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Clinical Dentistry is committed to the advancement of practical clinical skills in dentistry. Through its focus on inspirational clinical casework, its sole aim is to help general dental practitioners enhance their skills and techniques across every facet of dentistry in an easy-to-assimilate and practical way.

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THE BIGGER PICTURE

In today's increasingly frantic world, it's easy to fixate on the need to get things done quickly and miss the bigger picture. This applies to every aspect of our lives – whether in dentistry or not. That's why the simple but powerful question posed by Noel Stimson in this issue (on page 13) resonated with me so much. He asks: when repairing a storm-damaged house, would you start with the leaking roof, or repaint the front door?

It's a metaphor that applies not only to integrative orthodontics and malocclusion, but to a wider truth about dentistry today.

I've recently had the pleasure of collaborating with Dr James Goolnik, founder of Optimal Dental Health, on a series exploring holistic dentistry. Covering topics from setting up a holistic practice to nutritional support and cranial osteopathy, this series – of which Noel's article is a part – highlights how an integrative approach can deepen the care dental professionals provide. (You can find others like it at dentistry.co.uk/tag/holistic-care/.)

The evidence linking oral health with systemic disease is now overwhelming. Periodontal disease has associations with cardiovascular illness, diabetes and cognitive decline. And patients are more aware of this than ever, reflecting a broader cultural shift: the global wellness market is predicted to reach \$9 trillion by 2028. For dentistry, this represents both an opportunity and a responsibility. Holistic dentistry is not about abandoning evidence-based practice. It is about widening the lens. By recognising that oral health and systemic health are inseparable, dental professionals position themselves as integral partners in overall wellbeing.

In practice, this may mean rethinking the use of materials, or addressing airway health and sleep-disordered breathing as part of comprehensive treatment planning. For children, it can mean early intervention in growth and jaw development. And often, it is as simple as factoring lifestyle, nutrition and patient values into the conversation. This isn't to overlook the risk of 'holistic' being misused as a buzzword; clinicians must ground this approach in evidence, rather than pseudoscience. However, done well, holistic dentistry strengthens rather than dilutes the profession's evidence base.

Dentistry has always been about more than 'drill and fill'. By embracing a holistic framework, dental professionals can reaffirm their role in protecting not just smiles, but lives too.



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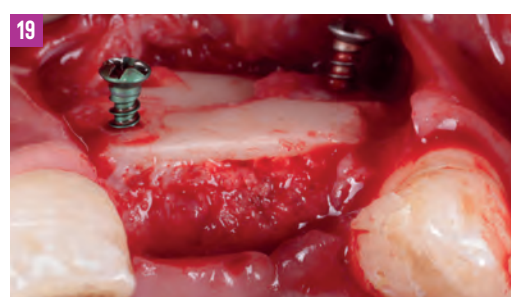
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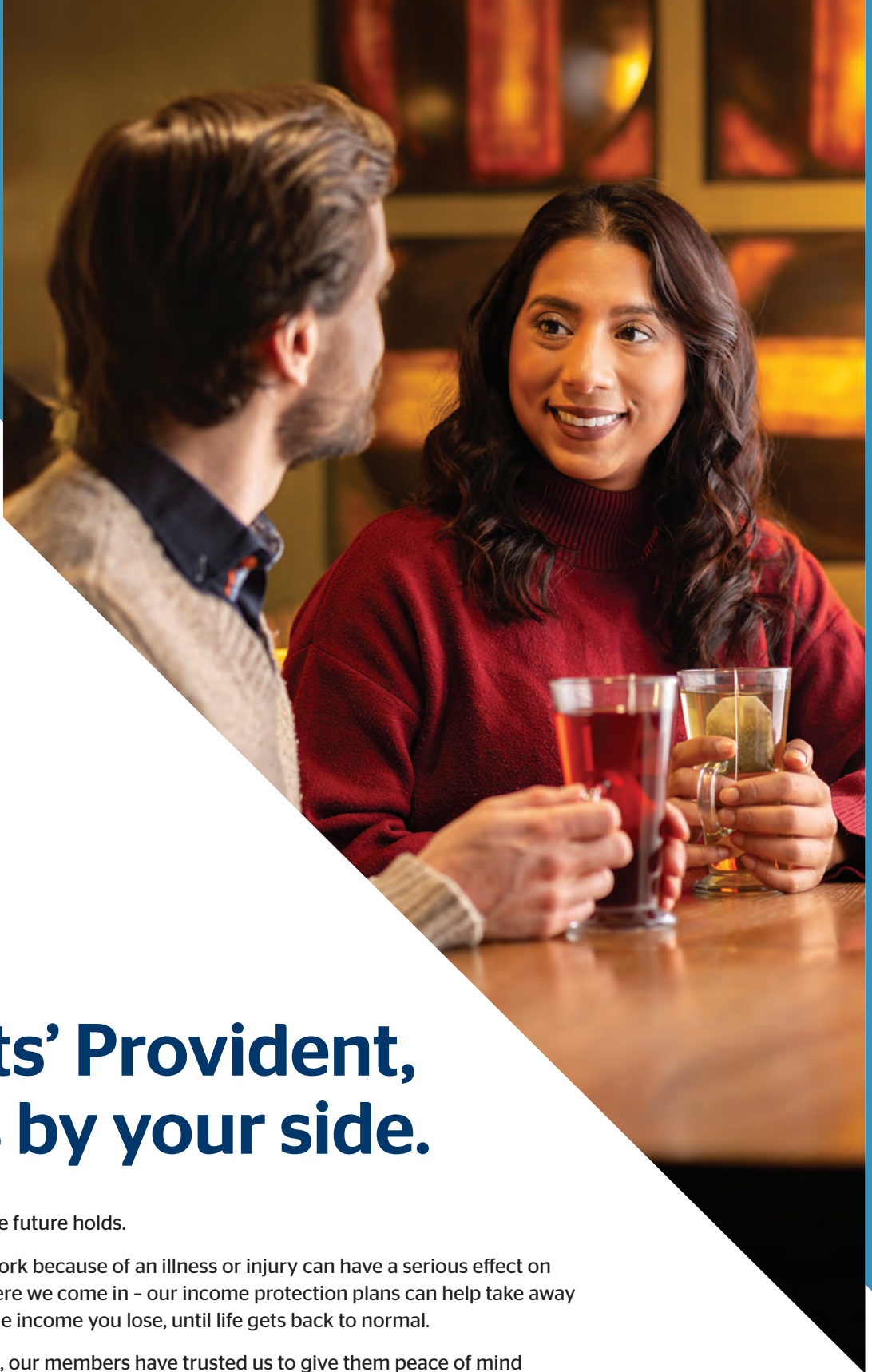
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NOEL STIMSON

Malocclusion: integrative orthodontics

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The treatment team may need to include a cranial osteopath or chiropractor, ear, nose and throat (ENT) specialist, TMD specialist, a myofunctional and a speech therapist (Garliner, 1968; Moyers, 1964) and an orthodontist to finalise the tooth alignment. If appropriate, homeopathy, acupuncture, nutrition, and an Alexander teacher may need to be brought in to the team - Noel Stimson, p13

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ENHANCED CPD

CPD hours: 0.5

GDC development outcome: C

Topic: General dentistry

Educational aims and objectives:

To explore malocclusion from the perspective of integrative orthodontics. This article qualifies for one hour of enhanced CPD; answer the questions on page 66.



I have been interested in the holistic aspects of dentistry since the 1980s, when my practice was mercury free, with a number of local homeopathic, chiropractic, and nutritional links.

It had become obvious to me that there were many further connections between dentistry and other aspects of the body, the head and the face that we needed to understand and be aware of, especially in consideration of current craniofacial thinking.

Perhaps the most startling revelation for me came later, from an osteopath colleague who had realised that the teeth, which we dental students had studied for four or five years, are in reality simply the passengers in the process of craniofacial growth and development.

The teeth have no inherent motility other than eruption and so are simply carried into their 'final' position by bony growth, which is then limited and controlled by the oral muscles – especially the tongue. I believe that makes complete sense.

Yes, we had all learned in dental school that muscle force will always win over bony growth (Alabdullah et al, 2015), but it did not really carry through into orthodontic planning and treatment.

Indeed, orthodontic training in the UK has all but disappeared from the undergraduate curriculum and recently has become available only through a further two or three years of formal postgraduate training, at considerable cost.

MALOCCLUSION

Our approach to malocclusion is shown in Figure 1 – cause and effect, the principle being that if all the aetiological factors are not addressed adequately (ie holistically), long-term post-treatment stability will be threatened, and relapse will become inevitable a few years down the line.

Aetiology

The causes of malocclusion (the aetiology) are the primary focus for prevention and treatment where feasible. Listed in probable order of importance, the causes are:

1. Birth, which can cause cranial (skull) compression and distortions
2. Bottle feeding and pacifiers, which encourage dysfunctional muscle habits that breastfeeding would avoid
3. Tongue posture, which may be dysfunctional due to retained primary swallow tongue thrust or tongue tie
4. Facial growth, which may be limited due to two and three above
5. Genetics, which is commonly – but mistakenly – viewed as the only aetiological factor.

Practitioners required for treatment would include a cranial osteopath, and later, a myofunctional therapist.

Breastfeeding is fundamental to good craniofacial development (Cudzilo, Pałczynska and Bednarczyk, 2018) and preventive care would involve a breastfeeding counsellor.

Signs and symptoms

The possible effects (the signs and symptoms) of malocclusion are the next focus for treatment:

- Facial profile, especially Angle's class II or Angle's class III
- Airway and breathing issues can lead to obstructive sleep apnoea (OSA), poor oxygenation and education issues (Dunn, Green and Cunat, 1973; Raphael, 2017; Trenouth and Desmond, 2016; Balfour, Philcock and Simonetti, 2020)
- Temporomandibular disorder (TMD). Angle's class II and deep bites have a tendency to retrude the condyles. Thoughtless retrusive treatment often drives the condyles into a TMD (Wei, Guo and

Noel Stimson explores malocclusion from a holistic, integrated approach

Malocclusion: integrative orthodontics



Zhao, 2024)

- Head posture due to retrusive mandible and unbalanced head weight
- Speech issues due to limited tongue space.

The treatment team may need to include a cranial osteopath or chiropractor, ear, nose and throat (ENT) specialist, TMD specialist, a myofunctional and a speech therapist (Garliner, 1968; Moyers, 1964) and an orthodontist to finalise the tooth alignment.

If appropriate, homeopathy, acupuncture, nutrition, and an Alexander teacher may need to be brought in to the team.

The whole process is much easier all round if it is started as early (young) as possible, probably around five to eight years of age.

There may be need for a later stage to refine the occlusion in the teens, this probably being of short duration as the necessary underlying orthopaedic and soft tissue changes will have been completed.

EXTRACTION

In the majority of cases of occlusal crowding and intermaxillary imbalance, we always try to avoid extracting healthy teeth.

Our view is that the crowding is only rarely caused by there being too large or too many teeth (as is often claimed), but rather by insufficient growth, causing a lack of space or arch length for all the permanent teeth, large or not, to fit in.

Do we ever extract? Yes, we do, very occasionally; maybe in five to 10% of cases when the maxilla is sufficiently prognathic relative to the cranial base, allowing sufficient accommodation of any retraction effects.

The decision to extract should be made when orthopaedics has not been successful. The rule being ‘extractions are a last resort, not the first thought’.

The initial treatment should be directed at the lack of growth – orthopaedically – not the

number or size of the teeth. This will involve cranial as well as myofunctional support, and maybe much more, for a stable result.

The setting for malocclusion commonly occurs at birth due to cranial compression. Waiting 12 or 14 years before treating no longer makes sense, since early holistic treatment is so much easier once the signs of inadequate maxillary growth and a dysfunctional swallow have been identified.

Malocclusion is merely a sign of what is happening in the vicero-cranium. If one were faced with repairing a storm-damaged house, where would one start? Fix the leaking roof, or repaint the front door? ☒

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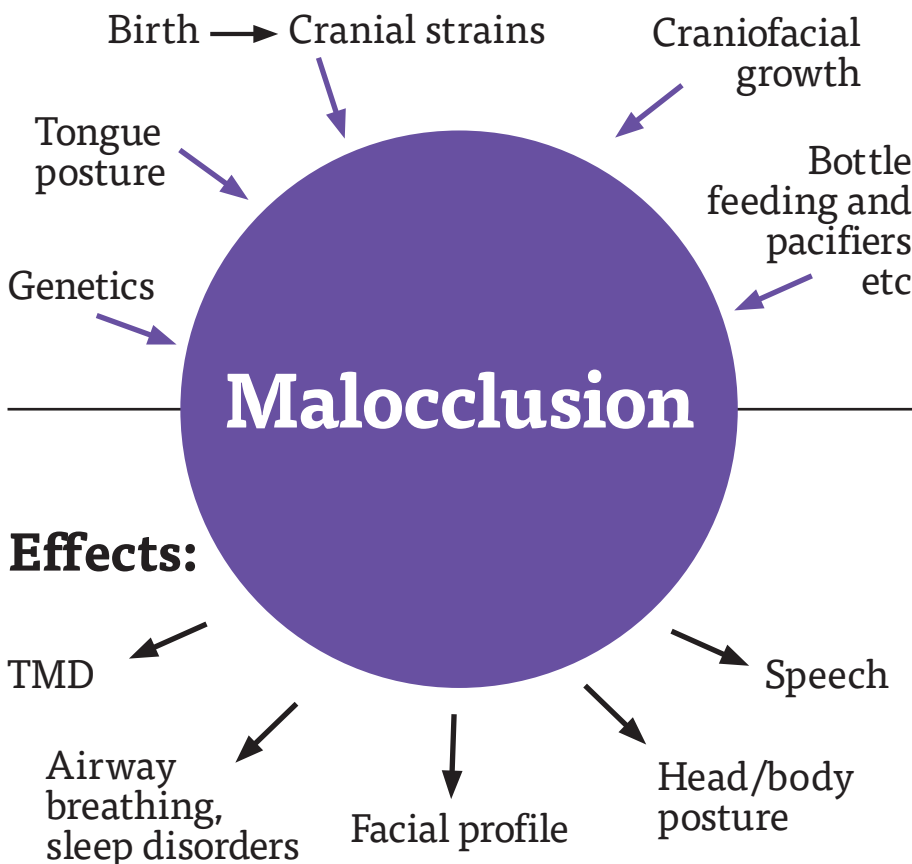


FIGURE 1: Factors involved in malocclusion from the perspective of integrative orthodontics

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Restoring function and aesthetics

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This case reinforces the critical importance of interdisciplinary collaboration, phased treatment planning, and adaptable surgical and prosthetic techniques when managing extensive hard and soft tissue deficiencies in the aesthetic zone – Azim Malik and Emma Allsopp, p19

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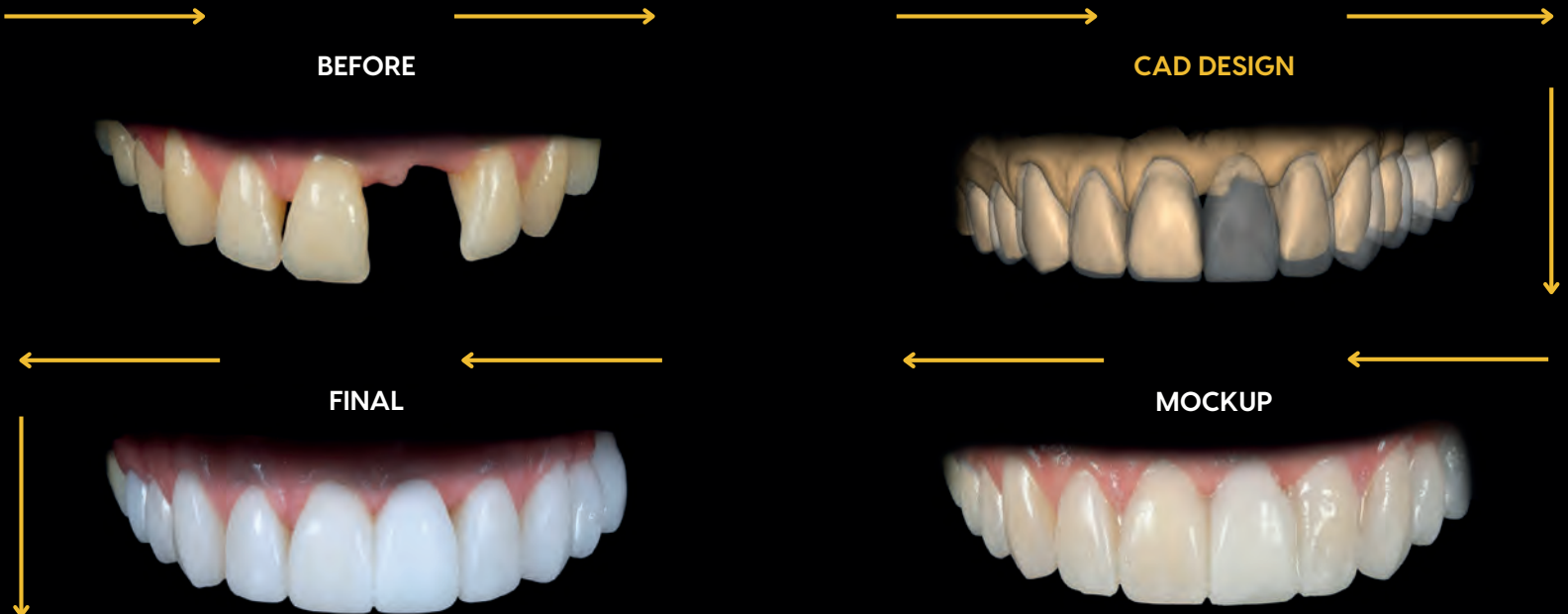
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Azim is a specialist periodontist and an implant surgeon. He graduated from the University of Birmingham, School of Dentistry, in 2011 and completed his specialist training in periodontology and implant dentistry at the Royal London Dental Hospital/ Barts Health. Azim works at Norton Implants and is the co-founder of Edudent Academy.



EMMA ALLSOPP
Emma qualified in dental technology in 1992 after studying at South London college. She joined Nexus Dental Laboratory in 2022.

This case report details the comprehensive management of a challenging maxillary anterior defect. The patient was referred with a large recession defect affecting the upper left central and lateral incisors (UL1 and UL2).

Clinical and radiographic examination revealed advanced resorption of the UL1, coupled with a complete absence of buccal bone extending to the apex of both the UL1 and UL2 (Figure 1).

This complex presentation necessitated a multi-stage approach to achieve both functional and highly aesthetic restoration of the site.

The treatment plan, created by the dental team and mutually agreed upon with the patient, aimed to address the severe hard and soft tissue deficiencies and ultimately provide a durable, aesthetic and biologically stable tooth replacement.

The primary technical solution required was the meticulous reconstruction of the alveolar ridge and surrounding soft tissues to allow for implant placement and an aesthetic final prosthetic outcome.

CHALLENGES

The successful management of this case was underscored by several key challenges inherent to severe maxillary anterior defects.

Foremost among these was the extreme hard tissue deficiency, specifically the complete absence of buccal bone to the apex of the UL1 and UL2, making conventional implant placement immediately unfeasible.

The significant soft tissue recession further complicated the aesthetic prognosis. Achieving



FIGURE 1: Initial presentation – significant recession and resorption defect at UL1



FIGURE 2: Digital wax-up on a 3D model, showcasing the complexity involved in designing the definitive crowns to achieve optimal aesthetics and emergence profile in the compromised anterior region

ENHANCED CPD

CPD hours: one

GDC development outcome: C

Topic: Aesthetic dentistry

Educational aims and objectives:

To present a step-by-step surgical and prosthetic approach to a complex anterior case. This article qualifies for one hour of enhanced CPD; answer the questions on page 66.



Azim Malik and Emma Allsopp present a step-by-step surgical and prosthetic approach to a complex anterior case

Restoring function and aesthetics

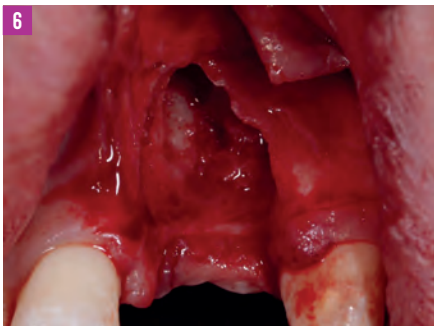
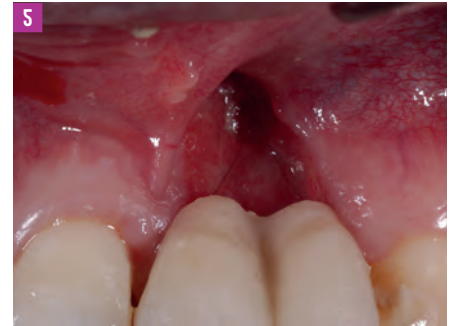




FIGURE 3: Immediate resin bonded bridge was fitted at the time of extraction with UR1 and UL3 as bridge abutments



FIGURES 4 and 5: The extraction site after four months of healing. A severe buccal defect can be seen



FIGURES 6 and 7: Lateral pedicle flap, a split thickness flap was taken from the UL3 and laterally moved with coronal advancement

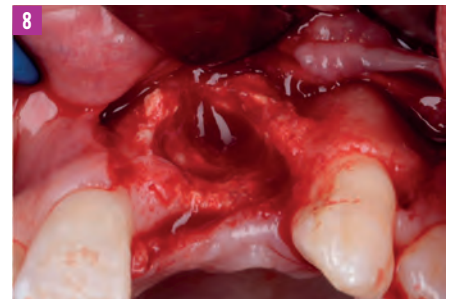
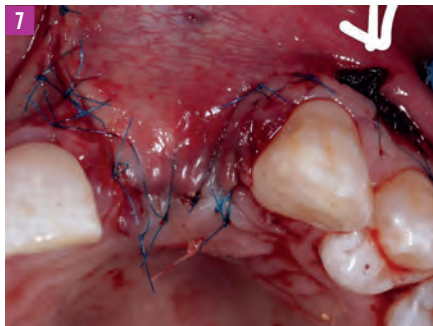


FIGURE 8: Intraoperative photo during the flap elevation for the large bone graft, showing the defect clearly



FIGURES 9 and 10: A Khoury type bone graft was performed in the area

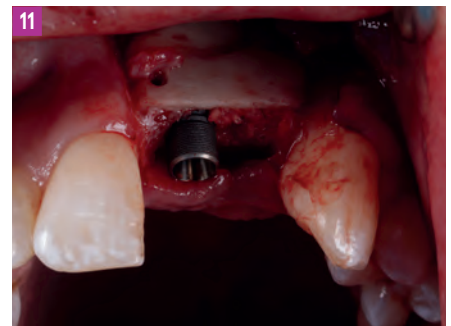
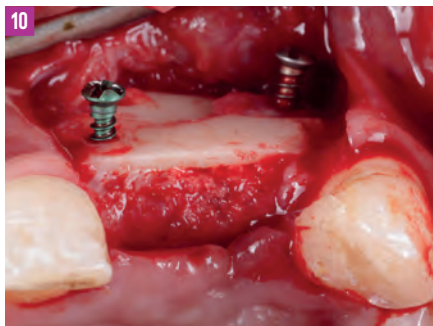


FIGURE 11: Implant placement

Ensuring predictable healing and integration through multiple surgical phases required precise planning and execution, along with consistent communication

optimal shade matching and natural tissue contours in the highly visible anterior maxilla presented a substantial aesthetic challenge.

Furthermore, ensuring predictable healing and integration through multiple surgical phases required precise planning and execution, along with consistent patient and interdisciplinary communication between the surgery and dental laboratory (Figure 2).

TECHNICAL WORK

The treatment commenced with the careful extraction of the compromised UL1 and UL2. A collagen sponge was placed to aid clot stability. Post-extraction, the site revealed the extent of the buccal bone deficiency (Figures 3 to 5).

Given the lack of adequate soft tissue for primary closure after necessary bone grafting,

the initial reconstructive phase focused on establishing a soft tissue foundation. The only feasible way of performing this was with a lateral pedicle flap from the neighbouring UL3 region.

Soft tissue was harvested from a neighbouring site, which was then utilised as a lateral pedicle graft, cushioned by an underlying xenograft material (Figures 6 and 7).

This approach aimed to provide us with soft tissue volume to perform a larger bone graft to ultimately place the implant into.

A healing period of four months was observed to allow for graft maturation and initial tissue integration. Crucially, following this augmentation, a provisional resin bonded bridge was used as a temporary. This temporary restoration provides protection to the underlying surgical site.



FIGURE 12: Radiographic view of the Astra Tech EV 4.2 S implant immediately after placement in the UR1 region

A unique aspect of this case was the utilisation of the patient's own extracted tooth crowns. These were carefully preserved and provided to the dental laboratory

Following the initial soft tissue healing, a second surgical stage was performed involving a raised flap approach to address the underlying hard tissue deficit (Figure 8).

Extensive bone augmentation was undertaken utilising a combination of autogenous bone chips, harvested from a suitable intraoral site, and an allograft cortical plate (Figures 9 and 10).

This composite graft technique was chosen to provide both osteoinductive and osteoconductive properties, promoting robust bone regeneration and establishing a stable foundation for future implant placement.

A further five-month healing period was allowed to ensure complete graft consolidation and maturation.



FIGURE 13: Astra Tech EV 4.2 S implant before placement

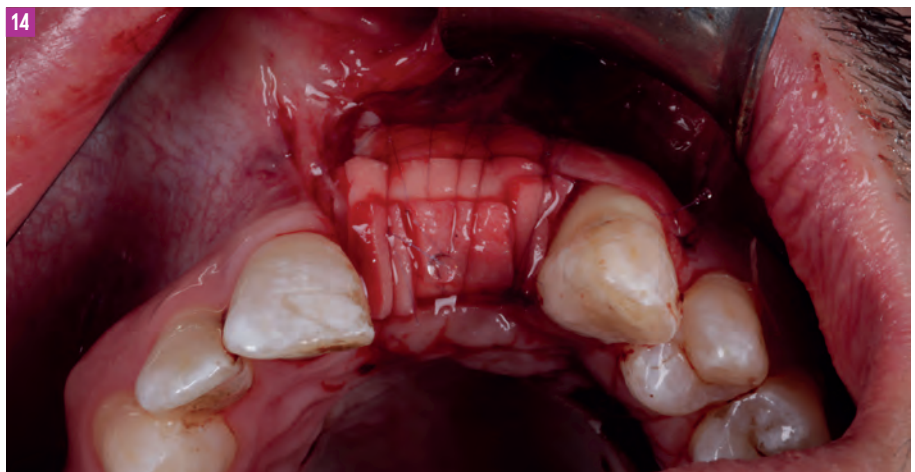
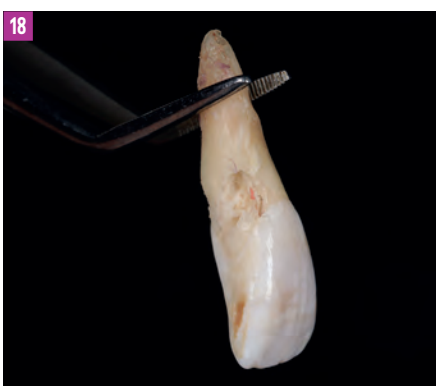


FIGURE 14: Final soft tissue augmentation



FIGURE 15: Screw-retained provisional crowns



FIGURES 16 to 18: Extracted tooth crowns used as a guide for precise shade and white lesion matching of the final bridge

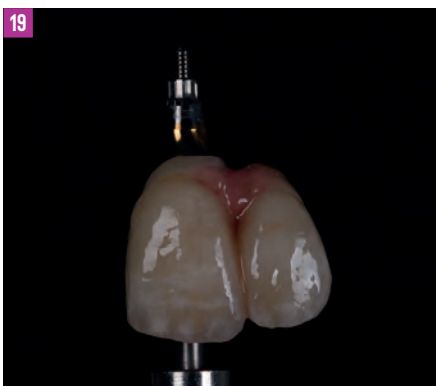


FIGURE 19: The definitive bridge restoration prior to final insertion



FIGURE 20: Post-treatment view of the final bridge restoration, demonstrating successful integration and aesthetic outcome



FIGURE 21: Close-up view highlighting the meticulous colour and white lesion matching of the final restoration

After successful bone regeneration, a single implant (Astra Tech EV 4.2 S) was precisely placed in the restored upper left central incisor (UL1) position (Figures 11 to 13).

The decision to use this specific implant system was based on its proven predictability and restorative versatility.

A three-month osseointegration period followed the implant placement, allowing for the stable integration of the implant with the newly formed bone.

The final surgical phase involved a soft tissue augmentation procedure to refine the peri-implant tissues and achieve optimal gingival contours (Figure 14).

This was accomplished using a combination of autogenous connective tissue, carefully harvested, and an allograft.

This dual-source approach maximised the potential for volume and stability of the soft tissue around the implant.

Crucially, following this augmentation, a screw-retained provisional crown with a cantilever bridge extension to the lateral incisor was fabricated.

This temporary restoration was strategically employed to meticulously shape and mould the newly augmented soft tissues, guiding their maturation and establishing an ideal emergence profile and papilla architecture in anticipation of

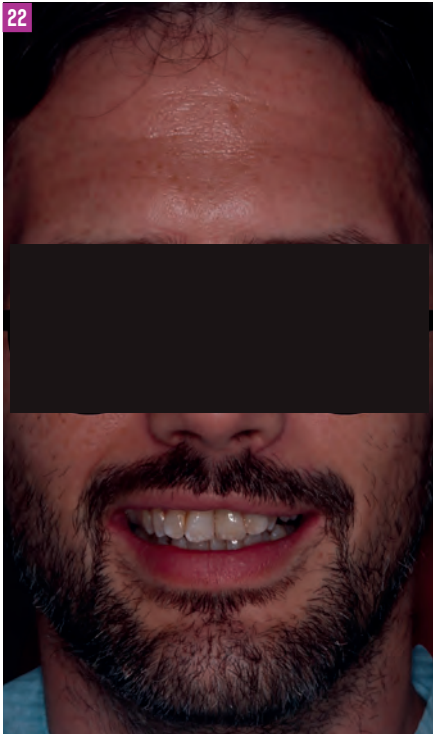


FIGURE 22: Full face photo of patient with final restoration in situ

the definitive prosthesis. In addition, it provided crucial protection to the underlying surgical site (Figure 15).

Throughout all stages, meticulous attention was paid to patient and dentist communication, ensuring that expectations were managed, and the treatment progress was clearly understood, fostering trust and compliance.

FINAL PRODUCT

Following the soft tissue augmentation, the precisely contoured provisional restoration facilitated ideal tissue maturation. The definitive restoration involved a fixed bridge, custom-fabricated to replace the missing tooth.

A unique aspect of this case was the utilisation of the patient's own extracted tooth crowns. These were carefully preserved and provided to the laboratory, enabling an unparalleled level of precision in matching the natural colour, translucency, and even subtle white lesions present on the adjacent dentition (Figures 16 to 18). This approach ensured an exceptionally biomimetic and aesthetically harmonious final result.

For this case, a zirconia crown with buccal layering was used on top of a custom titanium abutment for a natural emergence profile and perfect crestal zone shape with polished zirconia in the cervical area (bonded zone) to promote epithelium adhesion (Figures 19 to 22).



FIGURES 23A and 23B: Three-month follow-up. The soft tissue has settled, revealing the final, stunning result of the cantilever bridge with a perfectly blended artificial gum

At the three-month follow-up, the soft tissue had settled, revealing the final, stunning result of the cantilever bridge with a perfectly blended artificial gum (Figures 23a and 23b).

REFLECTIONS

Looking back at this complex case, several aspects contributed to its successful outcome.

The meticulous, staged surgical approach, allowing the correct time for the tissue to heal, combining various grafting techniques, was fundamental in overcoming the severe initial tissue deficits.

The sequential use of both the Maryland bridge for initial site management and the screw-

retained cantilevered provisional restoration for precise soft tissue sculpting proved invaluable in guiding the final emergence profile.

This case reinforces the critical importance of interdisciplinary collaboration, phased treatment planning, and adaptable surgical and prosthetic techniques when managing extensive hard and soft tissue deficiencies in the aesthetic zone. [CD](#)

PRODUCTS USED

Astra Tech EV 4.2 S
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HOW SCANNING EVERY PATIENT TRANSFORMS CASE ACCEPTANCE AND PRACTICE GROWTH



DR MILAD SHADROOH

Milad qualified in 2004 from Barts and The London and he has worked at Chequers Dental ever since. The Singing Dentist is also a trainer for Avant Garde and author of *The Whole Tooth*.



ITERO

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DRIVING ROI IN DENTISTRY

For many dental principals, investing in new technology is a balancing act. While the clinical benefits may be clear, the question remains: will it deliver a meaningful return on investment? Dr Milad Shadrooh, aka 'The Singing Dentist', has answered that question definitively in his practice with the introduction of the Scan Every Patient (SEP) protocol, powered by the iTero™ intraoral scanner. The results demonstrate that integrating routine scanning can transform patient engagement, boost case acceptance, and deliver measurable financial growth.

SEEING IS BELIEVING: ENHANCING CASE ACCEPTANCE

At the heart of the SEP protocol is the principle that every patient, regardless of why they attend, is offered a digital intraoral scan. This small change has had a profound effect on case acceptance. Patients can now see their dental health issues in 3D for the first time, rather than simply being told about them. This visual 'wow factor' builds trust, prompts questions, and turns routine appointments into collaborative treatment discussions.

Dr Shadrooh explains: 'Once patients see the scan, they start asking the questions themselves. It takes the pressure off associates to initiate difficult conversations, and suddenly treatment planning becomes a shared journey rather than a sales pitch.'

CLEAR EVIDENCE OF FINANCIAL UPLIFT

The ROI evidence at Dr Shadrooh's practice is backed by hard numbers. His associate, Dr Ploy Intawong, saw a 35% increase in her monthly earnings in the seven months after adopting the SEP protocol compared with the seven months prior. When her earnings were compared with colleagues who had not been involved with scanning every patient protocol pilot, the difference was even more striking. Previously, Dr Intawong earned less than her peers. After SEP, she earned 65% more than one associate and 24% more than another.

In one standout case, a patient initially declined a £14,000 full mouth rehabilitation plan. Six months later, after being scanned under the new protocol, the same patient accepted the identical plan, citing the scan visuals as the deciding factor. While other factors may have contributed, Dr Shadrooh firmly believes the intraoral scan was pivotal in converting the case.

INVESTMENT THAT PAYS FOR ITSELF

The financial impact is clear: increased case acceptance leads to more treatments, more revenue, and higher associate satisfaction.


Dr Shadrooh acknowledges that some principals hesitate at the upfront cost of a scanner, but he emphasises that the numbers 'speak for themselves'.

Not only is the scanner a tax-deductible investment, but repayments can be spread over time, with ROI accelerating once the technology is fully integrated.

'If you're doing cosmetic work, Invisalign, or big restorative cases, the scanner pays for itself many times over,' says Dr Shadrooh.

THE ROI VERDICT

By adopting the Scan Every Patient protocol, Dr Shadrooh's practice has proved that digital scanning is more than just a clinical tool, it is a business investment with tangible returns.

For practices considering whether the investment is worthwhile, the evidence is compelling: a scanner doesn't just improve dentistry, it improves the bottom line. 



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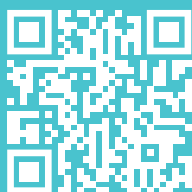
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DIGITAL DENTISTRY

VISHAN PATEL
AI and caries detection

28



Before, patient consultations involved a lot of detective work and interpretation: explaining gradients of grey, drawing diagrams, and hoping patients could follow along. Now I have a tool that allows me to show them exactly what's going on in their mouths, with clarity and precision – Vishan Patel, p28

A WINDOW ON THE WORLD OF DIGITAL DENTAL WORKFLOWS

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**DR VISHAN PATEL**

Vishan is a dental surgeon at Bush Dental Clinic in London. He graduated from the University of Bristol and now has a special interest in cosmetic dentistry.

ENHANCED CPD

CPD hours: one

GDC development outcome: C

Topic: Digital dentistry

Educational aims and objectives:

To discuss AI-enhanced imaging and AI-driven diagnostics and how they can aid treating caries. This article qualifies for one hour of enhanced CPD; answer the questions on page 66.



In recent years, artificial intelligence (AI) has begun to shape and refine the way we deliver dental care in so many aspects of our work. At Bush Dental in London, one of the most transformative tools we've integrated into our workflow is Hello Pearl's AI software system. From diagnostics to patient communication, this has fundamentally changed how I practise dentistry, and how patients perceive their oral health. This has led to a greater case acceptance and turned me from a sceptic to an advocate.

Before, patient consultations involved a lot of detective work and interpretation: explaining gradients of grey, drawing diagrams, and hoping patients could follow along. Now I have a tool that allows me to show them exactly what's going on in their mouths, with clarity and precision.

CASE ONE: INITIAL PRESENTATION AND DIAGNOSIS

The patient, a male in his mid-30s, presented in May 2023. He was medically fit and well and admitted to brushing once to twice daily. He expressed no pain or visible concerns.

Upon examination, I found plaque accumulation and food trapping in posterior sextants. He had multiple early carious lesions, primarily enamel-based, with poor interdental hygiene. Radiographs indicated incipient lesions in molar and premolar regions bilaterally. Despite the findings, the patient declined treatment. He cited lack of symptoms and an intention to wait until issues became 'serious'. Efforts to explain caries progression and risks were met with polite dismissal.

RE-EVALUATION AND USE OF AI

With the integration of the Hello Pearl AI software's 'compare' tool earlier that year, a recall appointment offered the opportunity to review the patient's condition with a novel new approach at a subsequent appointment in September 2024. Updated bitewings were taken and analysed

alongside the 2023 images. Reviewing the comparative X-rays using the software was edifying. Colour-coded overlays revealed the progression of the lesions into the dentine. Quantitative data assigned a percentage depth and severity to each lesion and clear, side-by-side visualisation of worsening decay across multiple sites (Figures 1 and 2).

The patient was visibly taken aback by the difference. The clarity of AI-generated visuals, including specific numerical progression, replaced prior denial with undeniable evidence. This moment served as a turning point. The patient accepted a comprehensive treatment plan without hesitation.

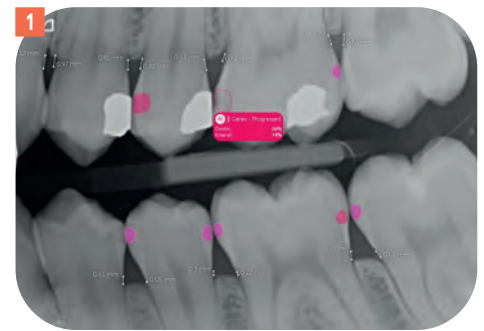


FIGURE 1: First image taken in May 2023



FIGURE 2: Second image taken in September 2024

Vishan Patel explores how AI-enhanced imaging and AI-driven diagnostics can transform caries treatment

AI and caries detection



FIGURES 3 to 9: Case one - treatment progression

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TREATMENT PLAN AND EXECUTION

Our treatment plan was to achieve full-mouth stabilisation of the patient's caries and conduct elective replacement of his existing amalgam restorations.

Initial phase: oral hygiene and education

- Tailored oral hygiene instruction
- Introduction of fluoride mouthwash (used separately from toothbrushing)
- Referral to hygienist for full-mouth debridement and review of interdental cleaning.

Clinical steps

- Preoperative photography (Figure 3) and local anaesthetic
- Rubber dam isolation for moisture control
- Access to carious lesions and existing amalgam removal
- Caries removal and margin refinement
- Air abrasion with Aquacare for cavity cleansing
- Tooth rebuilding using sectional matrices
- Incremental placement of Venus Pearl Flow and Venus Pearl composite
- Final polish using Sof-Lex discs and rubber wheels.

OUTCOME AND PATIENT RESPONSE

The treatment outcome was successful. All the patient's carious lesions were successfully treated and restored (Figures 4 to 8).

His improved gingival health and plaque control was evident at follow-up and there were no signs of active decay or sensitivity. He reported no complications and the elective composite restorations had undoubtedly improved his aesthetics (Figure 9).

The patient reported an increased confidence and satisfaction with his oral health.

He very much appreciated the removal of amalgam and preventative approach we took and stated a commitment to ongoing maintenance and regular recall attendance.

CONCLUSION

This case exemplifies how integrating AI into general dental practice can bridge the gap between diagnosis and patient acceptance.

Hello Pearl AI software enabled clear, comparative communication that empowered the patient to understand, accept, and complete necessary treatment – avoiding further deterioration.

As AI tools become more prevalent in dentistry, their role in enhancing trust, compliance, and preventive care is likely to become indispensable.

CASE TWO: INITIAL PRESENTATION AND DIAGNOSIS

When this patient first presented, my immediate attention was drawn to two obvious carious lesions in the upper right quadrant, visible both clinically and radiographically. However, what was subtler was a faint radiolucency on the lower right first molar (LR6) (Figure 10).

On a standard bitewing, this appeared to be an enamel lesion, something I would have typically opted to monitor with oral hygiene instruction and fluoride application.

As part of our workflow protocol, we conducted:

- A full intraoral examination
- Bitewing radiographs
- An Itero digital scan to help the patient visualise their dentition in 3D
- Analysis using Hello Pearl's AI Second Opinion software, which highlighted and quantified carious activity across multiple sites.

AI-DRIVEN INSIGHT AND EARLY INTERVENTION

The decisive moment came when the Hello Pearl AI software flagged the lesion on LR6 as extending into dentine, despite appearing superficial on the standard radiograph. This prompted a change in the treatment plan.

Instead of monitoring, I decided to intervene early, a decision that ultimately spared the patient a more invasive restoration later on.

The AI-generated images provided colour-coded overlays and numerical data on each lesion's depth. Presenting these side-by-side with standard radiographs helped bridge the gap between clinical insight and patient comprehension. The patient could see, clearly and unambiguously, where decay was advancing. This was not just a technical win, but a communication breakthrough.

TREATMENT APPROACH AND EXECUTION

We structured the patient's treatment plan across two appointments to allow focused quadrant management and ensure patient comfort. Following the successful stabilisation of his posterior teeth, the patient initiated a conversation about cosmetic concerns,

specifically a discoloured filling on his central incisor from a childhood trauma. With disease control achieved and trust established, we proceeded to offer Enlighten tooth whitening and replacement of the anterior filling with a carefully layered composite veneer.

PATIENT IMPACT AND ENGAGEMENT

The use of Hello Pearl AI software fundamentally shifted this patient's perception of dental care. He remarked on how 'confident' he felt knowing the technology was thorough and contemporary.

Since completing treatment, he now attends regular hygiene appointments, actively requests to view his updated radiographs at check-ups and maintains significantly improved oral hygiene. This level of engagement would have been hard to imagine during the initial consultation.

CONCLUSION

This case underscores the powerful role AI can play – not just in spotting early lesions, but in transforming patient motivation and bridging the communication gap between clinician and patient.

Stabilising disease before cosmetic treatment not only improves outcomes but also builds trust. With tools like Hello Pearl AI, patients become partners in care, empowered by clarity and guided by data.


As digital dentistry continues to evolve, cases like this remind us that technology is not a replacement for human connection – but a powerful ally in making it stronger.

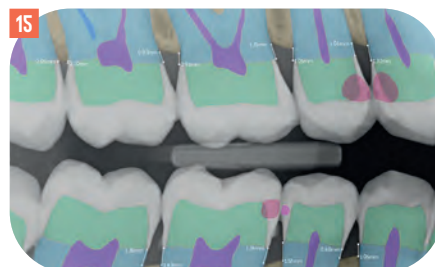
DISCUSSION

One concern many clinicians have is whether AI could replace human judgment. I can confidently assert that Second Opinion is a support tool, not a substitute. You remain in complete control. If you disagree with a finding, you can easily remove or adjust the annotation. This balance between automation and professional discretion is vital, and it's one the software handles exceptionally well.

In my experience, the only time the system might struggle is with poor-quality or overlapping X-rays, but when the radiograph is properly captured, the AI's consistency and accuracy are impressive.


The system has saved me significant time during appointments, up to nine minutes per visit; that's time I can reinvest into building rapport, educating patients, or simply running a more efficient practice. Moreover, patients are genuinely impressed. They love seeing the latest technology in action, and it reassures them that we're committed to offering the best care.

For me, Second Opinion enhances every stage of the patient journey. It makes complex findings simple, supports accurate treatment planning, and empowers patients to take ownership of their oral health. I couldn't imagine going back to grayscale films and drawn diagrams. 




FIGURES 10 to 15: Case two – images showing the decay and the filling carried out after using Hello Pearl AI software

REFERENCE

Pitts N, Mazevet M, Mayne C, Hinrichs S, Boulding H, Grant J (2017) Towards a cavity-free future: how do we accelerate a policy shift towards increased resource allocation for caries prevention and control? The Policy Institute at King's. Available at doi.org/10.18742/pub01-015 

PRODUCTS USED

Itero Align Technology
Second Opinion Hello Pearl
 Aquacare Velopex
 Sof-Lex 3M
 Venus Pearl Flow, Venus Pearl Kulzer
 Enlighten whitening Enlighten 

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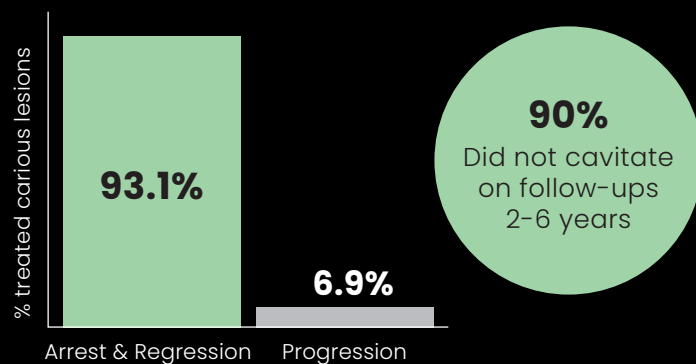
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¹ Godenzi D et al. J Am Dent Assoc. 2023;S0002-8177 (23)00416-6
*Long-term clinical study in public pediatric dental clinic in Chur, Switzerland

TWO CASE REPORTS DEMONSTRATING BIOMIMETIC, NON-INVASIVE CARIES MANAGEMENT WITH CURODONT™ REPAIR BY vVARDIS

GUIDED ENAMEL REGENERATION

Traditional management of early carious lesions often involves a passive ‘watch-and-wait’ approach until cavitation occurs, at which point invasive treatment is required. However, biomimetic treatments now offer clinicians the ability to intervene earlier, preserving natural tooth structure and improving patient outcomes.

CURODONT™ REPAIR, based on self-assembling peptide technology (P11-4), creates a 3D matrix within the lesion body, guiding hydroxyapatite formation using calcium and phosphate from the patients’ saliva. This approach promotes remineralisation without drilling, discomfort, or anaesthesia, making it ideal for both aesthetic and structural enamel remineralisation. The following cases (provided by Dr Giovanni Sammarco, Cariologia Clinica, 2025) demonstrate how CURODONT™ REPAIR can successfully arrest and reverse early lesions, offering patients a biologically sound alternative to traditional restorations.

CASE ONE: POST-ORTHODONTIC WHITE SPOT LESION MANAGEMENT

A 25-year-old male presented with a concern from white discoloration on the maxillary anterior teeth following fixed orthodontic treatment.

White spot lesions were visible on the labial surfaces of UL1 and UL2 (Figure 1a). The lesions evident both wet and dry.

Initial enamel caries (ICDAS Score 2) on UL1 and UL2, attributed to inadequate plaque control during orthodontic treatment were diagnosed. One in-surgery

application of CURODONT™ REPAIR was performed. The patient was also prescribed CURODONT™ PROTECT for at-home use twice weekly at bedtime. At the 16-month follow-up, the lesions showed a reduction in both size and opacity, indicating effective caries regression and aesthetic improvement (Figure 1b). The patient reported high satisfaction.

CASE TWO: EARLY INTERPROXIMAL LESION IN A HIGH CARIES-RISK PATIENT

Incidental finding during routine recall of a 28-year-old female patient with high caries risk. Bitewing radiograph revealed a radiolucent lesion on the distal surface of LL5 and mesial surface of LL6 (Figure 2a).

Initial distal enamel lesion (E2) was diagnosed on LL5, and moderate mesial dentine lesion on LL6.

CURODONT™ REPAIR was applied to LL5 and LL6. The patient was prescribed CURODONT™ PROTECT twice weekly.

At seven-month follow-up, the lesion showed signs of arrest and reduced radiolucency (Figure 2b), indicating enamel regeneration.

CLINICAL TAKEAWAY

These cases demonstrate how CURODONT™ REPAIR can effectively treat both early caries white-spot lesions and interproximal lesions in patients. By avoiding drilling, local anaesthetic and discomfort, this approach reduces patient anxiety and enhances trust. It also supports true biological healing through Guided Enamel Regeneration, preserving enamel rather than replacing it. [GO](#)



FIGURE 1A: Before – white spot lesions on UL1 and UL2



FIGURE 1B: After – 16-month follow-up showing significant reduction in size and appearance of the white spot lesions



FIGURE 2A: Before – radiolucent lesion on distal LL5 and mesial of LL6



FIGURE 2B: After – seven-month follow-up showing radiographic improvement

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ENDODONTICS

SADIA NIAZI

Beyond the root: apical periodontitis

36



Apical periodontitis (AP) has traditionally been viewed as a localised dental condition – an inflammatory response to microbial invasion of the root canal system. However, emerging longitudinal research is reshaping this perception, revealing apical periodontitis as a chronic oral disease with systemic implications – Sadia Niazi, p36

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DR SADIA NIAZI

Sadia is a senior clinical lecturer and honorary NHS consultant in endodontology at King’s College London. She leads research on oral microbiome-host interactions and systemic disease links, with multiple funded projects and international collaborations. A recipient of the British Endodontic Society’s Inspirational Lecturer Award, she also leads undergraduate endodontics at King’s.

Apical periodontitis (AP) has traditionally been viewed as a localised dental condition – an inflammatory response to microbial invasion of the root canal system.

However, emerging longitudinal research is reshaping this perception, revealing apical periodontitis as a chronic oral disease with systemic implications.

From cardiovascular risk to metabolic imbalance, the evidence is clear: apical periodontitis is more than a tooth problem – it’s a public health concern.

MICROBIAL COMPLEXITY AND CLINICAL RELEVANCE

At the core of apical periodontitis lies a diverse and resilient microbial ecosystem.

Advances in next-generation sequencing have identified key bacterial genera in failed root canal treatments, with *Enterococcus* frequently dominating.

Known for its survival in harsh environments, *Enterococcus* is strongly associated with persistent

infections. Other notable genera include *Streptococcus*, *Prevotella*, *Actinomyces*, and *Cutibacterium* – the latter often found in abscessed and refractory lesions (Bakhsh et al, 2025a; Niazi et al, 2010).

Symptomatic apical periodontitis cases tend to exhibit greater microbial diversity, suggesting a link between microbial richness and clinical presentation.

The presence of opportunistic pathogens like *Cutibacterium acnes* in both symptomatic and asymptomatic cases, which have also been regarded as nosocomial pathogens, highlights the need for rigorous cross-infection control protocols during endodontic procedures (Bakhsh et al, 2025; Niazi et al, 2010; Niazi, Vincer and Mannocci, 2016).

BACTEREMIA WITHOUT INTERVENTION

Traditionally, bacteremia has been associated with invasive dental procedures. Yet, recent studies suggest that apical periodontitis itself may act as a reservoir for bacteremia – even before any clinical intervention.



FIGURE 1: Apical periodontitis – a local infection with systemic impact

ENHANCED CPD

CPD hours: 0.5

GDC development outcome: C

Topic: Endodontics

Educational aims and objectives:

To discuss apical periodontitis and its systemic reach. This article qualifies for one hour of enhanced CPD; answer the questions on page 66.



Sadia Niazi explores apical periodontitis and its systemic reach

Beyond the root: apical periodontitis

In one longitudinal study, bacterial DNA was detected in the blood of apical periodontitis patients prior to treatment, with overlapping taxa found in both blood and root canal samples (Bakhsh et al, 2025b).

This microbial crossover points to a direct pathway from oral infection to systemic circulation. Particularly concerning is the detection of *Streptococcus* species linked to infective endocarditis, underscoring the cardiovascular risks of untreated apical periodontitis (Bakhsh et al, 2025b).

SYSTEMIC INFLAMMATION AND METABOLIC DISRUPTION

Apical periodontitis doesn't just harbour bacteria, it drives systemic inflammation. Patients with untreated apical periodontitis show elevated levels of inflammatory biomarkers such as interleukin-1β (IL-1β), high-sensitivity C-reactive protein (hs-CRP), fibroblast growth factor-23 (FGF-23), and asymmetric dimethylarginine (ADMA) – all closely associated with cardiovascular disease (CVD) risk (Bakhsh et al, 2022; Al-Abdulla et al, 2023). Moreover, apical

periodontitis appears to influence metabolic health. Even in otherwise healthy individuals, apical periodontitis has been linked to elevated HbA1c, triglycerides, LDL cholesterol, and body mass index (BMI) (Al-Abdulla et al, 2023).

Metabolomic profiling reveals disrupted glucose and lipid metabolism, insulin resistance, and tryptophan depletion – further reinforcing apical periodontitis' systemic impact.

ENDODONTIC TREATMENT: A PATH TO SYSTEMIC WELLNESS

The good news is that successful endodontic treatment can reverse many of these systemic effects. Longitudinal data show significant reductions in inflammatory biomarkers and improvements in metabolic indicators following root canal retreatment or periapical surgery (Bakhsh et al, 2022; Al-Abdulla et al, 2023). These outcomes suggest that endodontic therapy may hold prognostic value beyond oral health.


The British Endodontic Society (BES) is committed to furthering the dental health and wellbeing of the nation through pioneering, researching and supporting members to provide

the best possible standards of care to their patients. Its focus on public health and the importance of high-quality endodontic treatment is reflected in the wide range of awards and prizes the BES offers its members in recognition of their successes.

A CALL FOR INTEGRATED CARE

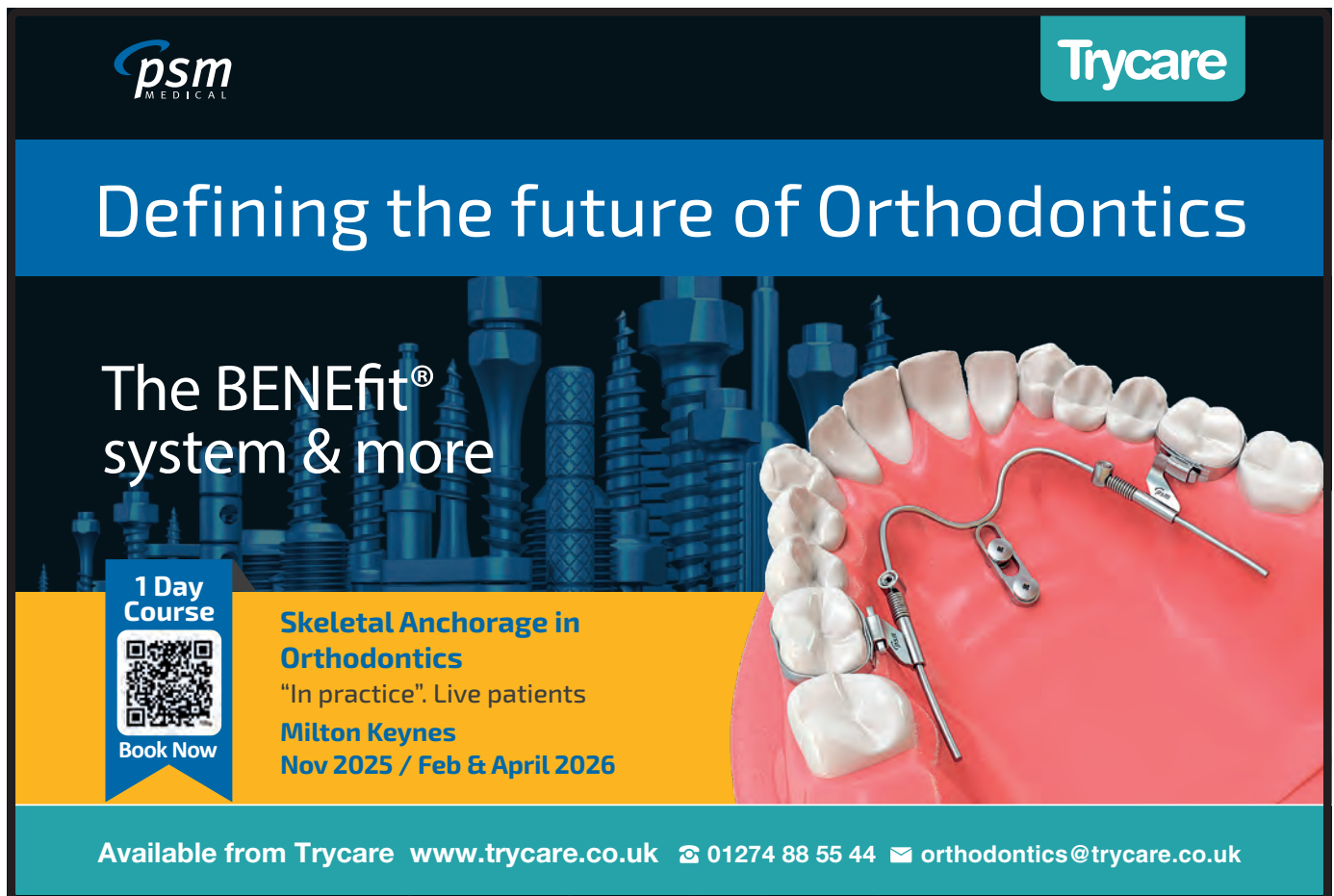
Apical periodontitis is not just a dental issue – it's a systemic one. Its association with inflammation, metabolic imbalance and non-communicable diseases (NCDs) positions apical periodontitis as a critical intersection in oral-systemic health.

Dental professionals must recognise this broader impact and advocate for timely diagnosis and management. Integrating endodontic care into preventive health strategies can improve outcomes far beyond the dental chair.

It's time to move beyond the root and embrace a more holistic approach to dental care. 

REFERENCES

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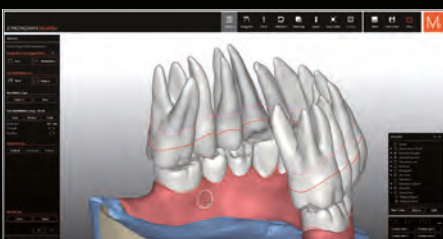


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IMPLANT DENTISTRY

USMAN RIAZ

Upper and lower full-arch immediate loading

43



Immediate placement and loading of dental implants offer many advantages including savings of time and cost, enhanced aesthetics and occlusal function, and the preservation of residual alveolar ridge. The procedure also means patients can avoid the need to wear temporary removable prostheses or undergo secondary surgical procedures – Usman Riaz, p43

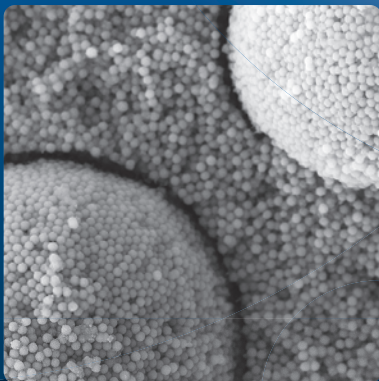
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Samples & More

**DR USMAN RIAZ**

Usman is the clinical director at Renovo Dental. He has several years' experience in implant, aesthetic and restorative dentistry. He was awarded the diploma in implant dentistry by the Royal College of Surgeons Edinburgh in 2017 and holds a postgraduate certificate in dental sedation and pain management from UCL Eastman Dental Institute. Usman is a clinical mentor to master's students at the ICE Dental Institute and Hospital in Manchester. He qualified from the University of Manchester Dental School in 2009.

ENHANCED CPD

CPD hours: one

GDC development outcome: C

Topic: Implant dentistry

Educational aims and objectives:

To present a case detailing a digitally planned upper and lower full-arch, implant-supported restoration for immediate function and aesthetics. This article qualifies for one hour of enhanced CPD; answer the questions on page 66.



Nowadays, patients are not merely concerned with the function of their prostheses; they also aspire to natural-looking aesthetics and seek treatments that will deliver fixed, durable and predictable outcomes.

Immediate placement and loading of dental implants offer many advantages including savings of time and cost, enhanced aesthetics and occlusal function, and the preservation of residual alveolar ridge.

The procedure also means patients can avoid the need to wear temporary removable prostheses or undergo secondary surgical procedures.

The following case report demonstrates the successful management of a 53-year-old lady whose dentition had been severely compromised due to periodontal disease. Her expectations were met with treatment to stabilise the periodontitis, and implant-supported prosthetic rehabilitation of the upper and lower arches to restore function and aesthetics.

The report describes the treatment of maxillary and mandibular immediate implant placement and delivery of immediately loaded implant-supported provisional complete fixed dental prostheses, carried out with a full digital workflow.

The treatment was made possible with Bredent Medical Bluesky implants, Sky Pro Guide surgical kit, the Sky Fast & Fixed same-day-teeth system and the Sky Pro Guide plan to achieve the desired prosthetically driven implant placement. The case was supported by colleagues at Impact Dental and Implant Laboratory in Bolton.

CASE ASSESSMENT

A patient with advanced periodontal disease was

referred to Renovo Dental to explore options to address her oral health concerns. For as long as she could remember, she had been embarrassed by the appearance of her mouth and was seeking an



FIGURES 1 to 3: The patient had significant interdental bone loss

Usman Riaz presents a digitally planned full-arch immediate implant case for a referred patient suffering from advanced periodontal disease with significant aesthetic impairment

Upper and lower full-arch immediate loading



affordable long-term, predictable, fixed option with improved aesthetics.

Her ongoing struggles with loose teeth, highly visible gaps and the resulting food packing had significantly hindered her ability to eat and smile confidently. She expressed her wish for replacement of her failing dentition with fixed prostheses and was emphatic about her inability to tolerate traditional, removable complete dentures during any phase of the treatment.

The intraoral examination revealed significant interdental bone loss in both the upper and lower jaws (Figures 1 to 3). Radiographic assessment showed moderate bone resorption on the anterior teeth (Figure 4). Our assessment also noted the patient's moderate chronic generalised periodontitis (Figures 5 to 7), a canted occlusal plane, occlusion disharmony, extrusion of the remaining mandibular anterior teeth and recurrent dental caries. Endodontic retreatment was also needed on several teeth.

TREATMENT PLANNING

Treatment options were discussed with the patient, who consented to a plan including maxillary and mandibular implant-supported complete fixed dental prostheses.

The patient's remaining teeth would be extracted, and simultaneous maxillary and mandibular immediate implant placement would be performed with Bredent Medical Bluesky bone level implants, assisted by static computer-aided implant surgery (s-CAIS).

Immediately loaded implant-supported provisional complete fixed dental prostheses would be provided, enabling the patient to leave the surgery with functional and aesthetic temporary teeth during the healing period.

The chosen treatment plan met the patient's expectations for restoration of the pink aesthetics and was felt to be the optimum approach to mitigate further bone loss.

The agreed plan was as follows:

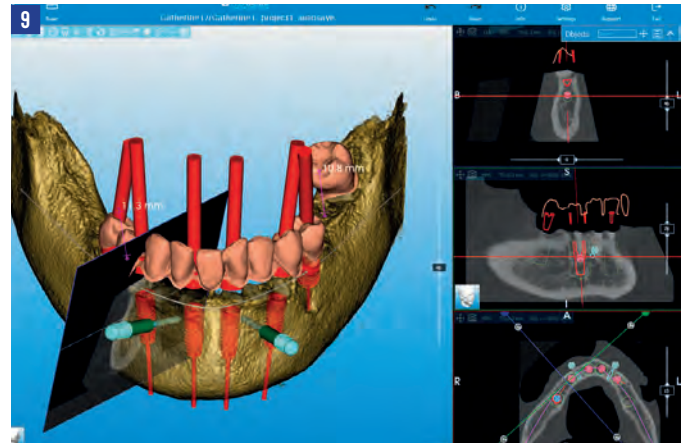
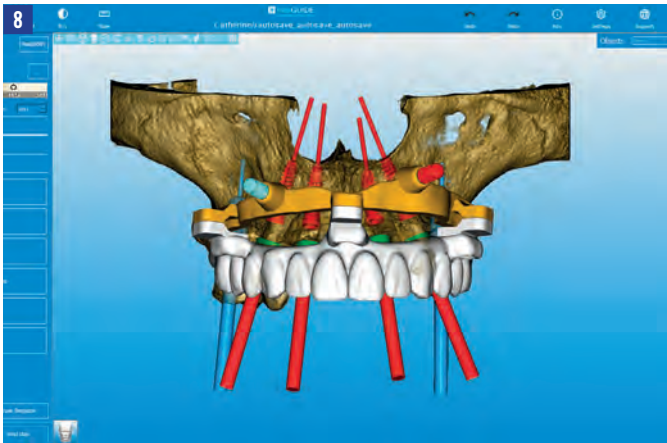
1. Full-mouth scaling and root planing to manage the periodontal disease
2. Strict oral hygiene instructions for the patient to carry out at home for a 12-week period
3. Intraoral scanning followed by extraction of remaining maxillary and mandibular teeth
4. Prosthetic and aesthetic analysis using software including the Sky Pro Guide plan
5. Preparation of immediate maxillary and mandibular full-arch prostheses
6. Preparation of implant surgical guide
7. Immediate implant placement of 12 Bredent Medical Bluesky implants with minimal bone augmentation in the UR4 buccal site, assisted by the Bredent Medical Sky Pro Guide surgical kit and Sky Fast & Fixed same-day teeth system



FIGURE 4: Radiographic examination showed moderate bone resorption



FIGURES 5 to 7: The patient had generalised moderate periodontitis



FIGURES 8 and 9: The planning software helped ensure ideal implant position and angulation for immediate loading



FIGURES 10 to 12: The milled PMMA temporary bridges were digitally planned for chairside delivery

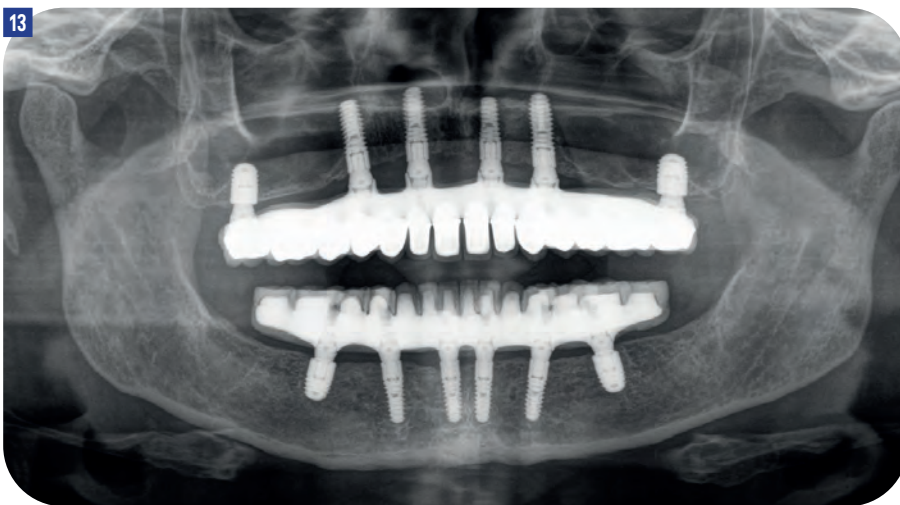


FIGURE 13: A postoperative OPG scan revealed good implant integration

8. Immediate loading of implants with temporary screw-retained polymethyl methacrylate (PMMA) milled bridges on Bredent Medical Uni.cone abutments
9. Fitting of final monolithic zirconia, screw-retained full-arch restorations on titanium frameworks, with definitive prostheses created from Luxor Z True Nature zirconia teeth
10. Continued periodontal supportive therapy every three to four months.

IMPLANT PLANNING AND DIGITAL WORKFLOW

During the planning phase, a virtual wax-up was created to optimise load distribution and aesthetics for the prosthodontically driven implant placement. The Sky Fast & Fixed protocol, supported by Sky Pro Guide implant planning software, ensured ideal implant position and angulation for immediate loading (Figures 8 and 9).

On the day of surgery, the patient's failing upper and lower arch teeth were extracted

and Bredent Medical Helbo antimicrobial photodynamic therapy (aPDT) was used to disinfect the extraction sockets, with interaction of a photosensitive dye and low-energy exposure from the Theralite laser.

Twelve implants were then placed with the Sky Pro Guide surgical kit.

Two 5.5mm by 8mm implants were placed in the UR7 and UL7, three 4mm by 14mm implants were placed in the UR4, UR2 and UL4, and a 4mm by 12mm implant was placed in the UL2.

In the lower arch, four 4mm by 12mm implants were placed in the LR4, LR2, LL2 and LL4, with 5.5mm by 8mm implants inserted into the LR6 and LL6 regions.

Bone contouring, or osteotomy, in the lower jaw was carried out prior to implant placement although there was no need to remove bone from the maxilla.

The milled PMMA temporary bridges were digitally planned for chairside delivery (Figures 10 to 12).

The implant pick-up technique was employed with Qu-resin in a tension-free procedure.

OSSEointegration AND DEFINITIVE RESTORATION

Three months after implant placement, osseointegration was achieved in all the implant sites and there was sufficient buccal





FIGURES 14 to 16: Fitting of the definitive zirconia screw-retained restorations took place 20 weeks after surgery



FIGURES 17 and 18: Before and after comparison – highly aesthetic and functional fixed prostheses were delivered by an immediate implant-supported digitally planned rehabilitation

The aesthetics were completed with zirconia and pink ceramics

keratinised soft tissue seal. This plays a crucial role in ensuring the long-term stability of the soft tissues and facilitating proper oral hygiene maintenance.

The postoperative OPG scan revealed good implant integration (Figure 13), confirming the successful implant placement position and angle for the restoratively driven approach.

The patient returned 18 weeks after surgery for capture of the data for the final prostheses. Fitting of the definitive zirconia screw-retained restorations took place two weeks later (Figures 14 to 16). Since advanced vertical bone defects require prosthetic gingiva, the aesthetics were completed with zirconia and pink ceramics.

The patient continues to be monitored and supported with ongoing therapy to manage her periodontal condition.

AESTHETIC IMPLANT-SUPPORTED RESTORATION

The challenges presented by significant functional and aesthetic impairments in severely compromised dentition can be overcome by rigorous periodontal disease management, careful selection of products and equipment, and adoption of appropriate implant protocols as part of a multidisciplinary approach.

Highly aesthetic and functional fixed prostheses were delivered for this very appreciative lady with an immediate, implant-supported, digitally planned rehabilitation (Figures 17 and 18).

The combination of the Bredent Medical Bluesky implant design facilitating high primary stability, the Sky Fast & Fixed same-day-teeth system and the Sky Pro Guide plan delivered a very predictable and efficient workflow, benefitting the patient, implant surgeon and referring dentist alike. 

CONTACT

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PRODUCTS USED

Bluesky, Sky Pro Guide, Sky Fast & Fixed, Uni.cone, Helbo, Qu-resin Bredent Medical Luxor Z True Nature Dental Concept Systems





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In this course, participants cover the five preparation phases, apply theory to working models, and use Zirkonzahn's Detection Eye intraoral scanner. Special attention will be also given to the cementation technique.

The course will be held on 30-31 October 2025 by a qualified dentist and allows a maximum of six participants.

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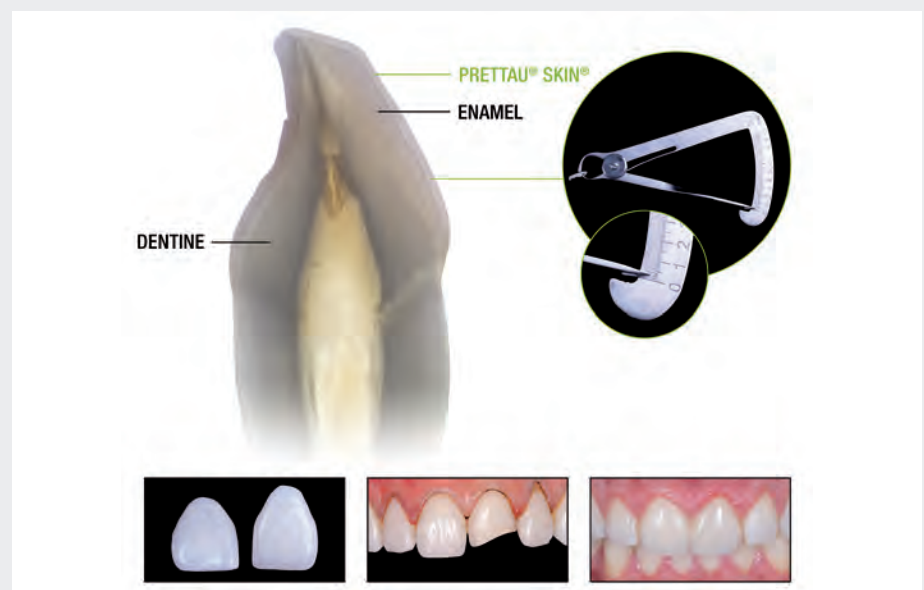
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ORALHEALTH

MIKE LEWIS

Mouth cancer detection

52



The annual incidence of head and neck cancer in the UK reached a record high in 2024, with more than 10,000 cases being diagnosed. In addition, the number of patients found to have mouth cancer has more than doubled (increased by 113%) in the last 20 years. These are extremely worrying statistics since, despite significant developments in the treatment of mouth cancer, the five-year survival from this potentially devastating condition remains poor at approximately 55% - Mike Lewis, p52

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PROFESSOR MIKE LEWIS
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 Mike is emeritus Professor of oral medicine and a Mouth Cancer Foundation ambassador.

The annual incidence of head and neck cancer in the United Kingdom reached a record high in 2024, with more than 10,000 cases being diagnosed. In addition, the number of patients found to have mouth cancer has more than doubled (increased by 113%) in the last 20 years.

These are extremely worrying statistics since, despite significant developments in the treatment of mouth cancer, the five-year survival from this potentially devastating condition remains poor at approximately 55%.

The single most important factor that can improve a patient’s outcome is detection of the tumour while small, specifically 2cm or less in diameter with no regional node involvement or distant metastasis (stage one).

The five-year survival for patients diagnosed at stage one (Figures 1 and 2) is 85% compared to only 10% for those detected at stage four when the tumour has enlarged to greater than 4cm in diameter with regional node involvement and possible distant metastasis (Figures 3 and 4).

It is important to appreciate that speed of growth of mouth cancer is highly variable between individual patients. Some tumours may increase in size slowly over many months (Figure 5) while others can develop rapidly within a few weeks (Figures 6a and 6b).

On this basis, the terminology ‘early diagnosis’ is potentially misleading since it is not actually the time that the cancer has been present but the size and spread to the regional lymph nodes when the tumour is first detected that is key to patient survival.

Size matters – the smaller the tumour, the less complex the treatment and the better the outcome.

ORAL SQUAMOUS CELL CARCINOMA

It is helpful to recognise that oral squamous cell carcinoma (SCC) essentially represents epithelial

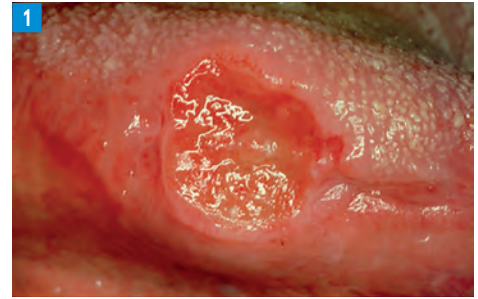


FIGURE 1: Ulcer on the lateral margin of the tongue (stage one SCC)



FIGURE 2: Raised swelling on the lateral margin of the tongue (stage one SCC)

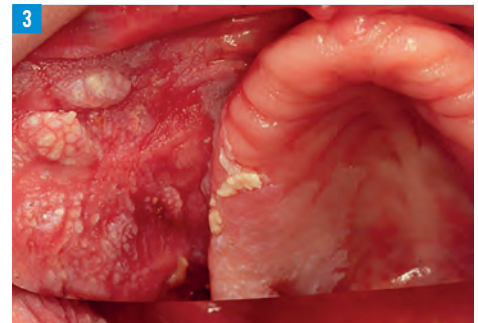


FIGURE 3: Extensive proliferative mucosal change in the right buccal mucosa (stage four SCC)

ENHANCED CPD

CPD hours: one

GDC development outcome: C

Topic: Oral Health

Educational aims and objectives:

To discuss oral cancer and the importance of early detection. This article qualifies for one hour of enhanced CPD; answer the questions on page 66.



Mike Lewis explains why the need for ‘early detection’ of mouth cancer has never been so important

Mouth cancer detection

cell replication within the lining of the mouth that is 'out of control' and, as such, it is a surface event that should be visible on clinical examination.

This feature contrasts with many other malignant tumours that are not 'visible', such as ovarian cancer or pancreatic cancer.

It is not unreasonable to expect a dental care professional to be able to detect a surface mucosal abnormality that is 2cm in diameter since this is approximately the same size of a fingernail, which would be obvious in the mouth.

CLINICAL PRESENTATION

A classical appearance of mouth cancer is a solitary swelling with central ulceration on the lateral margin of the tongue (Figure 7) or floor of mouth (Figure 8).

Palpation of the affected tissues margin will reveal a firmness, often described as induration. Unfortunately, however, mouth cancer has no specific characteristic (pathognomonic) presenting feature, and a wide variety of tissue changes can be involved.

A combined red and white appearance, so-called 'speckled patch' or erythroleukoplakia, is highly suggestive of the presence of carcinoma (Figures 9 to 11).

EXAMINATION OF THE PATIENT

A range of educational videos showing how to carry out a soft tissue examination of the neck and mouth are freely available on the internet via providers, such as Youtube or Google video.

Extraoral examination

The face and surrounding tissues should be examined visually for any asymmetry or localised swelling. The soft tissues of the neck should then be palpated on both sides using the tips of the fingers to detect any abnormal firmness or enlargement of the lymph nodes.

The patient's neck should be flexed to allow the examination to start in the submental region moving back to the submandibular region, then down the jugular chain to the supra-clavicular fossa.

Intraoral examination

There is no correct procedure for examining the oral soft tissues so long as that, at the completion of the examination, the entire mouth and the oropharynx, including the tonsils, has been assessed.

Good lighting is obviously essential.

Any mucosal abnormality detected visually should be palpated to determine consistency (Figure 12).

As a generalisation, firmness reflects the presence of a benign or malignant neoplasm



FIGURE 4: Speckled epithelial swelling in the left third molar region (stage four SCC)



FIGURE 5: SCC that had been progressively enlarging over 18 months prior to referral



FIGURE 6A: Mucosal erosion with no epithelial dysplasia that had been reviewed for four years



FIGURE 6B: Same patient six weeks later with extensive SCC and spread to lymph nodes in the neck



FIGURE 7: SCC as painless ulcerated firm swelling on lateral margin of tongue



FIGURE 8: SCC as ulcerated firm swelling in the floor of mouth

while softness to palpation represents a non-neoplastic inflammatory condition.

Finally, mouth cancer is often painless until well advanced while, in contrast, benign inflammatory conditions are usually painful from the outset.

DETECTION OF MOUTH CANCER

As mentioned above, mouth cancer can present with a variety of clinical changes with no single pathognomonic feature.

Reassuringly, it has been demonstrated that dentists, dental hygienists and dental therapists are able to confidently recognise mucosal abnormalities and have a high degree

of accuracy for the clinical detection of mouth cancer or potentially malignant oral disease. However, it is generally accepted that even while the most experienced clinician may strongly suspect the presence of squamous cell carcinoma, there can never be 100% certainty of the diagnosis until this is confirmed by histopathological examination of a biopsy.

A range of adjunctive chairside clinical aids have been developed commercially to increase the likelihood of detection of mouth cancer in the clinic. The technologies involved have included the use of nuclear dyes, tissue reflectance light visualisation, fluorescence imaging, exfoliative cytology and salivary diagnostics.



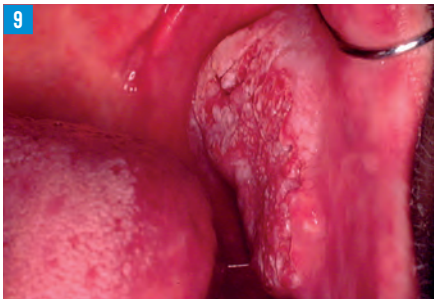


FIGURE 9: SCC as firm swelling left buccal mucosa



FIGURE 10: SCC as erythroleukoplakia in the left soft palate



FIGURE 11: SCC as erythroleukoplakia in the floor of the mouth



FIGURE 12: Bimanual palpation to detect firmness of the soft tissues

The primary aim of such diagnostic adjuncts is to improve the ‘early’ detection of mouth cancer and increase the proportion of tumours diagnosed at stage one or stage two.

While their clinical use certainly raises awareness of mouth cancer in the patient, the subjective interpretation of the tests at the chairside can make their interpretation difficult. Therefore, at the present time, the detection of mouth cancer remains dependent on the outcome of comprehensive visual examination, palpation of the soft tissues and biopsy.

REFERRAL

A patient found to have a suspicious abnormality during a soft tissue examination should be referred for specialist assessment rapidly. The terminology ‘urgent suspected cancer’ has been used in this situation with an expectation that the patient will have an initial consultation within 14 days (two-week wait) or 10 working days (10-day rule).

The specific suspected cancer referral guidelines are slightly different in England, Wales, Northern Ireland and Scotland. However, the following clinical features are highly suggestive of cancer and need to be considered in all patients regardless of location:

- Unexplained ulceration in the oral cavity lasting more than three weeks
- A persistent and unexplained lump in the neck

- A lump on the lip or in the oral cavity consistent with mouth cancer
- A red or red and white patch in the oral cavity consistent with erythroplakia or erythroleukoplakia
- A persistent hoarse voice or pain on swallowing.

The logistics for the referral pathway from primary care to specialist secondary are variable depending on geographical location. Historically, referrals have been made in the form of a written letter with an inevitable risk of delay within the postal system.

Electronic record management and internet-based NHS referral systems within managed clinical networks are being introduced and these have a range of advantages, including an assurance of rapid and safe delivery of the urgent referral request. Individual dental practitioners must be aware of the processes involved in their local urgent cancer referral pathway.

COMMUNICATION WITH THE PATIENT

What should the patient be told when a soft tissue examination of the head and neck reveals an abnormality, and it is felt that an urgent referral is indicated? It is essential to reassure the patient that soft tissue changes are seen frequently, and the vast majority are benign, although it is best to get them double-checked by a specialist.

Other helpful information to provide includes the name of the hospital to which the referral is being made and the fact that they should expect an appointment relatively quickly. Obviously, this communication has to be done sensitively, and the amount of information given decided on an individual patient basis.

Interestingly, it has been reported that some dentists have a reluctance to discuss mouth cancer with their patients due to a lack of confidence to answer the patient’s potential questions.

There would appear to be a need for specific guidance for the dental team on how to raise the subject of mouth cancer during routine examination and how to communicate any issues without causing unnecessary anxiety.

This aspect of mouth cancer could be a subject for future undergraduate and postgraduate education.

CONCLUSION

Unfortunately, the incidence of mouth cancer is continuing to increase on a yearly basis, with most patients being initially diagnosed at an advanced stage of the disease resulting in the need for complex treatment with poor outcome.

Detection of mouth cancer while the tumour is small is the most important factor that will increase the survival of the patient.

All dental professionals should feel comfortable about discussing mouth cancer with their patients and not only routinely undertake a soft tissue examination but also encourage individuals to perform self-examination on a regular basis.

Early diagnosis when the cancer is small is increasingly essential to save lives.

FURTHER INFORMATION

- cks.nice.org.uk
- mouthcancerfoundation.org
- cancerresearchuk.org



THREE CLINICAL SPOTLIGHTS, ONE LIVE DEMONSTRATION, UNLIMITED INSPIRATION AT LONDON'S GBT SUMMIT

ABOUT THE SPEAKERS

Dr Megan Rossi is an internationally renowned researcher, clinician and bestselling author with a PhD in gut health, as well as founder of The Gut Health Doctor.

Dr Victoria Sampson is an award-winning dentist, researcher and international speaker whose published work has advanced understanding of the oral microbiome and systemic health.

Professor Luigi Nibali is Professor of Periodontology at King's College London and a leading authority on periodontal disease and regenerative therapies.

Dr Devan Raindi is a specialist periodontist and educator recognised for his evidence-led, patient-centred approach to clinical practice.

Anna Middleton is a dental hygienist, international speaker and founder of London Hygienist, widely known as a leading advocate for Guided Biofilm Therapy.

LIVE Q&A WITH DR MEGAN ROSSI AND DR VICTORIA SAMPSON

Delegates will have the chance to join Dr Megan Rossi and Dr Victoria Sampson for an exclusive Q&A session that connects the latest microbiome science with everyday clinical practice. From gut-oral links to practical applications in the dental chair, this is a unique opportunity to put your questions directly to two leading voices and gain practical insights that can shape the future of prevention.

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THE MICROBIOME, BIOFILM AND BEYOND

In a profession where innovation and prevention go hand in hand, few events offer the depth, energy and international expertise of London's GBT Summit 2025. Taking place at the Royal College of Physicians on 31 October, this gathering is a call to action for dental professionals ready to deliver truly patient-centred care.

LINKING GUT AND ORAL HEALTH

Keynote speaker Dr Megan Rossi brings a new dimension to the Summit by exploring the connections between gut, microbiome and oral health. Drawing on cutting-edge research, she will challenge prevailing nutrition myths, unveil the real science behind probiotics and the microbiome, and translate the latest findings into practical, evidence-based advice. Delegates will leave equipped with strategies such as the 'Super Six' and the 30-plant-a-week challenge, offering simple but powerful tools to guide patients towards improved oral and systemic wellbeing. Her session promises to be inspiring, accessible and grounded in science, and will be an essential highlight for clinicians eager to look beyond the mouth toward holistic health.

THE POWER OF THE MICROBIOME

Dr Victoria Sampson will continue exploring one of the most talked-about areas in oral-systemic health: the oral microbiome. Her session will explore how the delicate balance of microbes in the mouth influences both oral diseases and wider health outcomes. She will break down the science in a clear and practical way, showing how dental professionals can assess, support and positively influence the oral microbiome through tailored hygiene protocols and patient education.

Delegates will learn why microbial balance matters for systemic disease prevention and how the future of personalised care rests on understanding the mouth's microbiological ecosystem.

INNOVATION IN PERIODONTICS

Professor Luigi Nibali will present on

the Minimally Invasive Non-Surgical Technique (MINST), the latest evolution of periodontal therapy. MINST builds on non-surgical treatment, using advanced healing principles and state-of-the-art instruments for a less invasive, more personalised approach. Evidence shows it can achieve significant clinical and radiographic improvements even in advanced cases, and delegates will gain a clear revision of current protocols alongside guidance on the instruments and techniques that define modern periodontal care.

Following the lecture, Professor Nibali will be joined by Dr Devan Raindi for a Q&A session that will take the conversation deeper. Together they will address key questions on periodontal health, inflammation and the future of gum disease management, giving delegates the chance to engage directly with two leading experts and return to practice with evidence-based insights that can be applied immediately.

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ORTHODONTICS

SHIVANI PATEL

Complex orthodontic treatment: restoring confidence

58



The patient in the following case report had orthodontic treatment as a child, which involved the extraction of one lower incisor tooth and no further treatment. The hope was through 'driftodontics' the teeth would improve. He was very self-conscious of his smile, which led to him seeking minimal dental care and hence further loss of teeth - Shivani Patel, p58

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SHIVANI PATEL
Shivani is a specialist orthodontist at Elleven Dental in London.

Self-esteem and dental health are closely linked – how someone feels about their teeth can significantly affect their confidence, self-image, and social interactions. This can affect dating, friendships, work opportunities, and more.

The patient in the following case report had orthodontic treatment as a child, which involved the extraction of one lower incisor tooth and no further treatment. The hope was through ‘driftodontics’ the teeth would improve.

He was very self-conscious of his smile, which led to him seeking minimal dental care and hence further loss of teeth.

After saving up some money, he plucked up the courage to revisit orthodontic care as an adult.

CASE STUDY

The patient had a very strong gag reflex and he didn’t value his dental appearance, which resulted in him being a very poor dental attender. His oral hygiene was initially very poor but otherwise he was fit and healthy.

His main complaint was that he didn’t like his smile and, for that reason, he worked night shifts in the transport industry.

He presented with:

- Moderate skeletal II
- Reduced face height
- Increased overjet (13mm)
- Increased and severe overbite
- Traumatic overbite
- Proclined and spaced upper labial segment
- Spaced lower dentition

ENHANCED CPD

CPD hours: one

GDC development outcome: C

Topic: Orthodontics

Educational aims and objectives:

To discuss complex orthodontic treatment and orthognathic surgery. This article qualifies for one hour of enhanced CPD; answer the questions on page 66.



FIGURES 1 and 2: Initial extraoral photographs

Shivani Patel presents a complex orthodontic case that involved orthognathic surgery to improve a patient’s smile and self-esteem

Complex orthodontic treatment: restoring confidence



FIGURES 3A to 4B: Initial intraoral photographs



FIGURE 5: Initial lateral ceph

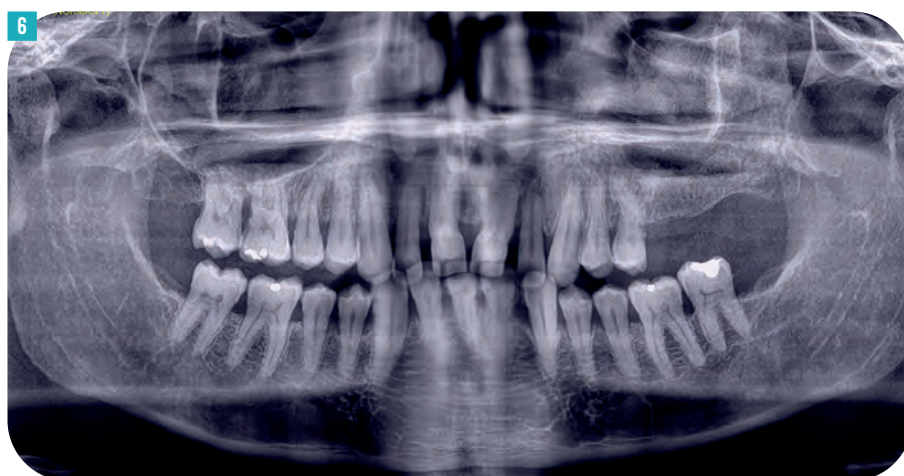


FIGURE 6: Initial OPG

- Missing posterior teeth
 - Previously extracted lower incisor tooth
 - Restored dentition
 - Active periodontal disease, gingival recession, bleeding on probing and triangular spaces
 - Poor oral hygiene
 - A large tongue that sat in an adapted anterior position
 - Severe gag reflex.
- Special investigations included:
- Initial extraoral and intraoral photographs (Figures 1 to 4)
 - Preoperative radiographs (Figures 5 and 6):
 - Dental panoramic tomograph
 - Lateral cephalogram
 - Long cone periapical radiographs by the periodontist
 - Scans for study models.
- There had been significant amounts of vertical and horizontal bone loss.

TREATMENT PLANNING

The following treatment options were proposed and discussed with the patient:

- Do nothing – accept the malocclusion but the periodontal health would need addressing regardless
- Orthodontics alone – limited outcome (12 months treatment time). To be taken only once the periodontal condition has been stabilised. This option would only align the teeth and close the spaces. The traumatic overbite would remain, compromising the long-term health. The aesthetics and function of the teeth would marginally be improved. However, the risk of relapse would be high, as the upper incisors would not be under the control of the lower lip



FIGURE 7: Bond up, extraoral



FIGURES 8A to 9B: Initial intraoral photographs

FIGURE 10: Pre-surgery, extraoral

- Comprehensive multidisciplinary care – the optimum option. At Elleven Dental, we always like to look at every patient through the triangular lens of health, function and aesthetics:
 - Health – restoring the basic health, education and reinforcing prevention:
 - A thorough general dental check-up
 - A thorough periodontal assessment and treatment
 - Introduction to an electric toothbrush and effective use
 - Hygiene regime
 - Long-term periodontal care
 - Restoration of function – only once the periodontal health has been stabilised. Orthodontics would involve fixed braces combined with orthognathic surgery (mandibular advancement). Approximate treatment time is 18 to 20 months)
 - Aesthetics and function – consider tooth whitening and restoration of the posterior missing teeth
 - Retention and maintenance – lifelong retention involving a combination of fixed and removable retainers. Periodontal regime.

PERIODONTAL STABILISATION

Without periodontal stabilisation, we cannot progress with the orthodontics.

Our in-house periodontist ensured that the periodontal support system was disease free and stable, meaning it would be able to withstand



FIGURES 11A to 12B: Initial intraoral photographs

the forces of fixed braces for a prolonged period of time.

It was also imperative that the patient understood their involvement in keeping with the periodontal regime of regular hygiene etc.

The arches are spaced so retraction on space closure would mean minimal proclination and movement of the roots out of the alveolar bone.

At Elleven Dental, the periodontist will review

the patient four months after bond up. In addition, patients have hygiene sessions every four months followed by regular six-monthly periodontal assessments, depending on patient diligence with the upkeep of periodontal care.

PRE-SURGERY ORTHODONTICS (12 MONTHS)

The ideal outcome of orthognathic surgery is coupled with the placement of fixed braces.



FIGURE 13: Pre-surgery OPG



FIGURE 14: Four-weeks post-surgery, extraoral



FIGURES 15A to 15C: Four-weeks post-surgery, intraoral



FIGURE 16: Post-surgery ceph



FIGURE 17: Debond, extraoral

There are clinicians that are (on the patient's request) placing lingual braces and using clear aligners for this complex treatment. However, after almost two decades of experience, the surgical team and I feel that buccally placed fixed braces give the best overall control of the teeth and finishing. What's more, it allows the patients to maintain their oral hygiene well, which was imperative for this periodontally challenged

patient. Figures 7 to 9 show the bond up.

- Pre-surgical movements involved:
- Controlled light forces
 - Alignment of the teeth
 - Close the spaces of the upper arch (minimal reduction of the overjet)
 - Maintain the increased curve of Spee
 - Minimal expansion
 - Coordination of the arches followed by a

mandibular advancement. Final treatment time was 17 months.

Pre-surgery preparation

Once I have worked up to a 19x25 stainless steel arch wire, I request for snap models to take a look at the arch coordination and make any adjustments in arch width and interferences to allow for the surgeons to have as many points of





FIGURES 18A to 19B: Debond, intraoral



FIGURES 22A to 23B: Debond, intraoral

interdigitation at the time of surgery.

A day before the surgery, the final working arch wire 19x25 SS – or ideally 21x25 SS – is fully ligated with quick ligs and crimpable hooks placed to assist the surgeons.

- I always advise and give my patients:
- A small, soft bristled baby toothbrush
- Large bore straw
- Non-staining antibacterial mouth wash

- Cold packs for postoperative swelling
 - Hospital bag packing list
 - Ideal post-surgical foods/soups and smoothie recipes.
- Pre-surgical photographs and radiograph were taken (Figures 10 to 13).

ORTHOGNATHIC SURGERY

The patient had a bilateral sagittal split



FIGURES 20 and 21: Six-month review, extraoral

osteotomy to advance the mandible.

All our patients have orthognathic surgery under general anaesthesia and are required to stay one night. They are then requested to take two weeks off work to recover.

POST-SURGICAL FINISHING (FOUR TO SIX MONTHS)

I like to review my patients five days after

surgery. At this appointment, I take note of:

- Postoperative swelling, numbness, pain
- Eating
- Sleeping patterns
- Signs of infection
- General emotional wellbeing
- Home support.

I also reinforce toothbrushing habits, mouth washes, and the use of hot salt water rinses at this time.

The appliances are not adjusted, however I introduce the patient to very early settling elastics so that we can start to interdigitate the teeth and achieve the class I occlusion we are best aiming for. During the first six weeks, I see the patient weekly. At these appointments I:

- Take extraoral and intraoral photos
- Make a note of the signs and symptoms etc.

Throughout the first three weeks, I place the elastics as the patient generally struggles to access the hooks placed as far back as the 6s and 7s, due to the extent of the swelling. After the third week, they are typically back to an almost normal life routine and feeling more confident to change their elastics twice a day. Figures 14 to 15 show the photographs taken four weeks after surgery. The four-week the post-surgery radiograph can be seen in Figure 16. After six weeks, I will remove the surgical wires, and following a hygiene session, I place softer settling wires – like a braided stainless steel or even a round stainless steel – in the lower arch to allow for settling.

DEBOND

The patient was always motivated with his treatment and was completely invested in the plan. His outcome was achieved in the desirable time frame of 17 months (Figures 17 to 19). We provided him with dual retention of upper and lower fixed bonded retainers and full-time vacuum formed retainers for 12 months, to be reduced to every night for an indefinite period of time. The patient still needs restorative work to be carried out, including:

- Long-term periodontal maintenance
- Long-term orthodontic retention
- Tooth whitening
- Posterior implants
- Bondings to replace tooth surface lost due to the severe overbite
- Filler to reduce the triangular gaps (if desired).

At Elleven Dental, we prefer to wait three to six months before embarking on any complex treatment to allow for settling (including settling of periodontal health) to occur. In surgical cases, this not only allows patients to recover from the surgical experience they have had but also offers a financial break.

In the present case, the patient would need surgical implants to be placed and would need to be psychologically ready for this next phase. Figures 20 to 23 show the photographs taken at the six-month review.

SUMMARY

Complex orthodontic treatment, including orthognathic surgery, is a major procedure and certainly not for everyone. It’s often presented as a solution for certain dental, facial or aesthetic concerns, but it comes with significant physical, emotional and financial considerations.

Orthodontics and orthognathic surgery are easily accessible in private practice. The time frames compared with the NHS are practical and achievable as we don’t have the constraints of long waiting lists, but there are financial implications. At Elleven Dental, we have found that patients are desperate to make a difference in their lives and we will go that extra mile to help them achieve it. For people who have been teased, overlooked or who felt ‘invisible’ due to jaw issues, the change can feel like unlocking a new version of themselves. [C](#)

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**GENERAL DENTISTRY
CD/OCTOBER/STIMSON/PAGE 13**

- 1. According to the article, what is considered the primary influence on the final position of the teeth?**
 - a. Tooth eruption patterns
 - b. Bony growth limited and controlled by oral muscles
 - c. Genetic determination of arch shape
 - d. Early loss of deciduous teeth
- 2. Which of the following is listed as the most common misconception regarding the aetiology of malocclusion?**
 - a. Bottle feeding and pacifier use
 - b. Birth-related cranial compression
 - c. Dysfunctional tongue posture
 - d. Genetics being seen as the sole cause
- 3. Which of the following is identified as a possible consequence of malocclusion?**
 - a. Periodontal bone loss in early adulthood
 - b. Airway and breathing issues leading to obstructive sleep apnoea
 - c. Increased susceptibility to dental caries
 - d. Delayed eruption of permanent molars
- 4. What is the stated general rule regarding extractions in the management of occlusal crowding and intermaxillary imbalance?**
 - a. Extractions should be considered first to relieve crowding
 - b. Extractions are acceptable in approximately half of cases
 - c. Extractions are a last resort when orthopaedic treatment has not succeeded
 - d. Extractions should always be avoided, regardless of skeletal relationships

**AESTHETIC DENTISTRY
CD/OCTOBER/MALIK/PAGE 19**

- 1. What was the primary clinical reason that immediate conventional implant placement was unfeasible in this case?**
 - a. Insufficient apical bone height in the posterior maxilla
 - b. Complete absence of buccal bone to the apex of UL1 and UL2
 - c. Proximity of the maxillary sinus to the defect site
 - d. Vertical fracture of the UL1 root
- 2. Which technique was first employed to establish an adequate soft tissue foundation for later grafting?**
 - a. Free gingival graft from the palate
 - b. Lateral pedicle flap harvested from UL3 region
 - c. Connective tissue graft from the tuberosity
 - d. Rotational palatal flap
- 3. What was the rationale for using a composite graft composed of autogenous bone chips and an allograft cortical plate?**
 - a. To provide a scaffold only for soft tissue ingrowth
 - b. To allow faster implant placement by avoiding healing time
 - c. To combine osteoinductive and osteoconductive properties for robust bone regeneration
 - d. To minimise surgical stages by combining soft and hard tissue grafting simultaneously

- 4. In the final prosthetic phase, the patient's natural tooth crowns were...**
 - a. Reattached to the implant abutment with adhesive resin cement
 - b. Used as surgical guides during implant placement
 - c. Preserved and provided to the laboratory to match shade and surface features
 - d. Ground into grafting particles for ridge preservation

**DIGITAL DENTISTRY
CD/OCTOBER/PATEL/PAGE 28**

- 1. In case one, what was the key factor that led the previously reluctant patient to accept treatment?**
 - a. Referral to a hygienist for full-mouth debridement
 - b. Comparative AI-generated visuals showing lesion progression
 - c. Elective replacement of amalgam restorations
 - d. Detailed verbal explanation of caries progression
- 2. Which site in case two prompted a change from monitoring to early intervention after AI analysis?**
 - a. Upper right first premolar (UR4)
 - b. Lower right first molar (LR6)
 - c. Upper right first molar (UR6)
 - d. Lower left second molar (LL7)
- 3. What was one limitation of the AI system identified in the discussion section?**
 - a. Inability to detect enamel-only lesions
 - b. Struggling with poor quality or overlapping radiographs
 - c. Over-diagnosing caries in anterior teeth
 - d. Replacing clinician judgment in treatment planning
- 4. What was a reported benefit of using AI during appointments beyond diagnostic support?**
 - a. Reduced reliance on intraoral photographs
 - b. Decreased need for local anaesthesia
 - c. Saving clinical time that could be used to build rapport and educate patients
 - d. Allowing hygienists to work independently of dentist input

**ENDODONTICS
CD/OCTOBER/IAZI/PAGE 36**

- 1. Which bacterial genus is most frequently associated with failed root canal treatments and persistent infections in apical periodontitis?**
 - a. Streptococcus
 - b. Prevotella
 - c. Enterococcus
 - d. Actinomyces
- 2. What recent finding challenges the traditional view that bacteremia only occurs after invasive dental procedures?**
 - a. Apical periodontitis itself can act as a reservoir for bacteremia before treatment
 - b. Bacteremia is only seen after surgical endodontic procedures
 - c. Apical periodontitis prevents bacteremia until intervention occurs
 - d. Antibiotic prophylaxis eliminates bacteremia in all cases

3. Which inflammatory biomarkers associated with cardiovascular disease risk are elevated in untreated apical periodontitis?

- a. IL-1 β , hs-CRP, FGF-23, ADMA
- b. TNF- α , IL-6, ferritin, albumin
- c. Cortisol, HbA1c, LDL cholesterol, BMI
- d. Creatinine, uric acid, HDL cholesterol, vitamin D

4. According to longitudinal data, what systemic changes have been observed following successful endodontic treatment?

- a. No measurable systemic impact
- b. Reductions in inflammatory biomarkers and improvements in metabolic indicators
- c. Increases in HbA1c and triglycerides
- d. Higher risk of bacteremia from procedural intervention

IMPLANT DENTISTRY CD/OCTOBER/RIAZ/PAGE 43

1. What was one of the main advantages of immediate implant placement and loading for patients described in this article?

- a. It reduces the need for periodontal supportive therapy
- b. It avoids the use of temporary removable prostheses
- c. It eliminates the risk of bone resorption entirely
- d. It prevents the need for intraoral scanning

2. What periodontal condition was diagnosed in the 53-year-old patient prior to implant treatment?

- a. Aggressive periodontitis
- b. Necrotising ulcerative gingivitis
- c. Moderate chronic generalised periodontitis
- d. Peri-implant mucositis

3. Why was a buccal keratinised soft tissue seal considered important three months after implant placement?

- a. It enhances osseointegration of the implants
- b. It prevents prosthesis fracture under load
- c. It ensures long-term stability of soft tissues and supports oral hygiene maintenance
- d. It avoids the need for prosthetic gingiva in advanced vertical bone defects

4. According to the article, when are prosthetic gingiva required to achieve an aesthetic result?

- a. In cases of mild horizontal bone loss
- b. In advanced vertical bone defects
- c. When patients decline zirconia restorations
- d. When there is a lack of primary implant stability

ORAL HEALTH CD/OCTOBER/LEWIS/PAGE 52

1. What is the five-year survival rate for patients diagnosed at stage one?

- a. 85%
- b. 55%
- c. 20%
- d. 10%

2. In the context of the article, what does SCC stand for?

- a. Skin cancer cell
- b. Surgically complex case
- c. Squamous cell carcinoma
- d. Speckled, confirmed carcinoma

3. What clinical features are highly suggestive of cancer and need to be considered in all patients regardless of location?

- a. Unexplained ulceration in the oral cavity lasting more than three weeks
- b. A persistent and unexplained lump in the neck, the lip or in the oral cavity consistent with mouth cancer
- c. A red or red and white patch in the oral cavity consistent with erythroplakia or erythroleukoplakia
- d. All of the above

4. According to the article, why do some dentists have a reluctance to discuss mouth cancer with their patients? Due to...

- a. A lack of time during the appointment
- b. A lack of confidence to answer the patient's potential questions
- c. Patients' lack of clinical understanding
- d. A lack of patient literature and educational resources

ORTHODONTICS CD/OCTOBER/PATEL/PAGE 58

1. Why was periodontal stabilisation considered essential before progressing with orthodontic treatment in this case?

- a. To reduce the patient's severe gag reflex
- b. To allow for extraction of remaining posterior teeth
- c. To ensure the support system could withstand the forces of fixed braces
- d. To improve the appearance of triangular spaces prior to bonding

2. What type of surgery was carried out to advance the mandible in this patient?

- a. Le Fort I osteotomy
- b. Bilateral sagittal split osteotomy
- c. Subapical osteotomy
- d. Genioplasty

3. Which orthodontic appliance type was chosen for pre-surgical treatment in this case, and why?

- a. Lingual braces, to improve aesthetics during treatment
- b. Clear aligners, to allow the patient more comfort
- c. Buccally placed fixed braces, for best control and hygiene maintenance
- d. Removable appliances, to minimise periodontal forces

4. What form of retention was prescribed at the end of treatment?

- a. Full-time removable retainers only for six months
- b. Dual retention with fixed bonded retainers and vacuum formed retainers
- c. Night-time removable Hawley retainer only
- d. Clear aligner worn as a retainer indefinitely

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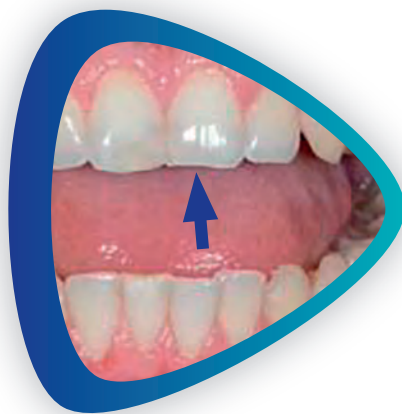
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YOU WILL FIND SIGNS OF EROSIVE TOOTH WEAR IN ALMOST EVERY PATIENT



97% of adults

have evidence of erosive tooth wear (BEWE score ≥ 1)

72% of adults

show signs of significant erosive tooth wear (BEWE score ≥ 2)*

40% of young adults

have evidence of significant erosive tooth wear†

PRONAMEL ACTIVE ENAMEL SHIELD ACTIVELY STRENGTHENS AND SHIELDS ENAMEL



ACCESS EXCLUSIVE CASE STUDIES

*At least one tooth with a BEWE score of at least 2
†Age 18-27

1. Recession, dentine hypersensitivity, tooth wear periodontal health and associated risk factors: an observational, cross sectional multi-centre epidemiological study in 7 European countries, December 2023

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