KISS principle and non AGP dentistry for pandemic periods and beyond

Robert Emanuel

Consultant in Special Care Dentistry

Since the lockdown at the end of March 2020, all areas of healthcare have been turned on their head, not least dentistry. We are no longer able to reach for our 3 in 1 sprays or fast handpieces to carry out both routine and complex dentistry, as we know that by doing so, we will be producing an aerosol and therefore increasing our risk of spreading the COVID-19 virus. For many, this change of practice has turned their worlds upside down, and entirely changed how they practice on a day to day basis. So what is the solution for overcoming this upheaval? Well it may be a reliance on re-establishing one's practice, to accommodate more basic treatment options based on the adage of KISS – Keep it Simple Stupid!

Dentistry is a very technologically driven profession. New techniques, gadgets and materials, all with clinical advantage over their predecessors, are marketed to skilled professionals keen on improving their patients' oral health and appearance, whilst promoting their practice as being both caring as well as being profitable. As such, practitioners can historically expand their surgical skills to carry out complex, advanced procedures under local anaesthetic and in their own dental chairs. There is pleasure in learning new skills and techniques, and

then offering them to patients, but in these 'different times', perhaps there needs to be an emphasis on new simpler techniques as well as revisiting core skills such as dental extraction.

The restorative cycle and restoration longevity

As dental students we're taught that all restorations have a finite life span. What we once called permanent restorations are now often correctly called definitive restorations i.e. they will survive for as long as they can in the very hostile environment of the oral cavity. A study by Yip and Smales¹ quoted survival rates for restorations placed in general dental practice which included:

- Amalgam 8-12 years
- Anterior composite 7-10 years
- Posterior composites/Glass ionomers 5-8 years
- Cast and metallic ceramic crowns 15-20 years.

Although crowns seem to last longest, one needs to remember that crowning a tooth will mean it is further along the restorative cycle and closer to its eventual extraction. To provide restorations with a lengthy time span obviously you need to use a good technique with a suitable material choice. However, controlling caries risk will also greatly reduce the chance of restoration failure, but will often need input from both the dentist and the patient, to change harmful dietary behaviours.

The study results interestingly also showed a greater survival for amalgam restorations

when compared to posterior composites, a result which perhaps suggests the continued usefulness of amalgam as a material of choice for many posterior restorations. Although less aesthetic than composite, very few practitioners would argue against the relative simplicity of placing an amalgam restoration. Amalgam use in NHS practice from its inception in 1948 to more recent times has been fairly ubiquitous. For much of this era, the population had high dental needs due to caries incidence, and a quick, simple method of restoration helped 'fix' the teeth of a large population with lots of cavities. When we get back to 'normal' practice in the future, might the conditions we face from our patients who have waited patiently for care be similar to those UK NHS patients in the mid to late 20th century? Might therefore amalgam make a resurgence as the posterior material of choice for adults?

Underpinning all dental care with good preventive practice

Good preventive care is a crucial yet simple way of ensuring patients reduce their disease risk. Delivering Better Oral Health² provides an excellent toolkit from which dental health professionals can use scientifically proven advice and methods to reduce the risk of their patients for all types of oral disease.

However, although prevention is both simple and essential, it is understandably not as glamorous or exciting as operative dentistry and as such is easy to forget when preparing dental treatment plans. As dentists we need to judge our success not only on the complexity of the treatment we provide

or on how long complex restorations last, but also how little dental intervention our regular patients require over extended period of care and review. No patient likes either sitting through, or paying for extensive dental treatments even if they like the results. Therefore a successful approach, surely has to be one which pushes a strong prevention message and regular review where no treatment needed after review, is the order of the day.

Non AGP strategies and/or Minimally Invasive Dentistry

Minimally Invasive Dentistry (MID) is an umbrella term to describe a variety of different restorative techniques which remove less tooth tissue than more traditional methods leaving behind as much of what belongs to the patient as possible.³ In an era where techniques not only potentially benefit from being more conservative, MID techniques often tend to be non-Aerosol Generating Procedures (AGP) too. This is brought to the fore by the Standard Operating Procedure produced by the Office of the Chief Dental Officer⁴ which mentions using different MID techniques as a potential way of providing restorative care without the use of AGPs. Table 1 shows a list of techniques which can be considered as Minimally Invasive. When looking through this list, you may find techniques which are new to you and rely on some postgrad training/instruction. What you won't find are any techniques which are difficult to learn. Additionally many of the techniques can be used without the use of local anaesthetic and once again may be seen as preferential to patients, especially for those with any level of dental anxiety.

Shortened dental arch or molar endodontics?

Endodontics has changed from essentially being recognised as an advanced technique to one which is now universally offered to NHS and Private patients alike. The introduction of rotary endodontic instruments is likely to have been the clinical development which has put successful molar endodontics in reach of the majority of primary care dentists. However, for those of us who deal with older patients with chronic illnesses such as dementia, we offer see patients with collapsing dentitions. Here, the heroic efforts and attempts of previous dentists at root filling and restoring molar teeth have left them with posterior dentitions which are

Table 1. List of Minimally Invasive Techniques

Re-mineralisation techniques	Fissure sealants	Resin Infiltration	Silver Diamine Fluoride
Atraumatic Restorative Technique (ART) Hall crown technique.	Chemical caries removal (Carisolv)	Selective Caries removal	Air abrasion

impossible to keep clean, and for us dental professionals to maintain. Once you add implants into the equation, this problem of maintaining healthy restorations in patients with seriously deteriorating general health is amplified further.

The concept of the shortened dental arch (SDA) was originally suggested by Kayser⁵ and subsequently expanded on by Witter *et al.*⁶ The suggestion was that if a dentition had four (preferably symmetrical pairs) of occluding teeth, then sufficient adaptation was possible to allow adequate chewing function. In other words, losing molars may not necessarily be a huge loss to one's overall chewing ability. Their research also suggested that although a full (healthy) occlusal set up is still to be preferred, this is not always possible due to clinical and financial conditions and such the use of SDA can be a useful theory to follow if needs be. It also emphasises the importance of focusing attention on the premolar and anterior areas which are perhaps more strategically important, including aesthetically. There are arguments in the literature for and against use of SDA but once again it is easily recognisable as a simpler form of dental treatment, especially in those who are unable or unwilling to care for carefully root filled and restored molar teeth.

Molar endodontics in emergency care is another recognised, but perhaps seldom discussed dilemma. On being presented with a squeezed-in emergency patient with an abscessed molar tooth, the dentist has the options of offering the correct but incredibly disruptive treatment of LA, isolation, access, drain and dress, or the quick and easy, but usually incorrect option, of a script for antibiotics. During the height of the recent COVID-19 pandemic the Chief Dental Officer for Wales suggested in their advice document that endodontic care should be offered at its urgent dental hubs for those patients with endodontic problems in their anterior and premolar teeth only.⁷ Perhaps this is a suggestion of the way forward for primary care dentistry in the future?

In essence though, if things are to change this shift in treatment focus has to be managed

effectively by both the profession, the patients and perhaps more importantly the politicians (both dental and parliamentary). Expectations would need, in many instances, to be fundamentally changed.

Summary

It is very difficult to find positives during the current state of affairs brought about and faced by the entire country during the COVID-19 pandemic. Dentistry is one area of daily life which has been particularly hard hit and will take its time to rebuild into the efficient, patient focused treatment delivery service it has always been. However there may be at least some opportunity to explore use of simple MID techniques along with an increased focus on prevention which in the long run may help enhance both our patients' oral health and experience of receiving less invasive dental care. ♦

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