Society’s poorest have eight fewer teeth

Daniel Zimmermann
DTI

NEWCASTLE, UK: The poorest people in society have eight fewer teeth by their seventies than the richest, one of the largest studies of its type ever undertaken has found. The research, a collaboration between Newcastle University, the Newcastle upon Tyne Hospitals NHS Foundation Trust, University College London (UCL) and the UK National Centre for Social Research, showed that oral health is substantially worse among the poorest 20 per cent of society compared with the most wealthy. For those over 65 years old, the least well off averaged eight fewer teeth than the richest—a quarter of a full set of teeth.

More than 8,000 people aged 21 and over from all income groups and regions of the UK, excluding Scotland, were involved in the study, which was funded by the Economic and Social Research Council and used data from the recent UK Adult Dental Health Survey. Those with lower income, higher deprivation and lower educational attainment, and in a lower occupational class generally had the worst clinical outcomes, including increased tooth decay, periodontal disease, and diastemas, as well as fewer teeth overall.

Despite these social differences, oral health is improving and the oral health of young British adults overall is much better than it used to be. However, previously published research by the same team showed that, while the youth had much healthier mouths than did their predecessors, when asked how good or bad their own oral health was and how it affected them, the social divisions between rich and poor were evident, and even more pronounced than in older people. The poorest young people were very aware of their poor health and much more likely than the wealthiest to rate their oral health as poor or say that it affected their day-to-day life.

For those over 65 years old, the least well off averaged eight fewer teeth than the richest—a quarter of a full set of teeth.

Hygiene market thrives

According to a report, rising demand for treatment and awareness about hygiene will prompt dental clinics and practices to adopt more stringent cross-contamination control procedures. This will drive growth in the dental infection control products market, which is projected to reach US$1 billion by 2020.

No trouble with tooth loss

A study from Australia has indicated that tooth loss does not necessarily interfere with a patient’s quality of life provided he or she still has a certain number and type of teeth. The findings may have important implications for public dental health system around the world in allocating dental prostheses.

Saliva test for Ebola under development

In collaboration with two US scientific institutions, Ceres Nanosciences, a biotechnology company specializing in diagnostic products, is planning to develop a new method to detect the presence of the Ebola virus in saliva. Since current methods for diagnosing Ebola rely on blood samples, the four-month project aims to find a more effective and noninvasive alternative.

Ceres has developed and commercialized a novel nanoparticle technology, called Nano trap, which is suitable for a wide range of diagnostic applications and sample-handling needs. The technology could also be used to address the need for better testing methods for Ebola, scientists believe.

Milk consumption traced to teeth

An international team of researchers has discovered the first evidence of milk consumption in the ancient dental calculus of humans in Europe and western Asia. The team found direct evidence of milk consumption preserved in human dental plaque from the Bronze Age to the present day.

According to the scientists from the universities in Oklahoma, USA, York, London and Copenhagen, the study will have far-reaching implications for understanding the relationship between human diet and evolution as it provides direct evidence that the milk of all three major dairy livestock—cattle, sheep and goats—has been consumed by human populations for at least 5,000 years. It also corroborates previous evidence for milk fat identification in pottery and cooking utensils in early farming communities.

The discovery of milk proteins in human dental calculus will allow scientists to unite these lines of evidence and compare the genetic traits and cultural behaviours of specific individuals who lived thousands of years ago.
Plans for multimillion-dollar dental clinic in Adelaide receive green light

ADelaide, Australia: Access to public dental care in South Australia still ranks among the lowest in the country. A new dental clinic to be established as part of the University of Adelaide’s overall reconstruction plans for the clinic building could help to improve the situation. They were recently approved by the Government of South Australia.

The University of South Australia had also submitted a proposal for the partnership, which was put out to tender by the state government in June. The University of Adelaide’s new dental clinic will have 80 dental chairs and help to deliver improved dental care services to the public, a spokesperson said. She added that the reconstruction will cost the university over A$58 million (US$8.8 million). The expansion fits into the government’s oral health plan to improve access to health care services in the state until 2017.

Once established, the clinic will replace all dental care services currently offered at the school.

According to Vice-Chancellor and President Prof. Warren Beetham, the university is changing its current clinical care model to provide an enhanced year-round service with students placed in the clinic for 48 weeks a year. Moreover, two scholar- ships will be set up under the partnership to encourage students to take up work in rural areas. Better employment oppor- tunities in outlaying locations will also be provided.

South Australia Minister for Health Jack Snelling said that the plans will further facilitate the university’s position as a national leader in dental education and research.

“The clinic will provide state-of-the-art dental facilities where students can complete their training alongside skilled dental experts, and the public can access high-quality dental care,” he said. “The new deal also ensures we’re using public dental health care resources in the most effective way and provid- ing a sustainable dental work- force for South Australia in the future.”

The University of Adelaide has South Australia’s only dental school. Founded in 1920, it offers a Bachelor of Dental Surgery and a Bachelor of Oral Health. Currently, 500 undergraduate students are enrolled in these programmes, according to the university.
New study finds link between tooth loss and atherosclerosis

KYOTO, Japan: Japanese researchers have investigated the association between tooth loss, as an indicator of oral disease, and arterial stiffness, as a marker of atherosclerosis, in Japanese adults. They found that a relationship indeed exists between the two diseases. However, the severity of atherosclerosis varied between male and female patients with oral conditions.

Although a number of studies have suggested that oral disease is a risk factor for cardiovascular disease, the mechanism underlying the association between the two remains controversial.

Therefore, researchers at Kyoto University collected data from 8,124 individuals aged 50–75 with a history of inflammation-induced tooth loss. According to the World Health Organization, severe periodontal disease, which may result in tooth loss, is found in 15–20 per cent of middle-aged adults worldwide. Cardiovascular disease is the number one cause of death globally.

The organisation estimates that by 2050 more than 25 million people will die annually from cardiovascular disease.

The study, titled “Tooth loss and atherosclerosis: The Naga-hama Study”, was published online in the Journal of Dental Research, published by the International Association for Dental Research, on 18 November ahead of print.

Dr John Wildman, Professor of Health Economics at Newcastle University Business School, the principal investigator on the Economic and Social Research Council study, said: “Inequalities in oral health have not received the attention that they deserve. Our study is an attempt to redress this balance. Oral health contributes hugely to everyday wellbeing and addressing these inequalities may result in considerable improvements in quality of life for large numbers of individuals.”

Inequalities in oral health require urgent action

Dr John Wildman, Professor of Health Economics at Newcastle University Business School, the principal investigator on the Economic and Social Research Council study, said: “Inequalities in oral health have not received the attention that they deserve. Our study is an attempt to redress this balance. Oral health contributes hugely to everyday wellbeing and addressing these inequalities may result in considerable improvements in quality of life for large numbers of individuals.”

Prof. Richard Watt, Head of the Research Department of Epidemiology and Public Health at UCL, commented on the important policy implications of this research: “Inequalities in oral health require urgent action by organisations such as Public Health England—in particular more needs to be done to tackle the underlying causes of oral diseases such as sugary diets.”

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How is your relationship with Google; do you love or hate it? Does it display negative information about your dental practice? With right to be forgotten legislation, relief from career-damaging reviews now seems to be at hand, but does Google really forget?

In May, the EU Court of Justice found in favour of a Spanish citizen who sued Google for listing information about him that he asserted was no longer relevant. He alleged that this information was prejudicial to his selling a property. Fortunately for him, the court approved his appeal, contributing substantially to the right to be forgotten being drafted into European law.

For Google, this ruling opened the floodgate for requests for thousands of links to be removed from its search engine results page from residents in the EU. By July, it was estimated that the company had already received at least 70,000 such requests. Many applicants have made use of lawyers or search engine optimisation professionals, creating a niche for companies, which are charging the price of an implant per month to manage their clients’ online reputation on Google.

The company’s hands are tied in this matter. Regardless of its algorithms’ preference in ranking news and media sites, they have to follow this ruling. Recent threats of financial penalties in various European countries have softened Google’s resolve further, and there is a similar ongoing case in Japan. Is it possibly the end of the line?

For some dentists, this could be the long-awaited answer to their prayers. In an era in which online competition is omnipresent, to the patient’s critical eyes, negative reviews can be very damaging to a business. In the past, a life-long career could be destroyed by unsubstantiated hearsay online.

A seasoned professional’s one error would previously always have been visible on Google, possibly damaging that person’s confidence, career and standing. I have numerous conversations about negative Facebook/Yell/Google reviews on a weekly basis here at Dental Focus and receive a large volume of phone calls about how to be removed from Google for bad press.

What about data on dentists who have been investigated by the General Dental Council and cleared? Is not making this data available fair to them or do patients deserve to know the full story regardless of how much the dentist has invested in developing or redeeming himself or herself? If you were...
a prospective patient, would you perform a search and be put off by any negative findings?

No doubt, there is a minority who deserve to be highlighted on Google for all their wrong-doings. What is the position regarding having their names omitted?

In the first week of Google making available a means for search removal requests, 22 per cent (the greatest number by nation) of all applications came from the UK. When requesting removal from Google’s search engine results page, the user must not only list all links he or she wants to be removed, but also provide the reason that he or she wants to have such links removed. Invasion of privacy appears to be a popular reason.

Unfortunately, the company has also had numerous cases of fraudulent removal requests from impersonators trying to harm the competition. It seems that there is always good and bad practice, whatever the medium.

In order to manage this, Google states: “We will assess each individual request and attempt to balance the privacy rights of the individual with the public’s right to know and distribute information. When evaluating your request, we will look at whether the results include outdated information about you, as well as whether there’s a public interest in the information—for example, information about financial scams, professional malpractice, criminal convictions, or public conduct of government officials.”

Will you be safe once a link has been removed from Google? There are sites such as hiddenfromgoogle.com that openly display all hidden results. Even if a result has been hidden, the bottom of the results page on Google states that some results have been removed. At times, it even provides a link to hiddenfromgoogle.com.

It appears that, even if something has been deleted, Google still knows everything about you. Everything on the Internet is recorded forever (your party antics, hangovers and selfies), and where one stops tracking, another will take over.

If a patient really wanted to dig up some dirt, with a limited bit of knowledge, he or she still could do so.

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Naz Haque, aka the Scientist, is Operations Manager at Dental Focus. He has a background in mobile and network computing, and has experience supporting a wide range of blue-chip brands, from Apple to Xerox. As an expert in search engine optimisation, Naz is passionate about helping clients develop strategies to enhance their brand and increase the return on investment from their dental practice websites.
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IDS 2015 sets up largest showcase ever for dental innovation

BERGISCH GLADBACH, Germany: More visitors than ever will be attending the International Dental Show (IDS) in Germany next year, representatives of the organisier Koelnmesse and the Association of German Dental Manufacturers announced at a press conference in Bergisch Gladbach near Cologne. They said that over 125,000 professionals are expected at the world’s largest dental showcase, which will be held again in March next year, to learn about the latest developments and trends in dentistry.

With registrations in early December already surpassing those from the 2015 show, a record number of dental companies have already registered for the five-day event. Owing to the increase, the show will occupy an additional hall at the Koelnmesse fairground, extending the overall exhibition space to 150,000 square metres for the first time.

According to Koelnmesse Chief Operating Officer Katharina G. Hamm, almost every fourth company exhibiting at IDS is from outside Germany.

“The high level of internationality and the wide range of exhibits are unique worldwide. This is why the International Dental Show is a must-attend event for anyone who is involved in the dental business,” she said.

Chairman of the Association of German Dental Manufacturers Dr Martin Beckert said that, while the show will cover the entire spectrum of dental products, a special focus will be on the ongoing digitalisation in dentistry and linking of different systems for better diagnostics and treatment. The latest developments, including new and improved filling materials in conventional fields like restorative dentistry, will be on display as well.

As a first, IDS 2015 will have Career Day, which is intended to serve as a meeting platform for the dental industry’s future dentists. Professional visitors will also have the opportunity to experience the use of new technologies as part of the novel Know-How Tours, which are being organised in collaboration with two well-known dental practices in Cologne. Proven features, like the Speakers’ Corner lecture forum and Dealers’ Day on the first day of the show, will be continued.

Held every two years in the Rhine city, IDS is one of Germany’s oldest trade shows and is organised by the dental industry in Germany. In recent years, it has developed into one of the most important global exhibitions for dental products and services, attracting professionals from over 140 countries. Most companies choose to premiere their newest product developments here.

TAIPEI, Taiwan: Dental implant company Instradent, which formerly operated under the name Neodent, has announced that it has entered into a transaction agreement with T-Plus, a Taiwanese manufacturer of dental implants. The agreement will allow Instradent to expand its presence in the Asian market, one of the fastest-growing markets for dental implants.

Instradent stated that it is planning to acquire 45 per cent of T-Plus in March or April in 2015, with the option of increasing its stake up to 90 per cent in 2020. The company could thus control T-Plus by 2018. However, the agreement is still subject to approval by Taiwan’s Investment Commission.

According to Marco Gadoia, Chairman of the Board at Instradent, T-Plus was chosen as a partner in the company’s expansion plans because it is a low-cost business in Asia with an established presence in Taiwan and will help Instradent gain access to the value segment of the Chinese market. T-Plus’s dental implant system has already received clearance in China.

In September this year, Neodent announced that its business will be known as Instradent from 1 October. In 2012, Straumann acquired 49 per cent of Neodent for approximately CHF260 million (€216 million) in cash.

According to market analyses from 2014, the global market for dental implants and prostheses is estimated to be worth US$9.4 billion (€7.4 billion) by 2018. China, India and Brazil are the fastest-growing markets globally, as they account for an enormous patient population owing to their large populations generally and large ageing populations.
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American green card through investment in U.S. businesses

New global business opportunities for health care and other professionals have expanded to include America, where immigrants are respected as builders of the American dream. Peer Equities, a business support services company for dentists and other professionals, strategically invests in patient and dentist financing, dental news media, technology, management, and similar dentistry-related projects. It has launched the Arrive. Strive. Thrive. program, which allows people from around the globe to invest, live, and work in the U.S. Through the U.S. government’s immigrant investor or EB-5 visa program, foreign investors who provide capital to Peer Equities can gain the opportunity to permanently work and reside in the U.S.

A mutually beneficial option, the EB-5 program, was approved in 1990 by U.S. Congress. Through the program, foreign nationals receive immigrant visas, that is, permanent residence status, for them and their families through job-creating investments. The EB-5 program allows for the exchange through investment of $1 million in businesses that verifiably create a minimum of ten jobs for Americans. This program has been quite a success—Bloomberg Businessweek reported already in 2011: “Hundreds of small ventures across the U.S. are finding backers through the visa program, known as EB-5.”

This is how the program works: A foreign national applies under the EB-5 program to invest in a for-profit enterprise in the U.S. If the investor’s petition is approved, the investor and his or her spouse and children under the age of 21 will be granted conditional permanent residence for two years. Within the 90-day period before the conditional permanent residence expires, the investor must submit evidence that the full required investment has been made and that ten jobs have been created and maintained, or will be created within a reasonable period. There is a limit of 700 immigrants to the U.S. from a specific country each year. As with any bureaucratic process, maneuvering through the required paperwork can be complicated and stressful; thus, many EB-5 applicants welcome assistance and guidance from those with the necessary knowledge, experience and expertise. Peer Equities, a leader in business support services for dentists and other professionals, helps those professionals who invest $1 million navigate the EB-5 process by way of its exclusive concierge Arrive. Strive. Thrive. program. Peer Equities’ experienced immigration lawyers, who specialize in preparation and filing of EB-5 immigrant visa petitions for investors with U.S. Citizenship and Immigration Services (USCIS), prepare all the necessary immigration documents and file these with USCIS in a professional and speedy manner, thus expediting the processing of the immigrant visa petitions for Peer Equities’ investors.

Upon receipt of the investment funds, approval of the immigrant visa petition by USCIS, and issuance of immigrant visas to the investor and his or her family, Peer Equities’ team helps the dentist and his or her family arrive in the U.S., and the comprehensive program continues to support the dentist and his or her family in settling in a U.S. community. Because Peer Equities’ team understands the dental profession, its regulations and requirements, it can help the dentist achieve professional U.S. qualification standards and then match him or her with an existing business or help the dentist establish a new one, enabling the dentist to strive for success in the dental field. Once the dentist is in business, Peer Equities’ team provides ongoing support with practice management services and resources to help the dentist’s practice thrive.

An individual could choose to undertake the stressful task of dealing with all of the administrative, logistic, legal and accounting matters, costing him or her valuable time and effort. However, by partnering with the team of professionals and their affiliates at Peer Equities, dentists have the advantage of being able to practice independently in the U.S., while benefiting from the guidance and support of those who share their knowledge and passion of the profession, and who have the necessary expertise in the logistics of immigration and receiving assistance with the logistics of immigration and establishing a business in the U.S. The program allows dentists to transfer their existing capital into equity in the profession and business that they understand, making this a low-risk opportunity with high returns. The Arrive. Strive. Thrive. program also allows the dentist the choice to keep his or her investment working in Peer Equities’ programs or to get back the initial investment, plus accrued interest.

More information can be found at www.dreb5.com.
Smile design in the anterior zone

Achieving lifelike tooth aesthetics with direct veneers from Ivoclar Vivadent’s Tetric N-Collection

Direct additive procedures with bonded resin composites are considered the most conservative and least invasive technique to restore missing, diseased and unsightly tooth structure to enhanced colour, form and function in the aesthetic zone. However, the creation of natural-looking restorations can be a challenge for the clinician. For complex anterior composite restorations, the clinician must have a comprehensive understanding of the colour, translucency and morphology of natural teeth, as well as a materials science and the restorative techniques involved.

Nowadays, nano-hybrid composites provide improved strength, wear resistance, handling properties and surface characteristics. However, it remains to be determined whether their optical properties can ideally mimic natural tooth tissue, a prerequisite for restorations that are indistinguishable to the human eye at a speaking distance.

A 29-year-old male patient presented to our practice requesting improvement of the appearance of his smile. A clinical examination found that teeth 12, 11, 21, 22 and 23 exhibited multiple carious lesions, various discoloured composite restorations and slight erosion. In addition, the incisal edges of teeth 12, 11 and 21 were abraded and too short.

Tooth proportions were not harmonious, as teeth 11 and 21 were too wide in relation to the cusps and 22 and 23 were too small in relation to teeth 12 and 22 (Fig. 1). The patient wished to have the discoloured restorations replaced and to have the anterior teeth lengthened in order to regain a more harmonious appearance in terms of shape and colour. In addition, the patient specifically requested that the treatment be performed with minimal loss of tooth structure and at a low financial cost.

Polyvinyl siloxane double-mix impression (Virtual Light Body and Virtual Putty, Ivoclar Vivadent) of the patient’s existing dentition allowed us to make plaster models. As a first measure, the tooth proportions were corrected by preparing the distal aspects of both central incisors. All anterior teeth from the canine to the contralateral canine were then waxed up by the author in the laboratory to design the new smile, which was to have the correct length and position of the incisal edges as well as ideal tooth contours. This wax-up was captured in a silicone key (Virtual Putty) that served as a chairside template for the subsequent anatomically layered composite build-ups (Fig. 2).

Chairside treatment

For good access to the treatment field, the patient’s lips and cheeks were retracted using an OptralGate. The incisal edges of the patient’s maxillary anterior teeth were corrected by preparing a non-water-cooled, round-ended tapered diamond bur (Fig. 3). This technique was repeated for the other incisors. The bleached incisors were then individually polished with rubber cups and fine polishing strips.

Prior to any tooth preparation, the shade was determined using the Tetric N shade guide (Ivoclar Vivadent) (Fig. 1). The selected shade (B2) was then confirmed by applying and light curing a small composite sample to the central incisor. In order to correct the tooth proportions, the distal aspects of both central incisors were carefully prepared with a diamond-coated wheel at slow speed and without water-cooling (Fig. 4). The additional space gained with this preparation procedure allowed the mesial incisors to be changed with additive procedures. Their width needed to be increased by building up the mesial aspects with composite to correct the overall tooth proportions according to the golden ratio (Fig. 5).

After all the defective composite restorations and decayed tooth tissue had been removed, large defects and multiple stasemas became visible. For achieving seamless integration of the composite build-ups, minimally invasive veneer preparations with a supragingival chamfer design were performed with a round-ended tapered diamond bur (Figs. 6 & 7).

Bonding procedure

An etch-and-rinse protocol was selected as the standard bonding procedure for the direct veneers. After differential etching of the enamel for 30 seconds and the dentine surfaces for 10 seconds with 15% phosphoric acid gel (Fig. 8), the teeth were rinsed with copious amounts of water and briefly air-dried to keep the dentine surfaces slightly moist.

A light-curing bonding agent (Tetric N-Bond, Ivoclar Vivadent), which allows for precise and economical application. By activating the click mechanism several times, the attached VivaPen brush camuflage was verified with the Tetric N-Bond (Fig. 9). The etched tooth surfaces were then coated with a thin layer of bonding agent, which was then light cured for at least 10 seconds. Excess bonding material was removed with a saliva ejector, and the solvent (ethanol) was evaporated by a gentle stream of air.

A significantly improved appearance of the teeth became apparent with the Tetric N-Ceram shade (B2) to the central incisor without bonding. In order to correct the tooth proportions, the distal aspects of both central incisors were carefully prepared with a diamond-coated wheel at slow speed and without water-cooling (Fig. 4). The additional space gained with this preparation procedure allowed the mesial incisors to be changed with additive procedures. Their width needed to be increased by building up the mesial aspects with composite to correct the overall tooth proportions according to the golden ratio (Fig. 5).

The overall goal was to rejuvenate the patient’s smile not only in terms of tooth contours but also in terms of a natural colour gradient and different translucency levels. The incisal edges of younger, non-abraded teeth often show a high level of opalescence. The goal in this clinical situation was to reproduce this effect. Hence, a translucent flowable composite (Tetric N-Flow, Ivoclar Vivadent) was applied with the silicone key in place. It was spread to a thin layer with a dental probe (Fig. 11) and light cured for 10 seconds.

The Bleach I shade shows a much higher degree of translucency (20 per cent) compared with standard enamel shades (15 to 15 per cent) and allows light to pass through the composite. These thin enamel shells are highly opalescent and show the characteristic halo effect around the incisal edges (Fig. 12).
anatomically (Fig. 13) with an opaque, highly chromatic composite material (Tetric N-Ceram, shade Dentin B2). It was of utmost importance to impart all the restorations with sufficient chroma through adequate thickness of the dentine core. Therefore, the colour was developed within the depth of the restoration, thereby avoiding the restoration having a greyish appearance. Enough space was kept for the subsequent enamel composite stratification.

In order to create a natural colour gradient, a small amount of a darker opaque flowable dentine material with a high chroma (Tetric N-Flow, shade Dentin A3.5) was applied to the cervical aspects of the teeth (Fig. 14). In order to further enhance the opalescence of teeth 12, 11, 21 and 22, additional opalescent composite (Tetric N-Ceram, shade Bleach I) was applied to the incisal third of the central and lateral incisors in thin layers.

By applying miniscule scattered amounts of a light-curing white stain (Tetric Color, white, Ivoclar Vivadent), the illusion of discreet whitish opaque areas of hypoplastic enamel was created within the incisal edge. A medium-translucency enamel shade (Tetric N-Ceram, shade B2) was applied to build up all of the teeth to full contour with natural emergence profiles. In order to conclude the composite stratification, proximal vertical ridges and embrasures were shaped with a non-stick disposable chisel tip (OptraSculpt, Ivoclar Vivadent; Fig. 15).

Tetric N-Ceram was easily sculpted and showed excellent stability after application prior to light curing.

Finishing and polishing

For natural light reflection, the anatomically layered surface was refined using a fine-grit diamond finishing bur at low speed and without a water spray. This enabled perfect visual control and reduced the risk of excessive removal of composite material. In order to create a homogenous and smooth surface, another dry finishing step was performed with an abrasive silicon carbide-containing rubber polisher (Astropol F, Ivoclar Vivadent) at slow speed. At this stage, a silky surface lustre started to emerge. Anatomical surface characteristics, such as vertical grooves, can be further enhanced under good visual control. Subsequently, all composite surfaces were wet polished at high speed (Fig. 16) to achieve a glossy surface lustre (Astropol HP, Ivoclar Vivadent). Generally, for finishing and polishing aesthetic anterior composite restorations, the best results are achieved with multistep polishing systems.

The patient was recalled two weeks after treatment. With the tooth proportions and shapes corrected, the patient’s smile was now in harmony with the lips and face (Fig. 17). A close-up photograph of the patient’s smile revealed a pronounced lifelike opalescence, characterisations and a halo effect of the central and lateral incisors (Fig. 18). The lateral view displayed natural light reflections from the highly polished macromastic and micro-anatomically shaped composite surfaces (Fig. 19).

As an alternative to the treatment described here, all-ceramic veneers (e.g. IPS e.max, Ivoclar Vivadent) would have been a viable aesthetic and durable treatment option, mainly owing to their less invasive nature compared with all-ceramic crowns. Unfortunately, the cost of all-ceramic veneers is substantially higher than any kind of direct resin restoration. Since the patient expressed serious financial concerns, ceramic veneers were not pursued.

In this clinical case, direct adhesive composite restorations were the preferred option. They are also a very conservative treatment modality because any tooth preparation was strictly limited to defect correction and did not serve the purpose of generating retentive surfaces. Moreover, in the case of future fractures or chipping, composite veneers can be repaired much more easily and predictably than ceramic veneers. This can be an advantage for patients conscious of cost.

Conclusion

The selection of a suitable composite material with optical properties that ideally mimic natural tooth tissue is a key factor in creating restorations that blend well with the remaining tooth structure and are invisible to the human eye. In the clinical case described here, the universal composite system Tetric N-Collection was used for the build-up of the patient’s anterior teeth. The combination of opaque dentine shades with high-chroma, medium-translucency enamel shades and highly translucent enamel shades with natural opalescence yielded a predictable and aesthetic outcome through the use of Filmsaturation, translucency and opalescence.

In addition, the material features finely tuned filler technology, which imparts favourable polishing properties that result in a high surface gloss. Tetric N-Collection has proved to be a universal composite system with great aesthetic potential and, therefore, also suitable for aesthetically challenging cases in the anterior dentition.
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This case required a precise evaluation of the different alternative approaches and clinical decision making before deciding on the final treatment.

A surgical approach would have involved extraction of teeth 11, 12 and 21, and enucleation of the significant cyst seen in the pre-surgical CBCT scan, followed by bone grafting to fill the cavity. This would have required placement of an additional one or two implants and restoration with either three single implant-retained crowns or an implant-supported three-unit bridge.

It was determined that the surgical approach was too traumatic and would cause extensive loss of vital tissues, making it difficult to establish a good aesthetic result later on. It also would have required the patient to lose three of his four front teeth, which would have been psychologically traumatic. Endodontic therapy was chosen instead in order to decompres the cyst and thereby save the teeth, retain the ridge form and preserve the interdental papillary tissue and architecture.

The initial view of the linked crowns at the 11 and 21 sites showed an unaesthetic appearance with poor soft tissue health and colour (Fig. 1). A pre-surgical radiograph revealed root of tooth 21 to be resorbing, with apical radiolucency at 11 (Figs. 2a & b). After extraction of tooth 21, resorption of the socket wall was evident (Fig. 3). Therefore, a graft with bone substitute material and coverage with a membrane was performed (Fig. 4) to prevent collapse of the buccal plate. The wound was sutured and a laboratory-made four-unit temporary restoration was delivered (Fig. 5).

One year was allowed for post-graft healing, as well as to allow for decompression of the radicular cyst. At the one-year follow-up, the soft tissue appeared healthy (Fig. 6). Figure 7 shows the virtual placement of a 4.8 mm x 13 mm OsseoSpeed EV implant, as viewed in a cone-beam computed tomographic (CBCT) scan using the SIMPLANT software.

The implant was placed utilising a flapless approach and a 4.8 Ø 6.5 mm HealDesign EV abutment was placed to support transmucosal healing (Fig. 8). After an impression was taken, the Implant Replica EV was connected to the Implant Pick-Up EV (Fig. 9). A plaster model was created and scanned.

These data were transferred into the ATLANTIS VAD software. Figure 10 shows the virtual design of an ATLANTIS abutment in gold-shaded titanium. This abutment was placed in the model with gingiva mask, and final individual full ceramic lithium disilicate crowns (IPS e.max) were created (Figs. 11 & 12).

The ATLANTIS abutment in gold-shaded titanium was installed using an abutment screw tightened to 25 Ncm (Fig. 13). Figures 14 & 15 show the facial and occlusal view of the final restorations at delivery, with full ceramic crowns at teeth 12, 11, 21, and 22. Radiographic image taken when the final crowns were inserted demonstrates an excellent restorative fit with stable marginal bone levels (Fig. 16). Six months after the crowns were inserted, a follow-up examination of the patient revealed excellent peri-implant tissue health (Fig. 17).
Use of dental materials: Are we all deviants?

Dr Thomas O’Connor

When I was training at university, every stage of a procedure was supervised, step by tedious step. The “idiot sheets” (as our restorative dentistry professor called them) for each material were available to be referred to and followed religiously. Deviating from those instructions was not an option.

A few years into practice, it begins to be difficult recalling what was said about which particular materials. You know that you were told what was compatible with what, and what was not. When a sales representative turns up with something wonderful and new and better, a little alarm rings in your head, cautioning you that what the representative is telling you is contrary to what you were taught. But no, the representative quite confidently assures you that the research says, the representative turns up with something wonderful and new and better, the new product is faster. Yes, faster, much faster. You can save a whole 50 seconds per procedure. You do not have to wait for the next step this does two steps in one or even three, if you want to be really good. And faster is better.

At this point, you begin to regret your failing recall of material science. How am I supposed to evaluate which material is best, when each of the glossy brochures shows that they are all better than each other?

The truth of the matter is, of course, that virtually all of the mainstream products out there are fit for purpose. What makes any material good, bad or indifferent is how the clinician uses it, including skill, time, effort and the amount of care. Even the best of products is going to be rubbish in the hands of someone who uses it badly.

“Lithium disilicate crowns are useless,” I was told by a dentist recently. “Every one I have placed has fractured.” With twice as many years of clinical experience as me, this dentist was preparing for this material exactly as he would for a porcelain-fused-to-metal (PFM) crown, using a coarse diamond fissure bur. The same internal angles, same margins, same lack of surface finish, same flat occlusal surface on the preparation that he had always had, and cementing the final product with glass ionomer. This had served him well for PFM crowns, but this new material was letting him down.

What was his conclusion? The material was to blame. Progress was a bad thing. He was going to stick with what he knew worked, full coverage PFM crowns for everyone, and disregard progress.

Maybe we all have a bit of that in us. All of the exact details of every process can be lost in the day-to-day stresses of the workload: that little step being skipped just this once, then once again and then another step gone the next time.

It is the normalisation of deviance: people becoming so accustomed to deviating a little from procedure that “they don’t consider it as deviant, despite the fact that they far exceed their own rules for elementary safety”.

Just skipping that little step this time, not performing the process exactly to the manufacturer’s instructions, finding a way that is convenient, and assuming no responsibility for the results of the deviance. When something goes wrong, when a restoration fails, when a patient is in pain, it is the fault of the material, or the patient, or the laboratory or the nurse.

The next time you are placing or cementing or layering, stop and ask yourself: am I being a deviant? Refer to your idiot sheet and take the time to recall the correct process step by step. And deviate back to normality.