

A brighter tomorrow

Dr Mark-Steven Howe guides us through the recent advancements in modern dentistry

Dentistry used to be simple; treatment choices were limited and prior to the 'celebrity smile' cosmetic dentistry did not exist.

Over the past decade there have been massive technological advances in dentistry and medicine that have forever changed the treatment options for patients. Included in these advances are implants, guided bone regeneration, milled ceramics and advanced radiographic imaging. Additionally the public's expectations have dramatically increased for a brighter, whiter, more youthful smile.

Personally, I think the biggest advancement in recent years is in visualisation; the better I can see what I am doing the better the clinical results achievable for the patient.

The arrival of the operating microscope into dentistry has launched a new era in dental care by improving magnification and illumination. The dentist can now see every detail of the teeth from micro-cracks to hidden decay and infection, which in the past meant possibly having to lose the tooth. We can now dramatically reduce the 'guesswork' when trying to save teeth.

The operating microscope has now moved from the ophthalmic and vascular surgeon to the dentist, bringing all the techniques and advantages of microsurgery to the dental surgery. We are now able to magnify the tooth by up to 20 times and, using special lighting, can eliminate the shadows where decay and infection previously lurked. Combining with micro-surgical instruments such as super-small mirrors and ultrafine dental probes we can now access the previously inaccessible.

Modern dentistry is almost a case of 'one step backwards, two steps forwards'...

A lot of the conventional treatments were limited by the ability for the dentist to precisely see where the infection was hiding. The patient's cheeks and tongue create shadows that hampered the dentist from clearly seeing the teeth almost to the point where he/she was working by feel alone. This is especially true of root fillings where we have to accurately clean, shape



and seal possibly up to four root canals (each the thickness of a human hair) through a hole that is 5mm in diameter.

Improved vision and precision equals:

- Better composite (white) fillings with an improved seal and more natural appearance.
- More precise edges on crowns and veneers
- Higher quality root fillings and the ability to retreat previously root filled teeth which have failed.
- Cleaner root surfaces when treating gum disease
- The ability to have high quality video and images of the teeth. This is extremely useful when explaining treatment options to patients and colleagues.
- The delicacy of microsurgery improves patient comfort and speeds up healing.

Most importantly we are now able to save teeth that previously had to be extracted, and I think I am right in saying that patients generally would like to keep their own teeth rather than have extractions. If we can keep hold of our teeth longer and improve their looks by enhancing the precision of our restorative and conservative treatments the patient can avoid or at least defer the more expensive and complicated treatments such as implants.

I, and many in the profession, strongly believe that if we can go back and improve some of our older restorative techniques

we can reduce the need for more costly and complicated treatments. The ten-year success rate on a root-filled front tooth and a similar front tooth restored with an implant are both around the 90 per cent mark. It is interesting to note that a root-filling can be completed in a few hours and the implant may take up to a year before it is finally completed at three times the cost. This is not an 'anti-implant' stance but it makes sense to exhaust all practical restorative options and try and preserve the implant option as our 'ace in the pack' to be pulled out when there is no better choice. In addition where possible the use of a surgical microscope, microsurgical techniques and implants all complement each other to produce improved outcomes for our patients

So in conclusion by combining the improved magnification and precision of the surgical microscope and conventional dental techniques we can get the best possible success rates out of our own teeth before we need to resort to more complicated, expensive and protracted treatments.

As a foot note, if you keep on top of your check-ups and keep the idea that 'prevention is better than cure' you won't have to worry too much about advanced surgery. ■

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