Dear reader,

It is fair to say that the “gold rush” in dentistry has been over for a long time. Even since the world market price for the precious material has skyrocketed during the 2000s, it has become more lucrative for many to get the gold from fillings out than to actually get it in.

Subsequently, the market for dental gold has crashed, particularly in countries, where state-of-the-art materials like composites or ceramics have now become the norm. With the ongoing development and refinement of these materials, it can be assumed that the hours of the world’s oldest filling material are finally counted.

In Asia, however, gold will stick around for a while, if not for the reason of being used as a filling material. According to reports by environmental groups, dentists working in small scale gold mining areas in the Philippines have partnered with miners to trade mercury in form of dental amalgam for gold, a practice which significantly adds to the country’s already severe mercury waste problem.

This practice has been commonplace for decades and has developed into a lucrative business, particularly for the dental profession, as amalgam is easy to import and trade in the country owing to lax regulations. While there have been initiatives to make miners comply more with waste management standards, there have been no interventions against the dental professions for this practice so far.

As one of the few Asian countries to have signed the Minamata Convention for a global phase-out of mercury, the Philippines have committed to an ongoing development and refinement of these materials, which can be assumed to be the case.

Separate surgical procedures, the first for an impression of the alveolar/basal bone for the fabrication of the implant, and the second for the placement of the implant.

Each surgical intervention required an invasive and extensive flap to expose the underlying bone. With the inception of CT, a scan of a patient’s jawbone allowed for the fabrication of a physical resin-based medical model. From this model, the subperiosteal implant could be designed and fabricated, circumventing the need for the first surgical procedure reducing patient morbidity by 50 per cent.

Of course, the slice thickness and resolution did not result in a high degree of accuracy, and often the implants did not fit office devices provided a significant catalyst for the dental industry to allow for instant access to the technology.

Three-dimensional imaging modalities have truly empowered clinicians with an increased visual acuity of individual aspects of patient anatomy for a wide variety of clinical applications. These include but may not be limited to oral surgery procedures, orthodontics, periodontology, endodontics, temporomandibular joint disorders, bone grafting, sleep apnoea, dental implant placement, and reconstruction. The utilisation of CBCT data has further expanded and augmented with the ability to merge/superimpose cross-platform data from intra-oral and optical scanners for increased diagnostics and to create a direct link to CAD/CAM.

Dear reader, we have come a long way since 1985…

“I suppose we are done here.”

Dr Scott D. Ganz
USA

It was first exposed to the world of 3-D imaging for dental applications in 1985. At that time, when patients had severely resorbed ridges, and root form implants were just becoming accepted in the US market, subperiosteal implants were a recommended treatment alternative. Conventional subperiosteal implants required two separate surgical procedures, the first for an impression of the alveolar/basal bone for the fabrication of the implant, and the second for the placement of the implant.

Each surgical intervention required an invasive and extensive flap to expose the underlying bone. With the inception of CT, a scan of a patient’s jawbone created a 3-D dataset that would allow for the fabrication of a physical resin-based medical model. From this model, the subperiosteal implant could be designed and fabricated, circumventing the need for the first surgical procedure reducing patient morbidity by 50 per cent.

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Readers with useful information by presenting a variety of clinical applications and state-of-the-art concepts that showcase CBCT technology and related applications. It is time to realise that there is a real danger when we are hound by 2-D concepts, when clearly today we live in a 3-D world. And, as Sir William Oder stated, “What the brain does not know, the eye cannot see.”

We have come a long way since 1985, but not far enough in my humble opinion. I truly believe that every dental school should not only have a CBCT imaging device, but also be actively integrating the technology into the undergraduate and graduate curriculum, teaching clinicians how to utilise these most powerful tools to provide our patients with the best possible care but without the guess work.

The evolution continues within the pages of our new cone beam international magazine. We will do our best to provide our readers with useful information by presenting a variety of clinical applications and state-of-the-art concepts that showcase CBCT technology and related applications. It is time to realise that there is a real danger when we are hound by 2-D concepts, when clearly today we live in a 3-D world. And, as Sir William Oder stated, “What the brain does not know, the eye cannot see.”

Contact Info
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The use of gold and gold alloys has a long tradition in the practice of dentistry. Gold-based restorations, such as crowns, inlays and onlays, have excellent biocompatibility, and durability, as they do not corrode and wear at the same rate as vital teeth. Their aesthetics has been considered acceptable compared with certain other metal alloy restorations or amalgam fillings. Gold alloys have also been used for the framework in porcelain-fused-to metal restorations.

One of their shortcomings is their poor aesthetics in gingival regions, as well as an anterior tooth restorations, in particular, and their use is declining, as more aesthetic and low-priced options gain popularity. Such restoration systems for full bridges, short bridges, crowns, dental implants, etc. are all-ceramic (zirconia layered with dental porcelain) or fibre-reinforced composite restorations.

Contemporary prosthetic materials include metals/alloys, ceramics, porcelain, and resin composites (with or without fibre reinforcement). Their clinical selection depends heavily on the training, aptitude and experience of the dentist. Owing to the increase in dental treatment options, of which some are becoming increasingly competitive, it is expected that gold-based restorations will be used increasingly less on a global scale.

It is not a great surprise that strongly developing economies in Asia invest in gold dental more than stagnating economies do, such as the USA and the EU. At least, because in these economies gold-based prosthetic restorations are often considered a sign of prosperity and a personal financial investment. Their use however will diminish owing to the world market price of gold (and certain other precious metals) and their aesthetic shortcomings. Bearing in mind that they may have some clinical problems that are not yet fully resolved, all-ceramic and fibre-reinforced composites are expected to dominate in dental restorations worldwide.

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