern Ireland. Applications usually open in March and close in April; with interviews occurring in June. The posts are advertised either annually or every three years; with the exact number of posts varying year to year. Up-to-date information on available posts is released prior to interview and confirmed after interview. Training takes place within hospital departments.

The MOrth and Certificate of Completion of Specialist Training (CCST) allow for orthodontic specialist registration with the General Dental Council (GDC). Higher training can be undertaken for two more years to become an NHS Consultant. This involves developing on the skills already learnt, taking on more advanced and complex inter-disciplinary cases. Supervising and teaching of undergraduates and postgraduates, taking on of managerial roles and continuing involvement with audits and research also forms part of the higher training programme.

Arti's tips

You do not need any practical orthodontic experience to get into specialty training; avoid short term orthodontic courses. You do need to focus on career progression with both hospital and general practice jobs; focus particularly on maxillofacial jobs where you will most likely be linked to an orthodontic unit.

A great study day for those who are interested in orthodontic specialty training is the 'So you want to be an Orthodontist' Study Day on Friday 17th November 2017 in Manchester and 24th November 2017 in London. These days are organised by the Training Grades Group (TGG) of the British Orthodontic Society.

Join the British Orthodontic Society as a member of the Training Grades Group to keep up-to-date and come to a British Orthodontic Conference to get in insight into the profession.

[1]*Without the taught postgraduate degree the trainee is required to sit an additional examination and have two papers accepted for publication prior to completion of training to evidence the research competencies in the curriculum otherwise covered by the Postgraduate degree.* **Arti Hindocha** ■

Paediatric Dentistry

By Amanda Lim (STR in Paediatric Dentistry)

Training? 3-year full time (or equivalent) programme and passing the Royal College of Surgeons Membership of Paediatric Dentistry (MPaed) Examination.

Approximate posts available for application each year?
2-5 to train to be a specialist, 1-2 to train to become a consultant.

What they said

Paediatric dentistry is a branch of dentistry that involves treating children and young people under 18 years old often with medical concerns, extensive and/or dental disease and challenging behaviour. Most paediatric dentists work in a community dental setting or dental hospital, with a small proportion based in private practice. In this rewarding and challenging role, one can expect to practice comprehensive dental skills complimented with behaviour management techniques to deliver care to these young patients.

To become a Paediatric Dental Specialist in England, you will need to apply via National Recruitment, which recruits once or twice a year for all Paediatric Specialist Trainee Registrar jobs. Northern Ireland, Wales and Scotland recruit and advertise locally when posts become available.

Some training posts may have a (non-compulsory) option to undertake a self-funded MSc or equivalent qualification. If the training post is an ACF post, then this degree will be funded by NIHR.

You can undertake a further two years of training and complete the ISFE Paediatric Dentistry examination to become a Consultant, which may involve managerial roles, leading research, working in multi-disciplinary clinics and training of junior staff members.

Amanda's tips

If you are interested in paediatric dentistry, it is a good idea to keep a logbook/portfolio of cases that you treat or see, become involved in departmental audits, apply for elective prizes and take the opportunity to learn as much as you can as a dental student. Specialist training usually builds on your undergraduate knowledge by learning where the research/scientific evidence goes on to support evidence-based care that is currently practised. To keep up-to-date, join the British Society of Paediatric Dentistry. **Amanda Lim** ■

LIFE AS...

In our regular feature, we talk to students past and present about what it's like to spend a day in their shoes

A DFT DCT'S LIFE

Clare Hutchison graduated from Newcastle Dental School in 2016, and is currently working as a DFT DCT 2 in Yorkshire and Humber deanery. She completed her Dental Foundation Training year in Guiseley, and Dental core training aspect within Bradford Teaching Hospitals.

For as long as I can remember, I have always wanted to be a dentist, in practice, seeing the same patients every six months. That was until I went to university and learned just how much variation there was in the title dentist. From endodontics to maxillofacial, when faced with the prospect of deciding on a defined career path I felt like I was back at school picking my GSCEs—a little too inexperienced to be making a life-time decision.

Therefore, when I was choosing where to spend my foundation year, I was stumped. Though aware any Foundation Training (FT) job would bring challenges, I felt I needed something more. I was not ready to give the hospital setting up yet.

Having graduated from Newcastle I knew a little about the two-year schemes. I liked the idea of variation, though I felt Newcastle was too heavily restoratively based for me. I therefore decided to make DCTDFT in Yorkshire my first choice having pretty much no idea what this meant!

My place was gained though National Recruitment. After being told my ranking and scheme, I went to Leeds to meet all the potential trainers and prior DCTDFTs. It was a good opportunity to ask all my burning questions, and pick the practice/hospital that best suited me. Every year the practices are different, but in general the hospitals on offer are generally the same. The hospital jobs include options such as maxillofacial, restorative, or community. However, most hospitals have the scope to move between different facilities.

I am currently in my second year of the programme, which allows me to alternate weekly between general practice, and Bradford Teaching Hospitals Maxillofacial and Oral Surgery department.

This is composed of four hospitals from Halifax to Huddersfield, which is great because you work with a number of different people doing a variety of different things. Whether I am on call on the ward, or doing a local anaesthetic list, it doesn't get boring.

At points, you feel alone and under pressure, but there is always the comfort of your peers. There are a group of DCTs you work with in hospital, the group of DCTDFTS you have study days with, and you can always rely on your partner with whom you swap weeks.

It feels like a lot of responsibility, and really does prepare you for anything. I used to worry about trying new things at work, but have quickly learned there is no time for worry; now I feel like I can tackle almost anything.

What to expect

After a summer of celebrating the fact you are finally a dentist, you find yourself in what feels like a month of inductions. You have inductions for each aspect of the hospital, being an FD, and in practice. After filling your notebook full of door codes and passwords you will never remember, you are finally ready to start.

If you can find your ward!

I found the inductions really interesting, but a bit of an overload. My 'must remember page' of my notepad quickly became a notebook itself. There is only so much theory one person can learn, and after a summer of not picking up a drill I was eager to get my hands dirty.

When the time came to start, however, there was no shadowing or easing in, it was very much get stuck in.

You learn fast, with techniques that use to scare you, quickly becoming second nature. It is amazing how fast you progress.

Sometimes you feel like you are drowning with deep medical cases that are at the end of our remit, but then you get a dental abscess in, and life makes sense again.

A normal day on the ward consists of emergencies, such as facial trauma cases like fractured mandibles or orbits, large dental abscesses, post extraction complications, facial lacerations, and dental trauma.

Anything on the head and neck is our remit. We also assist in theatre for oncology head and neck dissections or excisions, repairing facial traumas, and draining swellings.

At the time of applying, I thought it would largely be taking teeth out, which some days it is, whether that be with sedation, local, or general anaesthetic.

I absolutely love the variation in my job. There is a lot of job satisfaction in helping people in acute need. Being able to stop someone's pain never gets routine. We commonly treat patients with severe dental anxiety, so good communication skills are key. It can be particularly difficult, when working through a translator with a patient who is in pain.

It has opened my eyes to the diversity of lives and cultures, of which I had limited knowledge. It is a complete contrast to my experience in practice, which is in a relatively affluent area, with an aged population!

Clare Hutchison ■


OUR JOURNEY AND A DROP IN THE DEEP END

Over 3 articles, **Kishan Patel** and **Mohammed Dungarwalla**, two Oral and Maxillofacial Surgery (OMFS) Dental Core Trainees (DCT) based at King's College Hospital (KCH), London give their insight into their roles at a major London trauma centre and why they feel a post in OMFS is an absolute must for any young dentist, regardless of career intentions.

The leap of faith From DF1 to DCT 1

One day we were making the referrals in practice to the local OMFS unit (or to ED), and before we knew it, it was us receiving them. It is safe to say, you will always remember your first day working as a Maxillofacial DCT – it's like you'll never forget your first patient in dental school.

You're suddenly thrust into the fast-paced, adrenaline pumping ED where senior doctors from other specialties are asking for your opinion on their patients, who have sustained maxillofacial injuries! Sometimes it is a simple facial laceration, other times it's pan-facial trauma, staying calm under pressure is extremely important, and it's always reassuring that your registrar on-call is only a phone call away! In the true sense, you suddenly become a junior doctor with a BDS after your name, and now you know the stakes are just that little bit higher!

> 'Even though my DCT 1 experience had me well prepared for this position, the level and extent of trauma I have witnessed so far this year never ceases to surprise me!'

At first, the resilience and our character was put to the test, but we look back on those first few months with fondness. It gave us the feeling that there was no limit to what we could achieve, with the right frame of mind and support from senior colleagues.

Progressing through the ranks: Mohammed on the move from DCT 1 to DCT 2

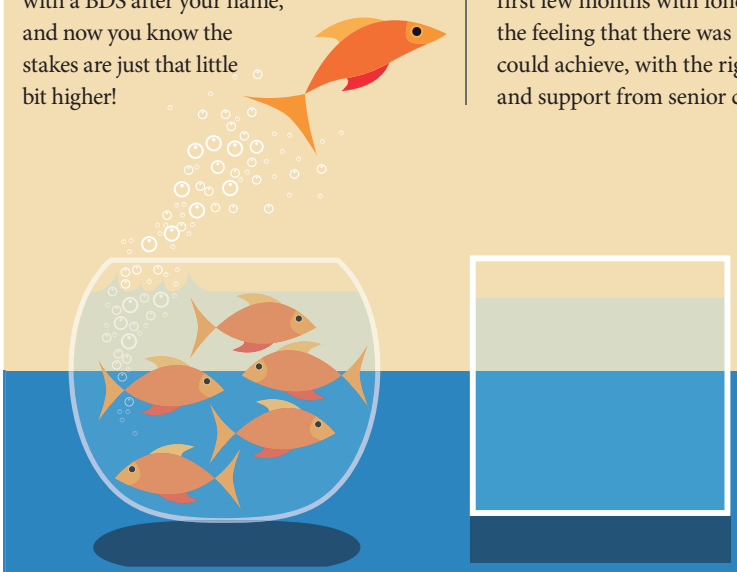
My DCT 1 year was spent in the OMFS department based at the Queen Victoria Hospital, East Grinstead which is world-renowned for head and neck surgery. At the time of applying for my DCT 2 post, I considered what further experience I wanted to gain in the early stages of my career. I was already keen on a career in OMFS and I knew that being at KCH would reveal another side to this surgical specialty that I had never seen before.

The patient base that I cared for has differed greatly between my two posts: in Queen Victoria Hospital, I managed head and neck oncology patients and at KCH, facial trauma forms the bread and butter of what we see. Even though my DCT 1 experience had me well prepared for this position, the level and extent of trauma I have witnessed so far this year never ceases to surprise me!

Once you have done an OMFS post, the transition to a new one is not as daunting but I felt that there was greater responsibility on me to support my colleagues who had not been exposed to this environment before. It has been a pleasure to join them in developing as clinicians in this short period of time, and it is testament to the hard work required from this post!

In the second article, we discuss how a post in OMFS can improve your CV, the operations undertaken at a tertiary trauma centre and the social opportunities involved in a hospital post.

Kishan Patel & Mohammed Dungarwalla ■



TRADING AS A DENTIST

Sophie Kwiatkowski, an accountant with PFM Dental Accountancy, explains financial essentials

As a student dentist you are used to your life being about studying and work. As you come to the end of your dental training, you will soon be faced with the additional task of having to complete an annual tax return. Having a dental specialist accountant can enable you to benefit from valuable advice both at the start and throughout your career – from experts who understand the unique attributes the dental industry offers.

There are several routes your career may take but the key thing to remember is that financial help is always at hand. There are three main ways in which you can trade as a dentist.

Self-employed associate

The responsibility for your taxes is entirely on you. By being self-employed, you must register under self-assessment with HMRC and declare all your income and expenses through your tax return each year. The onus is also on you to keep thorough business documentation. It is a legal requirement to keep your records for five years after the 31st January deadline of the relevant tax year. Here at PFM Dental Accountancy, we provide you with support to tackle the administrative side of being self-employed, including an expenses guide and a cash book.

Employed dentist

By remaining in employment, your tax and National Insurance contributions (NI) will continue to be calculated under PAYE. However, you are still entitled to claim expenses against your employment, which can further reduce your tax liability. Professional expenses such as subscriptions and indemnity insurance are the key costs that you can include. The main HMRC rule with expenses is that in order for them to be tax deductible, they need to have been 'wholly exclusively and necessarily incurred in the performance of your trade'. It is always worth asking for advice to ensure you are maximising the deductions available to you.

'The onus is also on you to keep thorough business documentation. It is a legal requirement to keep your records for five years after the 31 January deadline of the relevant tax year.'

Limited company

If you perform primarily private work, there may be some tax savings to be made by setting-up a limited company. Although it isn't impossible to trade as a limited company with NHS income, this is a more complicated scenario. This is something your accountant can explain to you in more detail, and together you can decide which business structure will work best.

Now that the different business structures have been summarised, your next question might be "What do they mean for my tax return and how much tax will I have to pay?"

Self-employed dentists pay both tax and NI to HMRC. The rates at which these are paid are summarised in the table below (they are different in Scotland). For the 2017/18 tax year, each individual is given a tax-free Personal Allowance of £11,500.

In addition to Class 4 NI, self-employed individuals also pay Class 2 NI which is at the rate of £2.85 per week. All these different amounts are calculated when you prepare your annual tax return, based on your level of earnings in the year. If you have a student loan, you will also have to make repayments at 9% once you earn over £21,000 (based on repayment Plan 2).

Tax returns may seem daunting and you can face penalties if HMRC discover an error in the information submitted. However, tax returns don't have to be stressful, help is at hand to make the transition from a FD as simple and easy as possible.

Sophie Kwiatkowski

Income after allowances	Rate of tax
up to £33,500	20% (basic rate)
£33,501 – £150,000	40% (higher rate)
£150,000+	45% (additional rate)

Income after allowances	Rate of Class 4 NI
£8,165 – £45,000	9%
£45,001+	2%

Sophie Kwiatkowski is a Senior Chartered Accountant with PFM Dental Accountancy which provides a chartered accountancy service exclusively for dentists. The PFM Dental group is one of the leading specialist providers to dentists within the UK. **www.pfmdental.co.uk**

SHOULD WRONG SITE EXTRACTION BE CLASSIFIED AS A 'NEVER EVENT'?

By **Sophia Ibrahim**, BDS5, University of Birmingham

'You must always put patients' safety first' – General Dental Council (GDC), Standards 8.[1] Recent incidents in medicine and dentistry, such as the increasing number of wrong site surgeries[2], have pushed patient safety into the spotlight. Wrong site surgery (WSS), classed by the NHS as a 'never event', is a serious concern for patient safety. A 'never event' is an incident which would be completely preventable had the correct preventative measures been in place.[3] Wrong tooth extraction, described as 'wrong site extraction'[4] is the most commonly reported type of WSS in dentistry; between 2012 and 2015, wrong site extractions were responsible for nearly a quarter of all procedures.[5] This essay will discuss wrong site extractions, the implications, rationales for why they could be classed as 'never events' and possible interventions for them.

DENTAL SURGEONS

All UK undergraduate dental courses gain experience in a number of disciplines, including oral surgery which specialises in surgical procedures and tooth extractions. Throughout their course, dental students gain experience in tooth extraction which in turn will enhance their skillset for when they graduate as specialised surgeons. After graduating, most dentists will hone their tooth extraction skills through years of clinical experience and potentially undertake postgraduate teaching; so one could suggest these specialised surgeons should be competent to successfully extract the correct teeth.

CAUSES OF WRONG SITE EXTRACTION

A wrong site extraction is defined as the extraction of a tooth which is different to the one that was intended for extraction.[5] It does not include the removal of an additional tooth due to unforeseen, clinical complications *e.g.* extra tooth was extracted as it was attached to a fractured tuberosity.[5] Many studies have identified the factors that may influence wrong site extraction, they are rarely attributed to negligence, however certain operator-specific factors have been linked, such as heavy workload, competency and cognitive failures.[4-8]

Failures in communication and poor procedural compliance are some of the most significant causes of wrong site extraction.[5-7] The use of different dental notation systems, such as the Palmer or Universal numbering system, in patient referrals is a prime example of how the treatment plan can be misunderstood. A large proportion of extractions are for orthodontic purposes. The treatment plan is often prescribed by the orthodontist yet a different dentist extracts the tooth. To avoid and minimise confusion and the risk of a wrong site extraction, referral letters should be thorough and contain no ambiguity.

The presence of multiple carious teeth has also been identified as a factor for erroneous tooth extraction.[6,7] This is mainly because adjacent carious teeth make it harder to identify the intended tooth for extraction, especially if a patient has many carious teeth in same area and the treatment plan is to extract one tooth yet restore the adjacent teeth.[6,7]

Another factor is extracting teeth when patients are in mixed dentition phase.[6,8] Thirteen percent of wrong tooth extraction cases were due to confusion between the primary tooth for extraction and permanent teeth.[8] For example, there has been a prolonged time period between initial referral and the extraction appointment and the deciduous tooth has exfoliated since the original treatment plan was designed. The operating dentist may make the mistake of extracting the permanent tooth, thinking it was the deciduous one.[6,8]

SHOULD IT BE A 'NEVER EVENT'?

Wrong site extraction is largely considered a 'never event'.[3,5,6-8] In dentistry, WSS may not always physically harm a patient however it does create problems in the clinical setting which then raises concerns for patient safety. Patient consent is another concern when wrong site extraction happens. If a tooth is extracted different to the one the patient consented to, the original treatment plan is contraindicated which in turn then negates the patient's consent. This can lead to further medico-legal problems as consent was not obtained.

On the other hand, wrong site extractions are not well documented and often seen as rare and random events.[3,6,7] By classing wrong site extractions as 'never events', it implies that the operating dentist and/or the hospital/practice is unsafe when the event may have occurred due to an error out of their control, such as an unclear referral form.

CONSEQUENCES OF WSS

The consequences of wrong tooth extraction impact the patient, the dentist and their respective organisations[3,5,6,7]. Patients may experience emotional and physical distress and this can reduce their trust in the clinician as well as reducing their faith in the system, possibly leading to dental anxiety[4-7,9]. Wrong site extraction is a common cause for dental litigation and has the potential to dent the profession's reputation. The Dental Defence Union (DDU) received 138 claims of wrong tooth extraction between 2006 and 2011. On average the cost per claim was more than £7,000, with the highest pay out being over £23,000.[10] These figures demonstrate the financial implications on the dentist or organisation for wrong tooth extraction.

It is important to investigate and critically analyse cases of wrong site extraction to identify why it happened as a way to reduce future reoccurrences. Errors must be reported, regardless of whether the patient was harmed or not, to provide support and allow the continuous improvement of patient safety. In the UK, 'never events' need to be reported; a failure to report leads to a possible breach of Care Quality Commission (CQC) requirements, which outlines providers' responsibilities for incident reporting.[11]

Wrong-site tooth extractions continue to be one of the major reasons for filing malpractice claims against oral and maxillofacial surgeons.

INTERVENTIONS

WSS should not happen but they do offer an opportunity to learn from these events. There are many studies that have suggested a range of approaches to reduce the risk of wrong site surgery.[6-8,11] One suggestion is to encourage the patient, parent or guardian to understand the treatment plan.[9] For example, the patient verbally confirms and shows the dentist the tooth for extraction with a hand-held mirror, again a measure which aims to minimise wrong extraction.[9] Active patient involvement should be a part of the pre-extraction checks rather than relying wholly on the patient to identify the tooth to be extracted, as patients can make mistakes, especially if they are anxious.[6-8]

UK healthcare organisations are required to implement a surgical safety checklist for all patients undergoing a surgical procedure.[11] The World Health Organisation (WHO) produced a surgical safety checklist as a means of minimising errors associated with surgical procedures.[12] Local dental extraction guidelines are also developed to supplement the WHO checklist, such as the toolkit for 'Local Safety Standards for Invasive Procedures' (LocSSIPs) devised by the Royal College of Surgeons, which outlines good practice for extractions.[11] For example, the LocSSIPs recommends repeating the 'three R's' anytime there is an interruption during extraction: Reposition, Recheck and Reaffirm.[11] The oral surgery department here at Birmingham Dental Hospital implements good practice with extractions; confirming the tooth to be extracted out loud to the assistant as well as checking for intact apices on extracted teeth to ensure there are no retained roots.

Another useful method in minimising wrong site extraction is by designing a dental teaching programme to reduce adverse effects of wrong site extraction.[6] In Taiwan, a training programme was delivered to identify learning points from recent wrong tooth extraction incidents; these points were then introduced into clinical guidelines and showed a reduction in the number of wrong tooth extractions.[13] This is an excellent example of using education as a means of reducing incidence WSS and is a useful method to teach current undergraduates.

Marking the surgical site is extremely useful to prevent WSS in medicine. However in dentistry, studies have shown methods of directly marking teeth is not easy and often not reliable.[14] In 2010, Gloucestershire Royal Hospital introduced a method to minimise wrong site extraction.[6,15] The method consists of marking a series of lines on a patient's cheek/forehead to create 4 four quadrants, which act as an anatomical adaptation of the Palmer notation system and the teeth/tooth for extraction are drawn in the corresponding quadrant. A study in 2013 analysed the effectiveness of this method and their results showed that since using this technique, Gloucestershire Royal Hospital have not had any wrong site extractions in their extraction clinic.[15] The method has shown to be effective and could be a useful tool in reducing wrong site extractions in dental clinics.

CONCLUSION

The concerns and implications associated with wrong site extraction, such as patient safety and consent alongside its negative impact on dentistry, make a strong case for wrong site extraction to be identified as a 'never event'. That is to say that the incident is completely preventable, should correct procedure and guidelines be followed. Interventions have been suggested to minimise the wrong tooth extraction from happening and it would prove effective for these suggestions to be applied in the future.

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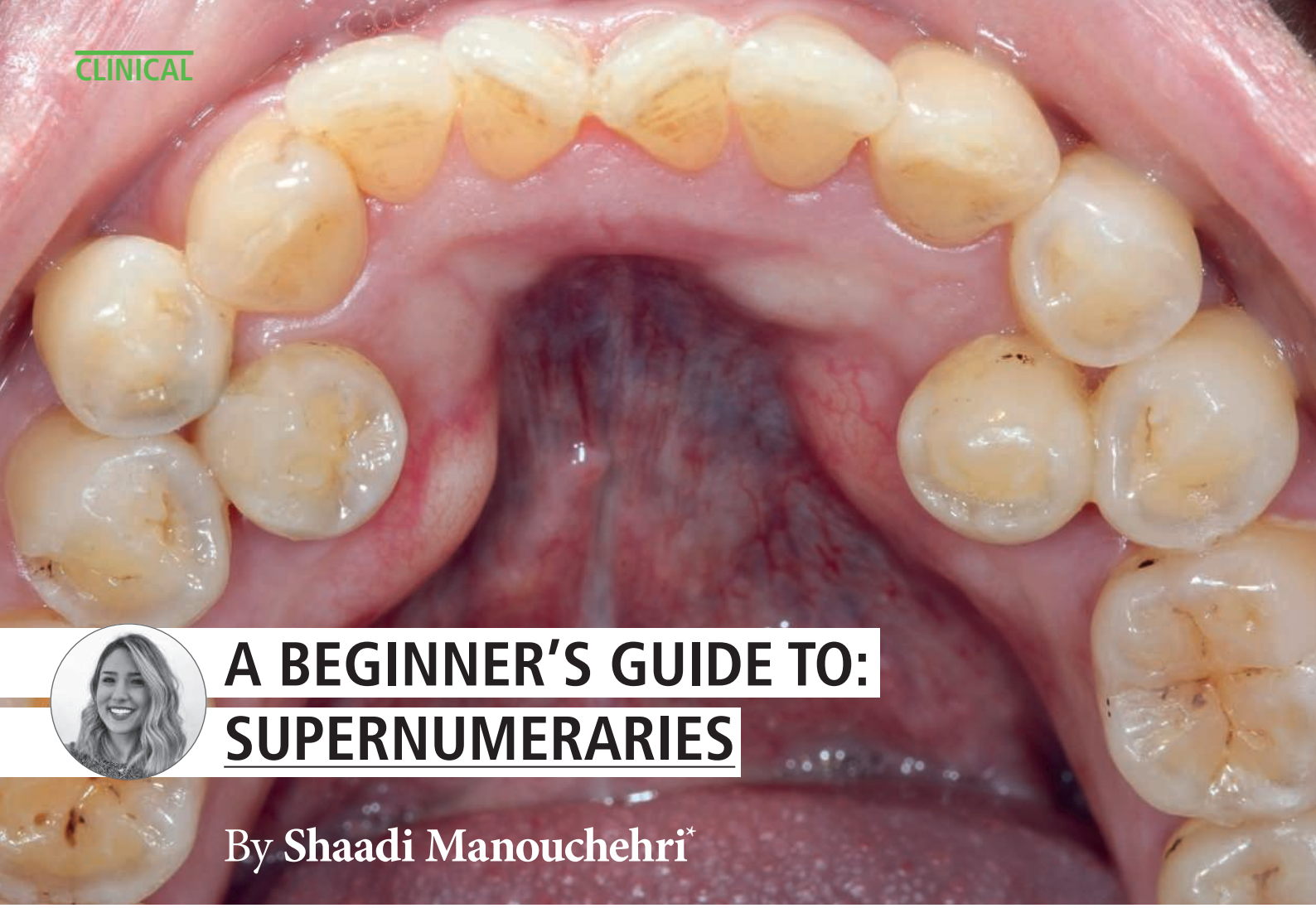
Sophia Ibrahim



A BEGINNER'S GUIDE TO: SUPERNUMERARIES

By Shaadi Manouchehri*

Supernumerary Teeth (ST) are those that are present in addition to the normal dental formula. These may present in the deciduous or permanent dentition and they can either be incidental clinical/radiographic findings or may be identified due to delayed eruption of teeth. ST can be associated with syndromes such as Cleft Lip and Palate, Cleidocranial Dysplasia and Gardener's Syndrome. Non-syndromic individuals could also be affected; however the clinical presentation is slightly different.

The aetiology is currently not very well understood, however there are a number of convincing theories. One theory suggests that supernumeraries form as a result of dicotomy of the tooth bud whilst another suggests that they may be due to hyperactivity of the dental lamina. The latter hypothesis is well supported by the literature and there seems to be a hereditary component as family members of affected children seem to be more likely to also have ST compared with the general population.[1] A study which looked at 'Characteristics of Supernumerary Teeth in Nonsyndromic Population in an Urban Dental School Setting' found that 20.5% of the population studied had first degree relatives also affected with ST[2].

Prevalence of ST affecting Caucasians is found to be up to 3%[3]. The vast majority (86%) of cases are found to present with a single supernumerary compared with a smaller population (23%) presenting with two supernumeraries and only 1% with three or more[3]. This is true for presentation of ST affecting non-syndromic patients. ST as part of a syndrome is likely to present as multiple supernumeraries occurring bilaterally and the effect on the dentition is likely to be more pronounced[3]. Although ST can theoretically occur anywhere along the dental arches, 90% are found to affect the maxilla and only 10% in the mandible[3].

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PRESENTATION

Supernumeraries can be divided into four categories based on their location and morphology:

1. Supplemental

These are teeth that resemble a specific tooth type e.g. incisors. They usually occur at the end of a tooth series i.e. lateral to the lateral incisors. The most commonly affected tooth type is the lateral incisor. Eruption of these teeth may lead to a crowded dentition.

2. Conical

These commonly present in the pre-maxilla region and are a common cause of delayed eruption of central incisors. They may or may not erupt and their failure to erupt can occasionally cause delayed/failure of eruption of adjacent teeth, however this is not very common. Conical ST that present in the midline are commonly referred to as 'mesiodens'.

3. Odontomes

These rarely erupt and tend to be incidental radiographic findings. They are further categorised as complex or compound odontomes depending on their ability to differentiate the various layers. Enamel, dentine and cementum are well differentiated in compound odontomes whereas complex odontomes are found to contain a haphazard mix of these layers.

4. Tuberculate

These are barrel shaped ST that present in the palatal aspect of the pre-maxilla, have two or more cusps and often occur in pairs.

They rarely erupt and often cause failure of/delayed eruption of central incisors.

PROBLEMS ASSOCIATED WITH ST

ST can affect the permanent dentition regardless of whether they erupt or not. Unerupted ST may affect the adjacent dentition by causing problems such as root resorption, failure of eruption and dilacerations amongst many others. Erupted ST on the other hand, are likely to cause localised crowding of the dentition and therefore hinder effective plaque control by the patient subsequently leading to caries or periodontal disease.

Clinical complications of ST affecting the permanent dentition include:

- Failure of eruption
- Rotation or displacement
- Dilacerations
- Root resorption
- Crowding
- Malocclusion
- Diastema
- Cystic change
- Delayed or abnormal root development
- Caries
- Periodontal disease.

SYNDROMES

As previously mentioned, ST may present as a feature of a particular syndrome. Syndromic presentation involves presence of multiple supernumeraries with subsequent failure of eruption of the permanent dentition. You may find that patients present with extensive edentulous areas clinically whilst radiographic examination reveals clusters of supernumerary teeth alongside the permanent dentition which appear impacted and chaotic.

Cleidocranial Dysplasia

This condition characteristically affects the clavicles (Cleido-) and the cranium (Cranial). Characteristic features include underdeveloped or missing clavicles which allow the shoulders to be brought together across the chest. Bossing of the forehead is also observed alongside a prognathic appearance of the mandible due a hypoplastic midface. Multiple supernumeraries occur as a feature of this condition and failure of eruption of the dentition is a common consequence. Comprehensive oral rehabilitation is indicated including surgical, orthodontic and restorative input in order to achieve optimal aesthetic outcome and restore facial contour.

Cleft Lip and Palate (CLP)

Clefts of the lip and palate are the most common craniofacial deformity resulting from failure of fusion of facial buds during development. Genetic and environmental factors contribute to the development of this condition. Anodontia can occur in the area of the cleft whilst ST tend to affect other areas of the mouth. These patients are often involved in multidisciplinary care plans from birth to optimise feeding and development and so management of the ST tends to be considered as part of a holistic treatment plan.

'One of the most common presentations can be paediatric patients presenting with a complaint of failure of eruption of anterior teeth whereby a clinical and radiographic examination reveals a mesioden'

Gardener's Syndrome

This is a form of Familial Adenomatous Polyposis (FAP) and is caused by a genetic mutation. This condition is characterised by multiple colorectal polyps and tumors elsewhere on the body which may be benign or malignant. These colorectal polyps tend to appear around the age of 16 and, if left untreated, are highly likely to become cancerous at an average age of 39. Features include ST as well as multiple osteomas affecting the jaws and soft tissue tumors. Osteomas may give a 'cotton wool like appearance' on radiographic examination. Diagnosis is by molecular genetic testing in a suspected individual. Treatment involves colectomy if colorectal cancer is suspected and close monitoring and surveillance.

TREATMENT

Early diagnosis and timely intervention is paramount in avoiding potential complications of ST. One of the most common presentations can be paediatric patients presenting with a complaint of failure of eruption of anterior teeth whereby a clinical and radiographic examination reveals a mesioden. In such cases, timely intervention can ensure minimal disturbance caused to the central incisors and you may find that surgical removal of the causative supernumerary will lead to subsequent spontaneous eruption of the incisor(s). This is well supported by the literature with studies showing 75% of incisors erupting spontaneously after timely removal of the ST given that there is sufficient space in the dental arch[3].

In the majority of cases, removal of the ST may be indicated and further investigations such as Cone Beam Computer Tomography may be required to localise the tooth/teeth prior to surgical intervention. Subsequently orthodontic traction may be required to align the impacted dentition.

Occasionally ST may be left undisturbed but closely monitored given that they do not affect the permanent dentition and no disturbance is anticipated should they be left *in situ*. Thorough discussions must take place with patients and their parent if applicable in order to reach a definitive treatment plan suitable for that individual.

CONCLUSION

ST may present as a feature of a particular syndrome or may affect non-syndromic individuals with a slightly different clinical presentation. Timely diagnosis and intervention can help minimise disturbance to the permanent dentition. The majority of these cases would be best managed as part of a comprehensive multi-disciplinary treatment plan and clinicians must be aware of the condition and make the appropriate referral to secondary care centres if required.

Shaadi Manouchehri

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BEING A 'LEFTIE' IN DENTISTRY

By **Rima Sadhia Hussain**

Rima graduated from King's College London in 2016 and has since completed her training in the North East London deanery. She now works as an associate in Lewisham.

As a dental student, whenever faced with the situation of being partnered with a new nurse, I've always found the first encounter has two stages. Stage one: There's the slight uneasiness when they start questioning their own nursing skills, until stage two and it dawns on them that you are indeed 'wrong handed' or a leftie. In fact up to 10% of the population are lefties with no clear cut evidence on the numbers within the dental profession. Currently, in the UK there are approximately 40,000 dental practitioners, which would roughly amount to 4,000 left-handed dentists.

Is this really a big deal? From talking to several experienced colleagues, and completing my vocational training (VT) in the London deanery, I feel this certainly becomes an advantage, and I sincerely believe all practitioners should strive to become ambidextrous performers. I would like to share some tips and tricks I've picked up during my career thus far.

As a dental student…

There are many universities who offer interchangeable dental chairs and bracket tables. From working in both, I would thoroughly advise trying to develop your skills in a right-handed surgery. Not only does this make you more versatile (for the start of your career it may be likely you will be in different rooms!), it allows you to develop ambidextrous skills and staff may find it easier to adapt to. Personally, I used a left-handed surgery for a week every month in final year, and found the de-skilling evident and highly deterrent.

Other areas include utilising your nurse more effectively. Leaning back over to a bracket table to pick up instruments as a leftie is time consuming and promotes extra stress on your shoulder muscles. I find using four-handed dentistry is the best way of combating this. Additionally, you could ask your nurse to stand with a disposable cardboard tray full of the equipment needed at the time, to avoid this happening.

'I would thoroughly advise trying to develop your skills in a right-handed surgery. Not only does this make you more versatile ... it allows you to develop ambidextrous skills'

I find doing all dentistry sitting on the right hand side of the patient works best, especially if you plan on working as an associate long term. You will often find nurses saying they can't see much when they are assisting you. The main way I avoid this is by allowing myself to use both hands, and strengthening my right hand. If you find this uncomfortable, do ask the nurse to increase the height of her chair or to stand up if possible. I find most left hand people feel comfortable doing everything – including sub gingival scaling and extractions with either hand. The only exception I have found is the use of the dreaded fast handpiece. Again, I would say one can counteract this by strengthening the right hand through fine manual dextrous activities such as playing the guitar or knitting (!). This is one area I'm hoping to still develop by the end of the year.

When researching a vocational training practice…

There are certain qualities that can make or break you during your dental foundation training year. Ideally, search for a practice which has a left-handed educational supervisor. Not only will they be able to assist you with operator position, but also by giving you specific tips and tricks based on your surgery.

I had two co-trainers, one who was right and one who was left-handed. I found this worked well in giving you two points of view.

An additional advantage would be to consider visiting your top few practices in advance (do let them know beforehand!) to see if it will be feasible to work in them. Ensuring that if using in a right-hand set up the leads are long enough to prevent bending at the base, as this breaks equipment quicker. Consider the set up in the bay, play around with positioning and see if working there would be feasible.

When working as an associate…

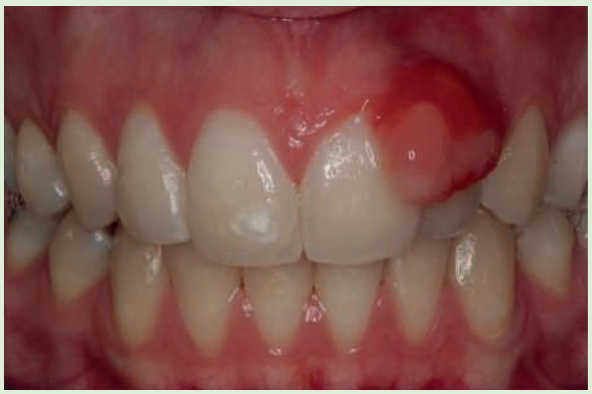
When applying for jobs, it is important to ensure any jobs you apply for can cater to your needs. Ideally, letting employers or recruiters know pre-interview via your CV can be beneficial. You don't want to be in the situation where you've accepted a job only to find out they can't cater to the fact that you're left-handed.

Ultimately, being left-handed shouldn't be seen as a deterrent, but knowing early on in your career how to address and manage it should prove beneficial in the long run.

Rima Sadhia Hussain

Question 1

You are a dentist in general practice and a 30-year-old female presents with the gingival appearance shown on the right. Take a brief history and explain to the patient what is the most likely diagnosis and treatment of the lesion.

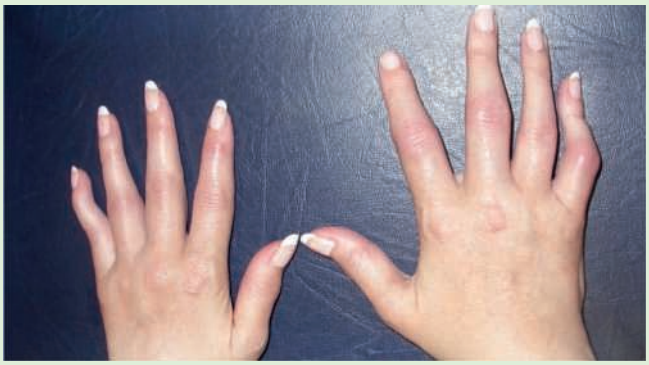


Question 2

A. Describe the clinical signs seen in this photograph.

B. What medical condition does the patient have?

C. How may this condition influence dental treatment and health?



Question 3

A 78-year-old lady, who smokes presents with a left submandibular gland swelling. On examination she has a scar in the right submandibular region, which she says was from an operation to remove a gland and the result was a benign tumour.

A. Mucoepidermoid carcinoma

B. Pleomorphic adenoma

C. Maltoma

D. Adenoid cystic carcinoma

E. Warthin's tumour

Pastes+

REVISION

Test your knowledge with the following questions from **PasTest**

Answers are on page 44

Question 4

Which of the following spreading odontogenic infections can present with minimal swelling and absolute trismus?

A. Sublingual

B. Parapharyngeal

C. Submandibular

D. Submaseteric

E. Buccal

A SUMMARY OF TRAUMA IN THE YOUNG PERMANENT DENTITION


By **Vishal Davda** and **Neel Sethi**

INTRODUCTION

Dental trauma can be challenging to treat especially as a dental student where you have little experience in emergency treatment. It is therefore important to have a structured approach, to ensure correct management of the injury and therefore improve long term prognosis of the tooth in question. Research from the *International Journal of Paediatric Dentistry* has shown the general dental practitioner's knowledge of emergency treatment of dental trauma to be inadequate and that greater undergraduate education in this topic is needed.[1] It is therefore important that there is good knowledge amongst dental students so that they can carry this beyond dental school into their future practice. In this article we aim to discuss the importance of a good history from the child and/or their parent, examination, diagnosis, initial management and long term management of the six injuries to the periodontal tissues and the seven fractures of dental hard tissues and pulp of the permanent dentition.

HISTORY

When first presented with a patient who has experienced dental trauma there are a few key questions that you should ask:

- How did this injury occur? (low velocity impact tends to cause luxations, whilst high velocity impact is more likely to cause crown fractures; sharp objects favour a clean break with no luxation, blunt objects favour luxation or root fracture).[2]
- When did this injury happen? (timescale is a very important factor in choice of treatment and will be discussed later).
- Where were you when this injury happened? (potential contamination of wounds, it is important to check tetanus immunisation status).[2,3]
- Did you have any loss of consciousness or suffer any head or other injuries? (serious non-dental injuries would require immediate referral to medical colleagues).[4]
- Have you had any previous injuries to this tooth? (may explain radiographic findings such as pulp canal obliteration or arrested root development).[5]
- Has this injury changed the way you bite, and if so how? (could further determine the type of injury whether it is tooth luxation or a condylar, jaw or alveolar fracture).[5]
- Has your tooth been sensitive to hot food and drink? (could indicate dentine exposure and the need for dentinal coverage).[5]

Whilst this is not an exhaustive list of questions you should ask, they are all important in piecing together a story from the patient or their parent. If there are any inconsistencies in the story along the way, delayed presentation of the trauma, bruising of soft tissues not overlying bony prominences or injuries taking the shape of a recognisable object, these could all indicate non-accidental injury (NAI). If you suspect this it is important to make it clear in the notes, take appropriate clinical photographs for medico-legal implications and report to it to your appropriate senior.[2,6]

A thorough trauma history is important for the purposes of diagnosis as well as formulating a treatment plan, but you should also ensure a good medical and dental history are taken. In the medical history, particularly look out for any bleeding disorders, congenital heart disease, immunosuppression, tetanus immunisation status and any allergies or medications the child is taking.[2] In the dental history make note of any previous injury to the dentition and how it was managed as well as gauging the child's general dental experience.

CLINICAL EXAMINATION

Extra-oral: look for any injuries outside the mouth, assess facial asymmetry (in front and behind), palpate the facial skeleton, look for facial injuries such as soft tissue swelling, abrasions, lacerations or contusions (bruising) and clean up all debris and dried blood with a wet gauze.[2,5]

Intra-oral: assess occlusion, soft tissues inside the mouth looking for the same facial injuries as extra-orally and hard tissues to see if any teeth are missing, fractured, displaced or mobile.

A trauma grid is a good structured way to assess the teeth in question as well as the teeth either side and aid in provisional diagnosis. A radiograph is necessary for definitive diagnosis. Table 1 describes an example of a trauma case and its respective trauma grid.

Whilst the trauma grid gives structure to the examination, there are a few things to note:

- It is best not to tap freshly traumatised teeth unless you want to listen to the tone. Luxated teeth produce a high, metallic (ankylotic) sound as opposed to the dull tone of normal teeth, whilst a very dull tone may indicate root fracture.[3]
- Vitality tests measure nerve impulses but it is the blood supply that determines whether the pulp will undergo necrosis or recover, so the test may not be accurate.[2,5,7]
- Immediately post-trauma (in particular luxation) and incomplete root formation are factors for a decreased response to vitality tests whilst teeth being moved by orthodontics may display heightened response to vitality tests.[2,5]
- There is very little value in vitality testing primary teeth.[2,5]

Table 1: Trauma Grid – a logical way of displaying diagnostic information about injured teeth and teeth adjacent to them.[2]

Tooth	UR2	UR1	UL1	UL2
Colour	-	+ (yellow)	+ (grey)	-
Mobility	-	-	+ (Grade I)	-
TTT	-	-	+	-
Cold / EPT	+	+	-	+
Radiographs	-	-	+ (PA radiolucency)	-

Note:
A minus sign (-) indicates absence of a particular sign. (e.g. absence of colour change or mobility)
A plus sign (+) indicates that feature is present. (e.g. tender to tap or responds to cold)
TTT = tender to tap, EPT = electric pulp test.

UR1: Had yellow discolouration, was not mobile or tender to tap, and was responsive to pulp sensibility testing

UL1: Was darker in colour, was tender to tap, demonstrated grade I mobility, was not responsive to sensibility testing, and had a periapical radiolucency

No abnormalities detected for UR2 and UL2

Table 2: A summary of the intervals of review appointments depending on the type of trauma injury, as advised by the International Association of Dental Traumatology, IADT.[3]

	2 weeks	4 weeks	6-8 weeks	6 months	1 year	Yearly for 5 years
Concussion		x	x		x	
Subluxation	x	x	x	x	x	
Extrusive Luxation	x	x	x	x	x	x
Lateral Luxation	x	x	x	x	x	x
Intrusive Luxation	x	x	x	x	x	x
Avulsion	x	x	x	x	x	x
Infraction	No review necessary unless there is an association with a luxation injury					
Enamel fracture			x		x	
E-D fracture			x		x	
E-D-P fracture			x		x	
Crown-root (uncomplicated) fracture			x		x	
Crown-root (complicated) fracture			x		x	
Root fracture		x	x	x	x	x

It is important to complete a trauma grid at each review appointment to monitor for complications such as loss of vitality, initiating treatment as soon as possible if this is the case. Other things to record include any signs of infection such as an abscess or sinus and symptoms the patient is getting such as pain.[2] Generally review appointments should take place at the following intervals for periodontal tissue injuries: 4 weeks, 6-8 weeks, 6 months, 1 year and yearly for 5 years. For all injuries to the dental hard tissues and pulp 6-8 weeks and 1 year intervals are appropriate unless stated otherwise in this article.[3] Table 2 provides a summary of these intervals depending on the injury, however it should be mentioned that these intervals of review appointments are only a guide.

RADIOGRAPHIC EXAMINATION

The three most common radiographic views for assessing trauma are periapical (PA), occlusal and orthopantogram (OPG).

PAs show proximity of a fracture to the pulp, the stage of root development and determine the presence of root fractures, which can be done using two PAs at different lateral angulations.[2,7]

Occlusal views can be used also for determination of root fractures using horizontal parallax with a PA or if access is difficult an anterior occlusal view radiograph will rarely miss a root fracture.[2]

OPGs are taken where underlying bony injury is suspected, for example an alveolar fracture or a fracture in the TMJ, where referral to a specialist centre may be required.[2]

Dental radiographs are not limited solely to the dentition, soft tissue exposure of the lip can be done if for example, there are suspected tooth fragments present in the lip from a laceration injury caused by an enamel-dentine fracture.[2]

INJURIES TO THE PERIODONTAL TISSUES

There are six injuries that involve damage to the periodontal tissues:

1) **Concussion:** Injury to the tooth supporting structures causing haemorrhage and oedema of the periodontal ligament without causing tooth mobility. Clinically the tooth is TTT and no radiographic abnormalities are present. No immediate treatment is needed, however the pulp status should be monitored at the review intervals stated in Table 2.[2,3]

2) **Subluxation:** Injury to the tooth supporting structures causing damage to the periodontal ligament (PDL) fibres resulting in tooth mobility without any displacement. The tooth will also be tender to tap and there may be bleeding from the gingival crevice due to PDL severance, depending on the timing of presentation. Usually there are no radiographic abnormalities and again the pulpal response should be monitored until a definitive diagnosis can be made. In addition, if the patient is in discomfort upon presentation a flexible splint can be placed for up to 2 weeks to stabilise the tooth position.[2,3] This splint is made from 0.018" round stainless steel orthodontic wire and is bonded using composite resin placed in the middle of the tooth; at least one tooth either side should be included in the splint.[8]

3) **Extrusive Luxation or Extrusion:** Partial displacement of the tooth out of its socket, giving the tooth an elongated appearance due to partial or total separation of the PDL from the tooth that can be seen radiographically, whilst the alveolar bone remains intact. Depending on the severity of the injury, the tooth may also be protruded or retruded in addition to its axial displacement. In addition, the tooth will be TTT, excessively mobile and there is normally a negative response to vitality tests. If there is a positive response, this indicates a reduced risk of long-term pulpal necrosis.[2,3] As Table 3 shows, the maturity of the tooth greatly influences the prognosis of the tooth, with pulpal revascularisation normally occurring in immature teeth (open apex) versus mature teeth (closed apex) in extrusion injuries, therefore determining the need for eventual root canal treatment (RCT). Immediate treatment involves washing the exposed root surface with saline, digital repositioning under local anaesthetic if necessary; checking correct positioning by assessing the occlusion and taking a PA radiograph. Following this a flexible wire splint is placed for 2 weeks advising a soft diet after which pulpal condition is monitored for revascularisation. A continued lack of response at review appointments to pulp testing and/or crown discolouration in mature teeth is indicative of pulpal necrosis and RCT will be necessary.[2,3]

4) **Lateral Luxation:** Displacement of the tooth in a direction other than axially, again with partial or total separation from the PDL and also involves fracture of either the labial, palatal or lingual alveolar bone. If both sides of the alveolar bone fracture the injury is known as an alveolar fracture.

Table 3 – Percentage prognosis of an immature (open apex) vs mature (closed apex) tooth that has experienced a traumatic injury of the periodontal tissues.[2]

Type of injury	Open apex (%)	Closed apex (%)
Concussion	100	96
Subluxation	100	85
Extrusive Luxation	95	45
Lateral Luxation	95	25
Intrusive Luxation	40	0
Avulsion	30	0

Clinically the tooth will not be mobile as it has been displaced into the alveolar bone as a result giving a metallic, ankylotic sound when tapped. Similar to extrusive luxation, the long term prognosis depends on the maturity of the tooth, however as Table 3 shows there is a reduced prognosis for laterally luxated compared to extruded mature teeth due to the greater degree of displacement on average. Immediate treatment requires local anaesthetic, digital pressure or forceps to reposition the tooth from its immobile position in bone, checking correct positioning with occlusion and a PA radiograph, and finally splinting the tooth for 4 weeks. The increased splinting time is due to time required for bone to heal rather than just the soft tissues in an extrusive luxation. Regular reviews as summarised in Table 2, should take place to monitor condition of the pulp, checking for pulpal necrosis and if it is present RCT is indicated to prevent root resorption.[2,3]

5) **Intrusive luxation or Intrusion:** Displacement of the tooth axially into alveolar bone, without any tooth mobility or response to vitality tests. Radiographically the PDL space may be absent fully or in part from the root due to the extensive damage to the PDL as well as the cemento-enamel junction (CEJ) being located apically to adjacent teeth. Complete loss of the PDL space is seen radiographically when ankylosis occurs, this is the fusion of teeth to the surrounding alveolar bone. An intrusive injury has caused ankylosis of the UR1 and UR2 as shown in Figure 1, where there is loss of the PDL space. Due to pulpal necrosis, both the UR1 and UR2 were root treated and the incisal edges elongated with composite resin to bring the UR1 back into occlusion and improve the aesthetics of both teeth. The treatment, as summarised in Table 4, varies upon the degree of intrusion; the greater the amount of intrusion, the more invasive

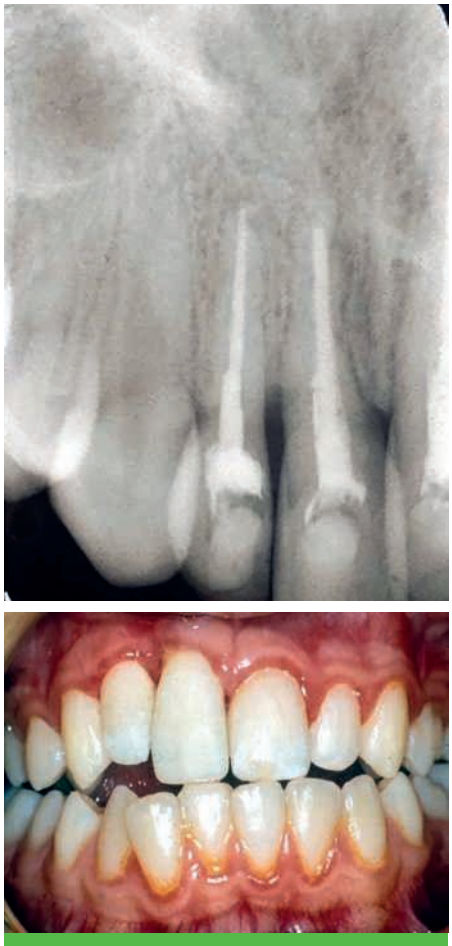


Figure 1: A periapical radiograph showing ankylosis of the UR1 with loss of PDL and a clinical photograph of the dentition showing elongation of the UR1 and UR2. (with thanks to Professor Richard Welbury)

Table 4 – The classification of mild, moderate and severe intrusion as well as the treatment required depending on the type of intrusion for open vs closed apex teeth.[2,3]

Tooth Maturity	Type of Intrusion	Amount of Intrusion (mm)	Treatment
Open Apex	Mild	≤ 3	Spontaneous
	Moderate	3 - 7	Spontaneous
	Severe	≥ 7	Orthodontic or Surgical
Closed Apex	Mild	≤ 3	Spontaneous
	Moderate	3 - 7	Orthodontic or Surgical
	Severe	≥ 7	Surgical

the treatment. Spontaneous eruption is the treatment of choice for minor intrusions and leads to fewer healing complications than orthodontic and surgical repositioning. However, if there is no spontaneous movement within a few weeks, intervene with orthodontic or surgical repositioning before ankylosis occurs. Orthodontic repositioning is best for patients with delayed presentation and enables slow repositioning of the tooth as well as repair of marginal bone of the socket.[2,3] This method uses orthodontic brackets on adjacent teeth, stainless steel wire and elastic tubing in order to extrude the tooth and therefore facilitate RCT in the future.[9] Surgical repositioning is required when there is major intrusion into the socket and is best treated shortly after the injury.[2,3] It involves raising a flap to reposition the tooth and then supporting it in place with a splint. RCT should be considered for all mature teeth where pulp revascularisation is unlikely following intrusive luxation, and should commence roughly 7-10 days after the injury.[2,3,9]

6) **Avulsion:** The complete displacement of a tooth from its socket in alveolar bone. When dealing with an avulsion injury there are a few important things to consider before deciding on a treatment. Firstly, if the avulsed tooth isn't found it is very important to exclude an intrusive luxation injury. Secondly it is important to ascertain whether the avulsed tooth is a primary or secondary tooth, as primary teeth should never be replanted because they could damage the permanent tooth germ.[2,3,5,8] You should also identify whether the whole tooth has been avulsed or there is a concomitant root fracture, where part of the tooth is avulsed and the remainder is root retained.[3] Finally you should assess what stage of root development the tooth is at, whether it is an immature (open apex) or mature (closed apex) tooth.

Clinically it is important to assess the viability of the PDL. If the tooth has been replanted immediately after the avulsion, the PDL cells are likely to be viable. If the tooth has been avulsed less than 60 minutes ago and the tooth has been kept in an appropriate storage medium (saliva, milk, saline) the PDL cells are likely to still be viable but have a worse long term prognosis. If the total extra oral dry time is more than 60 minutes, the PDL cells will not be viable regardless of the storage medium. The two most important factors to determine the choice of treatment when a patient presents with an avulsed tooth are the total extra-oral dry time and the stage of root development.[3,10]

'Orthodontic repositioning is best for patients with delayed presentation and enables slow repositioning of the tooth as well as repair of marginal bone of the socket'

If the tooth is mature and has already been replanted prior to presentation it is important to verify the position, both clinically and radiographically. It is then advisable to splint the tooth for 2 weeks and prescribe systemic antibiotics. The tooth will have a closed apex and the pulp will have undergone necrosis so it is important to commence RCT within 10 days.[3,10]

If the mature tooth has not been replanted and has been kept in an appropriate storage medium, with an extra oral dry time of less than 60 minutes you should replant the tooth as soon as possible. It is important to clean the root with saline and replant with digital pressure. You should then radiographically verify the position, splint the tooth for 2 weeks and prescribe systemic antibiotics. Again, RCT should take place 7-10 days after replantation. [3,10]

If the extra oral dry time is greater than 60 minutes ankylosis will occur following replantation and the tooth will eventually be lost. However, in the short term it is important to maintain aesthetics, function and to maintain alveolar bone. Prior to replantation non-viable tissue should be removed from the root using gauze and if there is time, RCT of the tooth should be carried out. The socket should also be irrigated prior to replantation and after replantation the tooth should be splinted for 4 weeks and antibiotics prescribed. The position should be verified radiographically.[2,3,5,10]

In immature teeth there is an improved prognosis because there is a chance of pulp revascularisation and for this reason RCT is avoided until there is evidence of pulpal necrosis either clinically or radiographically. Additionally, if the tooth has not been replanted on presentation, soaking the tooth in topical antibiotics such as minocycline or doxycycline 1mg per 20ml saline for 5 minutes has been shown to enhance the chances of revascularisation.[3,8] Otherwise, the treatment of immature avulsed teeth follows the same steps of management as mature avulsed teeth.

For both immature and mature avulsed teeth, patients should avoid participation in contact sports, be advised to have a soft diet for 2 weeks and use a chlorhexidine mouthwash twice a day for one week. Replanted teeth should be followed up at the intervals stated in Table 2 in order to monitor pulp status and periodontal healing both clinically and radiographically.

However, there is limited evidence for the use of systemic antibiotics to manage luxation injuries, therefore it remains the decision of the dentist whether to prescribe them.[7] For example if the patient was immunocompromised, this would indicate a prescription of systemic antibiotics such as amoxicillin or doxycycline (if there is an allergy to penicillin) for a luxation injury.[11]

Table 5: A summary table of the six injuries to their periodontal tissues and their respective treatment options[3]

Type of injury	Description of injury	Treatment (Permanent Dentition)
Concussion	Tooth is TTT with no displacement or mobility	No treatment indicated, monitor pulp for one year
Subluxation	Tooth is TTT with increased mobility but no displacement	Flexible splint to stabilise the tooth for 2 weeks
Extrusive Luxation	Tooth looks elongated and mobile	Reposition and stabilise tooth for 2 weeks with flexible splint. Commence RCT if necrotic pulp anticipated/evident
Lateral Luxation	Tooth displaced but not mobile and there is an ankylotic sound on percussion	Disengage tooth from bony displacement and reposition to original position. Stabilise tooth for 4 weeks using flexible splint Commence RCT if pulp necrosis occurs
Intrusive Luxation	Tooth displaced into alveolar bone axially and gives an ankylotic sound on percussion	If incomplete root formation, allow for spontaneous eruption. Consider orthodontic repositioning if no change after 3 weeks If intrusion is >7mm, consider surgical/orthodontic repositioning primarily
Avulsion	Complete displacement from its socket in alveolar bone	1) Tooth replanted prior to presentation – Clinically and radiographically verify position, splint for 2 weeks and administer systemic antibiotics 2) Presentation with extra oral dry time <60mins – Clean root with saline, replant tooth and verify position clinically and radiographically. Place a flexible splint for 2 weeks 3) Extra oral dry time >60mins – RCT of tooth either prior to replantation or within 10 days. Replant and verify position both clinically and radiographically. Splint for 4 weeks

Table 5 summarises the six injuries to the periodontal tissues and their treatments for quick reference, and Figure 2 illustrates each of the injuries.

INJURIES TO THE DENTAL HARD TISSUES AND PULP

1) **Infraction:** An incomplete fracture or crack of the enamel without any loss of tooth substance. The crack is often visible but the use of trans-illumination with the mirror can aid in identifying the fracture. It is often too small to identify radiographically and there isn't a need to take radiographs at review appointments unless there are symptoms present. Clinically the presence of any tenderness may indicate a luxation injury caused by the traumatic event. A large infraction may require etching and sealing with a composite resin to prevent discolouration of the fracture line.[2,3,13]

2) **Enamel fracture:** A fracture causing loss of enamel but not exposing any dentine. Any tenderness symptoms could again be attributed to a luxation injury. Radiographically as well as clinically, enamel loss will be visible; PA and occlusal views may be required to rule out the possibility of a root fracture or luxation injury. If the patient does not have the enamel fragment or could not find it, check the soft tissues for fragments. If the patient does have the fragment, this can be bonded back on but the time elapsed may result in dryness and discolouration of the fragment that would produce an unaesthetic result if reattached. Alternatively, the enamel lost can be replaced with composite resin; the tooth is etched, bond applied and composite placed incrementally or in bulk using crown former templates to help shape the filling.[2,3,13]

3) **Enamel-dentine fracture:** A fracture of the enamel and dentine in a tooth but not involving the pulp. Radiographically as well as clinically, enamel and dentine loss will be visible without involvement of the pulp; PA and occlusal views may be required to rule out the possibility of a root fracture or luxation injury. The tooth should not be tender to tap and if it is, there may be a luxation injury associated. It is important to obtain good dentinal coverage in this injury to avoid the entry of bacteria into the dentinal tubules and pulpal inflammation resulting. As mentioned above, if the patient still has the fragment that fractured off, it can be replaced but the tooth surface and fragment need to be prepared appropriately. The tooth fragment should be immediately placed in saline or milk and brought to the appointment.The fragment should be tested for fit against the tooth, both the tooth and fragment cleaned using a pumice and water slurry, a V-shaped notch should be made in the fragment to create an irregular outline for the composite to fill. The dentine

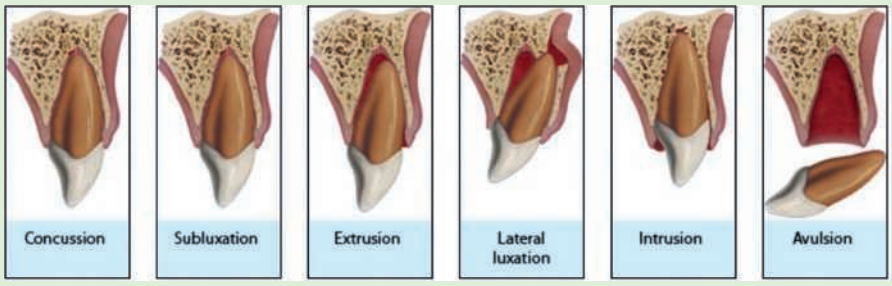


Figure 2: A series of illustrations of each of the six injuries to the periodontal tissues.[3]

exposed if close to pulp, should be protected by a calcium hydroxide lining and then the enamel and tooth fragment should be etched. Following this, bond and composite are placed, the fragment is attached in the correct position and cured for 40 seconds each labially and palatally, the composite is finished and polished accordingly to camouflage the fracture line. If the tooth fragment is not brought with the patient, if it is too dry and discoloured and so will not match the shade of the tooth, or if it is too small to be re-attached, then composite can be used to build-up the tooth, as described for enamel fractures.[2,3,13]

4) **Enamel-dentine-pulp (complicated crown) fracture:** A fracture through the enamel and dentine causing exposure of the pulp of a tooth. The exposure of pulp may cause sensitivity to stimuli such as cold. Clinically there will be loss of tooth structure and depending on the time of presentation, there will be a bright red or dark red pulp exposed, the latter of which is illustrated in Figure 3. Radiographs will show visible tooth loss and it is important to rule out root fractures or possible luxation injuries. The main aim of any treatment of this injury is to maintain vitality of the pulp, however the choice of treatment is dependent on the status of the pulp: survival, obliteration or necrosis. Whilst pulp survival is self-explanatory, pulp canal obliteration can mean successful re-vascularisation of the pulp following the injury and may present radiographically as deposition of secondary dentine along the pulp canal walls. Pulp necrosis means death of the pulp and RCT or extraction of the tooth are the only options here. Factors that can influence the vitality of the pulp include its initial status prior to the injury, the maturity of the apex of the tooth, where an open apex increases the chance of survival and the time since the injury, where the longer the interval between the injury and the appointment, the greater the chance of necrosis. Finally, any concurrent injuries such as luxation injuries causing PDL damage could also influence the vitality of the pulp. These principles of pulp status apply to both injuries to the periodontal tissues as well as complicated crown fractures.[2,3]

In an immature vital tooth there is an open apex, wide canal, thin walls and growth potential, it is possible to stimulate the pulp tissue to encourage completion of root development, known as apexogenesis. The Cvek pulpotomy is a partial removal of pulp following by a calcium hydroxide dressing.

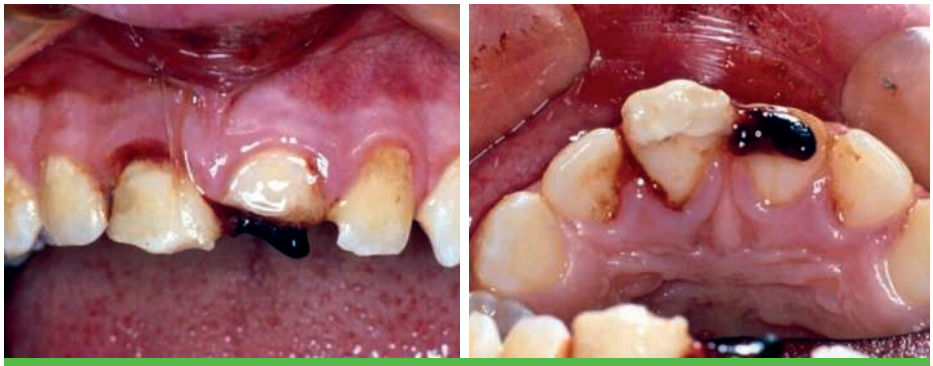


Figure 3: Complicated crown fracture of the UL1 with pulpal exposure (with thanks to Professor Richard Welbury)

This requires local anaesthetic, rubber dam, removal of approximately 2mm of inflamed pulp using a high speed bur and water, the haemorrhage is arrested using cotton wool pellets for 20-30 seconds and a haemostatic agent such as ferric sulphate can be used if the pulp is hyperaemic. Following this a calcium hydroxide dressing or mineral trioxide aggregate (MTA) is placed and a temporary restoration is placed in glass ionomer cement (GIC) or composite resin. If the Cvek pulpotomy fails, for example haemostasis is not achieved then a cervical or conventional pulpotomy is indicated. This involves removal of all of the coronal pulp up to the level of the cemento-enamel junction (ADJ) and dressing it using the same method. However, the greater access weakens the coronal structure and pulp canal obliteration occurs in 50% of cases. The patient is then followed up in 6-8 weeks for clinical assessment and radiographs to check for any symptoms and assess the need for a RCT.[12]

If a patient presents with a non-vital immature tooth with a complicated crown fracture, the pulp is necrotic and so cannot be stimulated to complete root development. Instead, a calcific apical barrier is made in the open apex tooth to effectively close it and facilitate endodontic obturation, known as apexification. The necrotic pulp is removed and the root canal cleaned out, MTA is used to create an apical barrier and the tooth is temporarily dressed with calcium hydroxide and GIC. Final obturation should only take place once there is an absence of symptoms, sinuses, mobility and there is radiographic evidence of a firm stop at the apex.[2,3,12-14]

‘If the patient does have the fragment, this can be bonded back on but the time elapsed may result in dryness and discolouration of the fragment that would produce an unaesthetic result if reattached.’

5) Uncomplicated crown-root fracture: A fracture involving enamel, dentine and cementum with loss of tooth structure but does not involve pulp. The crown fracture starts supragingivally and extends subgingivally. Uncomplicated crown root fractures usually present clinically with a mobile coronal aspect and are tender to touch. Radiographically it is usually difficult to determine how far the fracture extends apically. Often multiple radiographs are needed to identify the fracture including a periapical view and an occlusal view.

Often when confronted with an emergency patient presenting with an uncomplicated crown-root fracture, time is limited. In this situation temporary splinting of the mobile segment stabilises the tooth until a definitive treatment plan is decided. Before deciding on a permanent treatment, it is vital to consider whether the tooth is restorable. For vertical fractures and fractures with significant apical extension, extraction is unavoidable. Consider leaving the root *in situ* in these situations to maintain bone levels, leaving the patient with the option of an implant retained prosthesis in the future.

If the tooth in question is restorable you can either remove the coronal fragment only, or you can remove the coronal fragment and restore the apical fragment. Often when restoring the apical fragment, subsequent gingivectomies and osteotomies are needed to get a good result. A post crown is a common permanent restoration for this type of injury. It involves endodontically treating the root of the tooth before restoring with a post retained crown. Occasionally surgical or orthodontic extrusion of the remaining tooth is needed to provide enough supragingival tooth structure to support a post crown (usually 2mm ferrule required).[2,3]

6) Complicated crown-root fracture: A fracture which involves enamel, dentine, pulp and cementum with loss of tooth structure. Like uncomplicated crown-root fractures, they tend to present with a mobile coronal fragment and are tender to touch. Periapical and occlusal radiographs are recommended to assess the how far the fracture extends apically, however even with these views it is still usually difficult to determine. As with uncomplicated crown-root fractures if the fracture extends significantly apically or is a vertical fracture, extraction is unavoidable. The root fragment may again be left *in situ* if a future implant retained prosthesis is planned.

Emergency treatment of a complicated crown-root fracture also involves splinting to adjacent teeth to allow for stabilisation of the coronal fragment. However as the pulp is involved, in patients with open apices it is important to try to retain pulp vitality. Therefore a Cvek pulpotomy is recommended, however in mature teeth, RCT is required. A post crown is again a common permanent restoration for this type of injury following removal of the mobile coronal aspect. Surgical or orthodontic extrusion of the remaining tooth is often needed to provide enough supragingival tooth structure to support a post crown.[2,3]

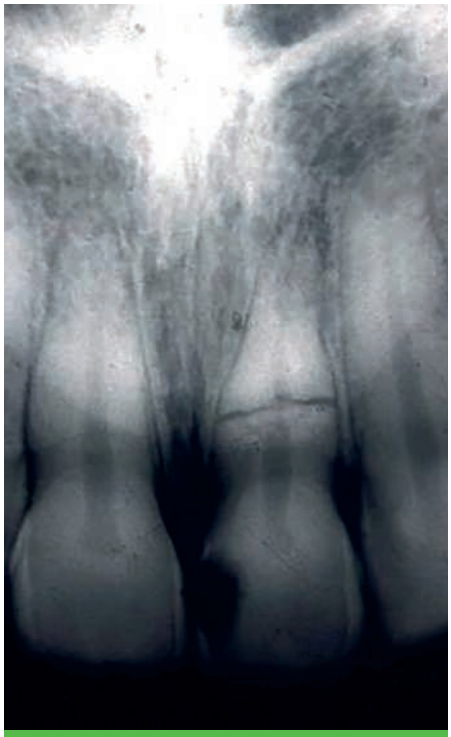


Figure 4: Horizontal middle third root fracture of UL1. (with thanks to Professor Richard Welbury)

'If the tooth in question is restorable you can either remove the coronal fragment only, or you can remove the coronal fragment and restore the apical fragment'

7) Root fracture: A fracture which involves only the root, therefore the cementum, dentine and pulp of the tooth and can be in either a horizontal or oblique direction. Horizontal fractures are diagnosable from a standard periapical view and can involve the cervical, middle or apical third of the root, with Figure 4 illustrating a middle third root fracture. Previous research has shown that in permanent incisors, root fractures of the middle third are most common (57%), followed by apical third (34%) and then cervical third (9%) root fractures.[15] Oblique fractures often require an occlusal view or additional periapical views and usually involve the apical or middle third of the root. The coronal aspect of the tooth is often mobile and may also be displaced, the tooth is usually tender to touch and there is often gingival bleeding.

The immediate treatment of a root fracture involves initially repositioning the coronal aspect of the tooth if displaced, and confirming that it has been repositioned correctly radiographically. Stabilisation using a flexible splint is then often required for a minimum of 4 weeks, however if the fracture is more cervical it can be beneficial to splint for as long as 4 months. Root fractured teeth should be monitored at regular appointments using a trauma grid and if pulpal necrosis of the coronal portion is evident, RCT up to the fracture line should be commenced.

Figure 5 illustrates each of the seven injuries to the dental hard tissues and pulp and Table 6 provides a summary of their description and management, for quick reference.[2,3]

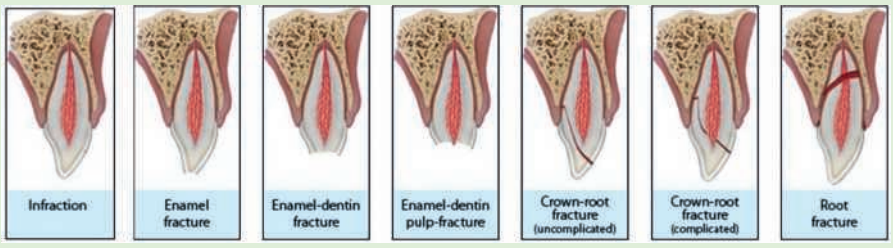


Figure 5: A series of illustrations of each of the seven injuries to the dental hard tissues and pulp.[3]

CONCLUSION

Good initial management of dental trauma is essential in determining the best possible prognosis of the teeth involved and is not limited to paediatric patients. Adult emergency patients attending with trauma can also be treated on the same principles with the knowledge that their teeth will be mature and therefore have closed apices. It is also worth bearing in mind that the trauma case you are presented with may have multiple dental injuries, therefore good application of the appropriate management options will be required. We hope this article has provided a concise

Table 6: A summary table of the seven injuries to dental hard tissues and pulp, and their respective treatment options[3]

Type of injury	Description of injury	Treatment (Permanent Dentition)
Infraction	Incomplete fracture of the enamel without loss of tooth substance	No treatment indicated, no review necessary
Enamel fracture	Fracture causing loss of enamel but not exposing dentine	Lost enamel replaced with composite
E-D Fracture	Fracture of enamel and dentine but not involving pulp	Lost enamel and dentine replaced with composite to provide dentinal coverage
E-D-P Fracture	Fracture of enamel and dentine causing exposure of the pulp	Maintain vitality of pulp by apexogenesis or apexification. If tooth is non-vital then RCT and restore with composite or crown
Uncomplicated crown-root fracture	Fracture involving enamel, dentine and cementum, but does not involve pulp	Temporarily splint tooth, if tooth is restorable post crown, if not then XLA
Complicated crown-root fracture	Fracture involving enamel, dentine, cementum and pulp	Temporarily splint tooth, maintain vitality of pulp by apexogenesis or apexification. If tooth is non-vital then RCT and restore with post crown
Root fracture	Fracture of only the root involving the cementum, dentine and pulp	Reposition crown of tooth, splint for at least 4 weeks, monitor pulp status alongside, RCT up to fracture line if tooth becomes non-vital

reference guide to dental trauma in the young permanent dentition and has helped improve confidence on the topic amongst dental students. A useful source to refer to for extra information is the Dental Trauma Guide where you will also find the IADT guidelines.

'Adult emergency patients attending with trauma can also be treated on the same principles with the knowledge that their teeth will be mature and therefore have closed apices.'

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Vishal Davda and Neel Sethi

Pastest

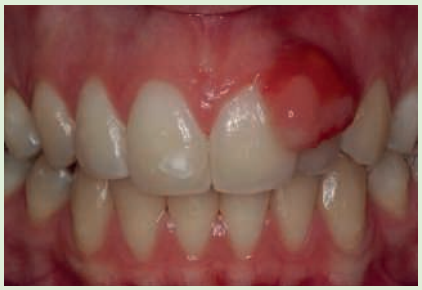
REVISION

Answers for revision questions from PasTest

Questions are on page 35

Question 1

You are a dentist in general practice and a 30-year-old female presents with the gingival appearance shown on the right. Take a brief history and explain to the patient what is the most likely diagnosis and treatment of the lesion.



ANSWER

1. Introduce yourself politely to the patient.
2. Check their medical history including smoking, alcohol and pregnancy status, and medication history.
3. Ask questions regarding the lesion/lump:
   - When and how did you first notice it?
   - Has it changed?
   - What symptoms does it cause, eg pain?
   - Does it ever disappear, if so what makes it come back?
   - Ever had similar lesions or have similar lesions elsewhere?
   - Any associated features, eg bleeding?
4. Explain to the patient that it is a discrete swelling on the gum which may be due to hormonal changes. If the patient has told you they are pregnant, explain that it is likely to be a pregnancy epulis (a localised gingival lump usually located on the labial interdental papilla). If the patient has mentioned they are or have been systemically unwell, then refer them to their GP.
5. What treatment would you advise? Explain that conservative treatment (oral hygiene and scaling) is indicated unless an epulis interferes with occlusion or is unsightly – in which case it can be surgically removed and sent for confirmatory histology.

   In this case, oral hygiene and scaling is the treatment of choice.

   Explain that poor oral hygiene predisposes to exacerbation of inflammation as a result of increased progestogen levels. This typically occurs in the second month of pregnancy and reaches a peak at around the eighth month and may revert to the previous level of gingival health after delivery of the baby.

NB: Differential diagnosis of discrete gingival lumps includes:

- Giant cell tumour
- Exostosis
- Pyogenic granuloma
- Cyst
- Neoplasm.

The history and clinical findings will help in the differential diagnosis.

Question 2

A. Describe the clinical signs seen in this photograph.

B. What medical condition does the patient have?

C. How may this condition influence dental treatment and health?

ANSWER

A. The clinical signs seen in the photograph are:

- Fingers with swan neck deformity (hyperextended proximal interphalangeal [PIP] joints and flexed distal interphalangeal [DIP] joints).
- Boutonnière's deformity (flexed PIP joints, extended metacarpophalangeal [MCP] joints and hyperextended DIP joints).
- Other features associated with rheumatoid arthritis but not seen on this picture are thumbs with 'Z' deformities and subluxation of the MCP joints and wrists with ulnar deviation.

B. Rheumatoid arthritis.

C.
- The patient may be on non-steroidal anti-inflammatory drugs (NSAIDs), so you do not want to prescribe further NSAIDs for dental pain.
- The patient may be on steroids. Consider the need for prophylaxis in those with actual or potential adrenocortical suppression. Dose for prophylaxis is 100 mg hydrocortisone (as sodium succinate) intramuscularly, 30 minutes pre-operatively.
- The patient may have rheumatoid arthritis in other joints, eg temporomandibular joints.
- The patient may have other problems, eg the rheumatoid arthritis may be part of a connective tissue disorder in Sjögren syndrome.
- The patient may have difficulty with toothbrushing due to decreased manual dexterity.
- If the patient is to have a general anaesthetic there is a risk of atlanto-axial joint subluxation when extending the neck.

Question 3

A 78-year-old lady, who smokes presents with a left submandibular gland swelling. On examination she has a scar in the right submandibular region, which she says was from an operation to remove a gland and the result was a benign tumour.

A. Mucoepidermoid carcinoma

B. Pleomorphic adenoma

C. Maltoma

D. Adenoid cystic carcinoma

E. Warthin's tumour

ANSWER

E. Warthin's tumour

Warthin's tumour (adenolymphoma) is a benign tumour that is more common in women and smokers. They are bilateral in 15% of cases, however the masses normally present at different times.

Question 4

Which of the following spreading odontogenic infections can present with minimal swelling and absolute trismus?

A. Sublingual

B. Parapharyngeal

C. Submandibular

D. Submaseteric

E. Buccal

ANSWER

D. Submaseteric

The masseter is an extremely powerful muscle and irritation due to underlying abscess leads to irritation, spasm and therefore trismus.

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