The future is now: Revolutionising dentistry with digital dentures

By Iveta Ramonaite, Dental Tribune International

Whereas it was previously impossible to imagine a dental laboratory adopting a fully digital workflow, digital dentistry has already redefined the previously established dental procedures and empowered dental professionals and clinicians to take the leap and immerse themselves in a digital future. The benefits of dental technology can be clearly seen in the introduction of digital dentures—not only has this facilitated denturists’ and dental clinicians’ work by offering more flexibility and efficiency, but it has also improved the patient experience and enabled patients to become more involved in their own care.

I have been working with 3Shape for about five years. In the beginning, using denture software was not one of my goals, nonetheless, curiosity about the innovation and computer-aided design offered by 3Shape allowed me an opportunity to appreciate what appeared to be, for the first time, a real game-changer.” Dr Lucio La Russo, associate professor of oral disease at the University of Foggia’s School of Dentistry in Italy, told Dental Tribune International. “Since then, huge developments have been made in denture software, and it can now be considered essential for those who want to exploit the benefits of innovation and the related opportunities in digital practices and laboratories,” he added.

According to Russo, using digital dentures offers higher standardisation. This, in turn, manifests itself in higher quality and a greater reduction in processing time and, consequently, increases efficiency and profitability. He stated that switching to digital technology for the fabrication of dentures also results in changes to clinical and laboratory approaches. He stated: “No more physical impressions, no more physical casts, no time-demanding procedures. Each step is precisely defined and optimised to save time and enhance effectiveness.”

A clean and enjoyable experience

Germon Versteeg, a denturist and the owner of DTL Mediaan, one of the first fully digital dental laboratories, told Dental Tribune International that besides obvious advantages such as cost-efficiency, improved denture workflow and scaled-up production, working with digital dentures makes the job much cleaner. Whereas it used to be a messy process, leaving fine layers of dust on the working surfaces, Versteeg compared walking into a denture shop now with walking into a wellness centre. “It feels like home and it’s really clean,” he said. “We have a smile design room. So when people come in for the first time we drink a cup of coffee, and we discuss their new smile.”

Using digital dentures also puts more power into the hands of the patients. Versteeg said: “The patients themselves are in charge of their aesthetics, and they can discuss the aesthetics with the help of 3D simulations.”

Versteeg noted that fabricating a new denture is fairly uncomplicated, since it only involves creating a 3D picture of the patient, simulating a new smile and scanning the mouth with an intra-oral scanner, such as 3Shape’s TRIOS. He went on to explain that people used to find wearing dentures quite off-putting. However, since it is a necessity rather than a choice, Versteeg believes that people should wear dentures with confidence: “So why can’t we make it a sexier thing, something to be proud of?”

Endless possibilities

For those thinking about transitioning to a fully digital production workflow, Versteeg explained that 3Shape software is highly sophisticated. Whether one wants to work with dental models, intra-oral scanners or impressions, all these and more options are already in the software. “I have the flexibility to work in your own way,” Versteeg commented. Additionally, the software possesses older tools, making the transition so much smoother for more conservative dental professionals.

Bien-Air has always prioritized provider and patient safety by developing products that protect against cross contamination. With the COVID 19 Pandemic, these features are more important than ever.

The high-speed dental handpiece without anti-retraction valves may aspirate and expel the debris and fluids during the dental procedures. More importantly, the microbes, including bacteria and virus, may further contaminate the air and water hoses within the dental unit, and thus can potentially cause cross-infection.

Bien-Air, being conscious of cross contamination risks, has designed its electric attachments and high-speed contra-angle couplings to protect fluid reflux from the oral cavity into non-sterilizable dental handpiece tubing and water lines. Having an anti-retraction valve in the body of the handpiece, which can be actuated, significantly reduces the backflow of oral bacteria and viruses into the non-sterilizable dental unit hoses.

As an extra preventive measure for cross infection, Bien-Air Unifix® coupling are also equipped with an anti-reflux valve.

Recent advancements in denture software have facilitated the transition to a fully digital workflow, and dental professionals are invited to embrace the benefits of digital dentistry.