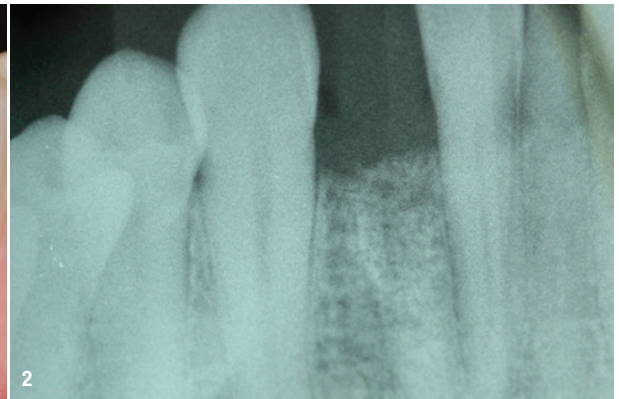


Restorative simplicity for a challenging case with limited space

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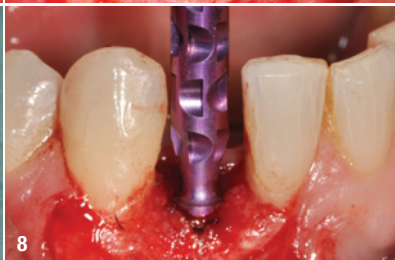
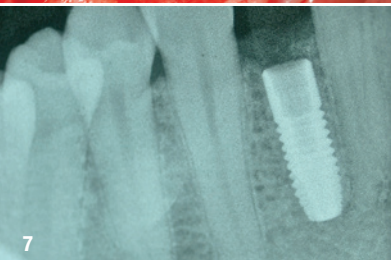
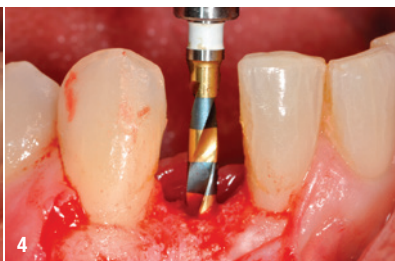
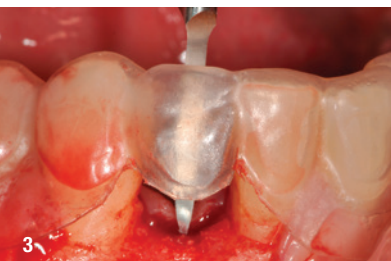
Initial situation and treatment planning

A 40-year-old male patient with a missing mandibular right lateral incisor and grafted area requested restoration with a dental implant. The challenge with this type of restoration is the limited space available and the proximity of the adjacent teeth. The clinical evaluation revealed the limited space (Fig. 1), and the periapical radiograph taken before the treatment showed both the grafted area into the bone and the limited space (Fig. 2). The treatment plan involved conventional implant placement using an OsseoSpeed EV implant (Dentsply Sirona) and immediate provisionalisation using a Temporary Abutment EV (Dentsply Sirona), and for the definitive restoration, an Atlantis

Crown Abutment (Dentsply Sirona) was planned to be used to restore the appearance and function of the missing tooth.

Implant placement

In the first step of implant placement, the biological aspects according to the 3A-2B rule were evaluated using a surgical guide (Fig. 3). The first drilling position was marked to obtain 2B and to create the osteotomy angulation using the Precision Drill EV (Dentsply Sirona). The angulation was confirmed and the implant depth of the osteotomy was prepared with the Twist Drill EV (Dentsply Sirona; Fig. 4). The depth of the osteotomy was verified using the Implant Depth Gauge





EV (Dentsply Sirona; Fig. 5). Implant placement was then performed with an OsseoSpeed EV 3.6 implant of 11 mm in length (Fig. 6). The remaining interproximal bone was expected to provide support for the interproximal papillae. The periapical radiograph taken immediately after implant insertion confirmed that the implant had no contact with the adjacent roots (Fig. 7). Thereafter, an implant-level impression was taken using the Implant Pick-up Design EV (Dentsply Sirona), a self-guiding impression component that engages into the implant, in order to obtain the information regarding the implant's position (Fig. 8). The Temporary Abutment EV was modified in the shoulder area to avoid contact with the interproximal bone and to allow for a correct fit (Fig. 9). Using a dental dam, the immediate temporary restoration was fixed with acrylic resin (Fig. 10). After fixation, it was removed, finished, polished and repositioned with finger-light force.

Definitive prosthetic restoration

The patient was called in for an appointment one week after surgery. At that point, the fit of the temporary restoration was considered satisfactory (Fig. 11). Figure 12 shows the digital planning for the Atlantis Crown Abutment in zirconia with correct space for ceramic layers. The definitive restoration was produced in the dental laboratory with a view to creating harmony with the adjacent teeth (Fig. 13). Space for the interproximal papillae was created. The screw-retained abutment with lingual access can be seen in Figure 14. The provisional restoration was replaced with the definitive one (Fig. 15). The subgingival portion of the abutment provided soft-tissue support, and space for the interproximal papillae was created. The Atlantis Crown Abutment was torqued to 25Ncm (Fig. 16). The lingual screw access hole was first covered with filling material (PTFE) and after that with

a composite. Afterwards, another radiograph was taken of the implant with the definitive Atlantis Crown Abutment in place (Fig. 17). In Figure 18, the final outcome with the definitive restoration can be seen, showing the correct soft-tissue contour and the filling of the interproximal space. Also, the ceramic perfectly mimicked the colour of the adjacent teeth.

about the author



Fernando Rojas-Vizcaya, DDS, MS, graduated from the University of North Carolina at Chapel Hill, USA, where he completed a three-year postgraduate qualification in prosthodontics and a one-year scientific research fellowship in dental implants in the prosthodontics programme. He currently collaborates with the university as an assistant professor.

He also studied oral medicine and oral implantology at the Complutense University of Madrid in Spain and completed a programme in oral surgery at the Gregorio Marañón university hospital in Madrid. His research is focused on the development of protocols in oral implantology, complete rehabilitation and virtual treatment using new digital technologies. He maintains a private practice limited to prosthodontics and dental implant treatment in Castellon in Spain.

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