A new smile in one day

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Introduction

Digital workflows can improve our treatment results. In this report, a multidisciplinary patient treatment is presented, focusing on the chairside workflow and the use of nice ceramic material (Straumann). Nine successful chairside restorations (six in the aesthetic zone) are described. The teeth and implants were prepared and scanned during the morning, and the final restorations were placed the same day. The patient received her new smile in a much shorter time than with traditional protocols, and this was a key driver in her decision to accept the treatment plan exclusively with Straumann digital solutions.

Initial situation

A generally healthy 51-year-old female patient visited our clinic requesting a new smile. On extra-oral and intra-oral examination, she was found to have a medium smile line with fixed restorations and multiple recessions in the aesthetic zone, carious lesions, inflammation, plaque and missing teeth at positions #16, 25, 26, 36 and 45 (Figs. 1–5).

Procedure

Treatment planning
After cause-related therapy (oral hygiene instructions, prophylaxis and dental fillings), the patient was ready for the surgical phase. This would include mucogingival surgery in the second sextant in order to improve the pink aesthetics and the placement of dental implants in the posterior region.

After the soft tissue had healed, the restorative phase would begin. In the second sextant, the old crowns
would be removed and the teeth prepared for the new rice crowns following the Straumann chairside workflow.

**Surgical procedure**
The five planned implants (Straumann Standard Plus; diameter: 4.1 mm, length: 8.0 mm, regular neck, Roxolid, SLActive) were placed in positions #16, 25, 26, 36 and 45 in one surgical phase. Provisional crowns were placed for all the implants.

The multiple recessions in the aesthetic zone were treated with a tunnel technique using a connective tissue graft taken from the palate. This surgery was performed by Dr Enrique Javer (Figs. 6–8).

**Prosthetic procedure**
When all the implants had osseointegrated, the posterior remaining teeth were prepared for crowns, and in the same session, a digital impression was taken with the new Straumann Virtuo Vivo intra-oral scanner.

Using the Straumann CARES Visual software, all the posterior crowns were designed and then milled with the Straumann CARES C series chairside milling machine.

On the same day, after confirmation of fit, all crowns were placed and cemented. With the new vertical dimension, the mandibular premolars, canines and incisors were adjusted with IPS Empress Direct composite (Ivoclar Vivadent).

After a further intra-oral scan, a new smile was designed using Straumann CARES Visual. A 3D model printed with the Straumann P30 3D printer was used for the digital wax-up. Photographs were taken to register all the details needed for the final design of the restorations.

At the next appointment, the patient came to the clinic early in the morning. All the old crowns were removed, and teeth #24, 25 and 34 were prepared for crowns. Intra-oral data was acquired with Virtuo Vivo, and a photograph of the patient’s face was taken.

STL files of the digital wax-up and prepared teeth and the patient’s photograph were uploaded to Straumann CARES Visual, and the crowns were designed. After 25 minutes, all the crown designs were sent for milling with the C series milling machine. On completion of the milling process, all the crowns were placed for a final fit check (Figs. 9–13).
The fit was confirmed, and only minor adjustments were needed at the contact points. The crowns were removed from the patient’s mouth and polished by hand using OptraFine (Ivoclar Vivadent; Figs. 14 & 15). All the crowns were cemented using IPS Ceramic Etching Gel (Ivoclar Vivadent) according to the Ivoclar Multilink protocol (Figs. 16–21).

Treatment outcome

The patient was very happy with the functional and aesthetic result, as well as the short treatment period. She finally received her new smile in a much shorter time than expected, and this was a key driver in her decision to accept our treatment plan.

about

Dr Gustavo Harfagar graduated with a BSc from the University of Chile in Santiago and then went to dental school at Universidad Mayor, also in Santiago. He completed his studies in implantology at the same university. For ten years, he was an assistant professor in the department of prosthetics at the school of dental medicine of Universidad del Desarrollo in Santiago, Chile and a visiting professor at the postgraduate school at the same university. In 2016, he attended the ITI Education Week at Harvard School of Dental Medicine and Tufts University, both in Boston in the US. He returned to Harvard School of Dental Medicine for a continuing education course on digital restorative dentistry in 2017. In the same year, he was named director of the digital restorative dentistry programme at Universidad del Desarrollo. He gives lectures on digital dental technologies both nationally and internationally. Dr Harfagar has his own practice and twelve years of experience working in aesthetic and implant dentistry.