A nine-year follow-up case report

Long-term success of implant-supported rehabilitation in the aesthetic zone

Dres Léon Pariente and Karim Dada, France

Dental implants have revolutionised the field of restorative dentistry, offering reliable solutions for replacing missing teeth. The success of dental implant treatment relies on meticulous treatment planning, precise surgical techniques, and appropriate follow-up care. In the aesthetic zone, where patient satisfaction is closely tied to the appearance of the restoration, achieving optimal outcomes becomes even more critical.

A determinant of long-term implant success also lies in the selection of an appropriate implant system. Straumann® BLT implants, characterised by their proprietary Roxolid® material and SLActive® surface, have garnered considerable attention for their osseointegration potential and stability.[1,2] These implants mimic a dental root shape, as they have a smaller diameter at the apical part than at the neck of the implant. The claimed benefits of this design include enhancement of the primary stability by the pressure of the cortical bone on regions with poor bone quality, as well as the reduced risk of bone perforation due to its macrotopography.[3]

This case report presents the nine-year follow-up of two Straumann® BLT implants placed in the aesthetic zone, focusing on their clinical performance, peri-implant tissue health, and patient satisfaction. By examining the longevity and aesthetic outcomes, this report highlights the importance of careful treatment planning and execution in achieving predictable outcomes.

Initial situation

A 56-year-old female patient, non-smoker, classified as healthy (ASA I), with no current medications or known allergies, visited our clinic with a chief complaint centered around her persistent dissatisfaction with her smile. She reported the development of a chronic infection in her front teeth over recent years, leading to noticeable mobility. This dental concern has significantly affected her ability to eat and speak with confidence. The patient







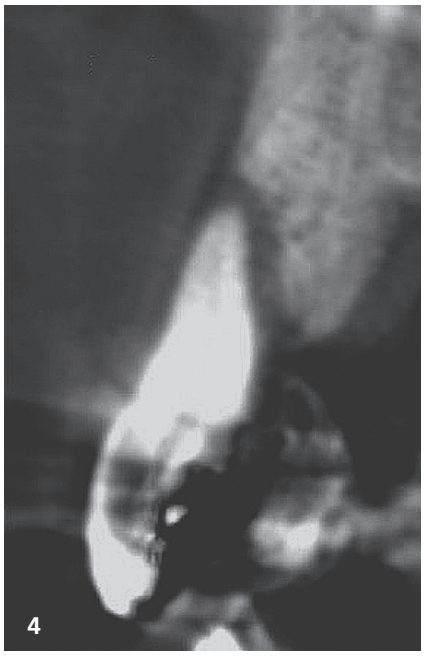


Fig. 1: The patient's extra-oral examination revealed a medium smile line. – **Fig. 2:** Misalignment observed in the maxillary front teeth. – **Fig. 3:** Intra-oral examination shows periodontal attachment loss and mobility in the upper left central incisor and lateral incisors. – **Fig. 4:** CBCT scan reveals the absence of buccal bone.

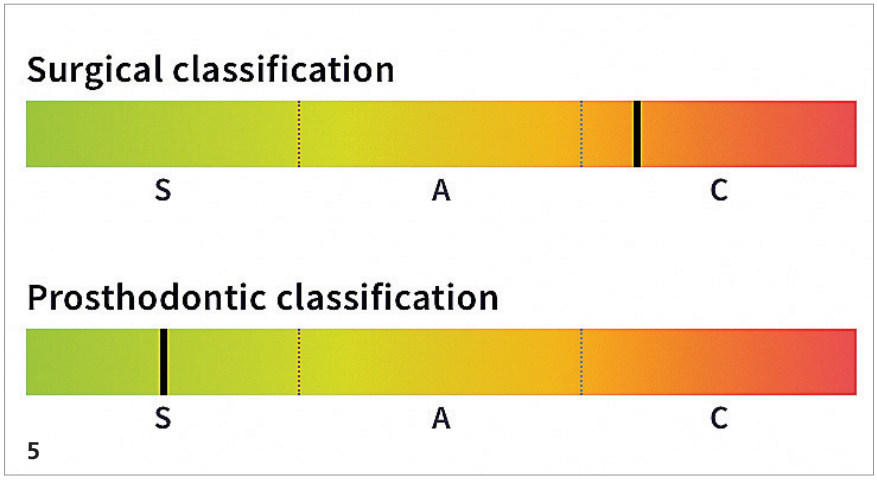


Fig. 5: Based on SAC classification, the patient was classified as surgically complex and prosthetically straightforward.

was actively seeking a long-term solution but expressed concerns about potential pain during the treatment process.

The patient's extra-oral examination revealed a medium smile line and misalignment of the front teeth (Figs. 1+2).

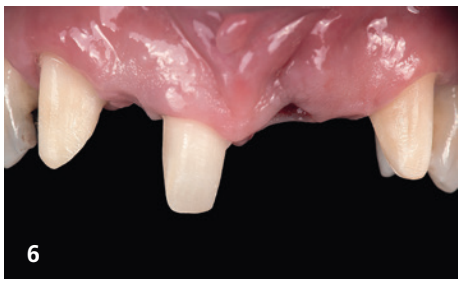
During the intra-oral examination, advanced periodontal insertion loss and mobility were noted in teeth #12, #21, and #22 (Fig. 3). Cone-beam computed tomography (CBCT) imaging indicated the absence of buccal bone on tooth #21 (Fig. 4).

According to the SAC classification, the patient was classified surgically as complex and prosthetically as straightforward (Fig. 5).

Treatment planning

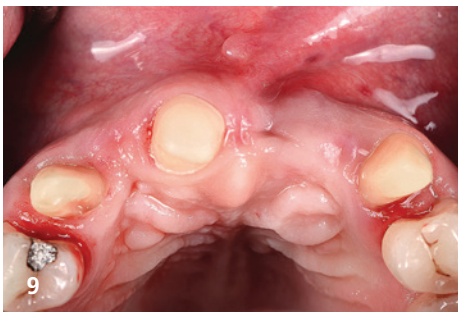
Taking into consideration the patient's needs and desires, the following treatment plan was chosen:

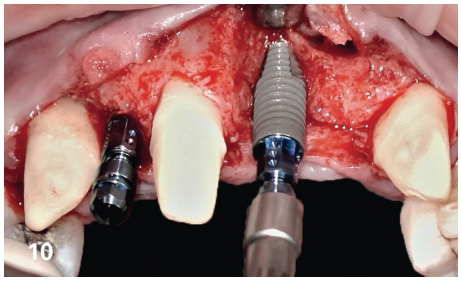
1. Atraumatic extractions of teeth #12, #21 and #22 with alveolar curettage.
2. Dental preparations on teeth #13, #11 and #23.
3. Temporary resin-based bridge on teeth #13-23.
4. Placement of Straumann® Roxolid BLT 3.3 mm implant on position #12 and Straumann® Roxolid® SLActive® BLT 4.1 mm on position #21.
5. Simultaneous minor bone augmentation with Straumann® XenoGraft and a collagen membrane.
6. Immediate loading of implant #12 and delayed loading of implant #21.
7. Papilla conformation with a temporary ovate pontic on ridge position #22.
8. Final screw-retained crown delivery on implants #12, #21 and #22.











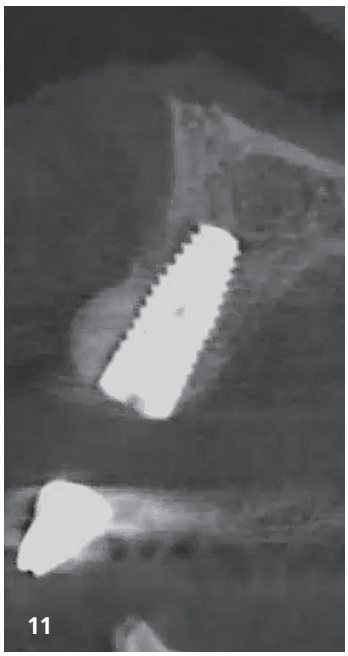
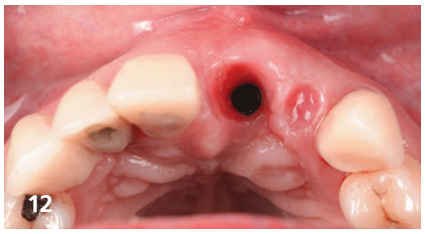


Fig. 6: Extraction of the upper left central incisor and lateral incisors, followed by the preparation of upper right central incisor and canines. – **Fig. 7:** Placement of a temporary resin-based bridge. – **Fig. 8:** Post-healing, horizontal and vertical ridge deficiencies observed at the site of #21. – **Fig. 9:** Six weeks after dental extractions, the patient exhibited uneventful wound healing. – **Fig. 10:** Placement of Straumann® Roxolid® SLActive® BLT Ø 3.3 mm implant at site #12, and a BLT Ø 4.1 mm implant at site #21. – **Fig. 11:** At five months post-surgery, the radiographic control of implant #21 confirmed proper positioning and implant integrity.







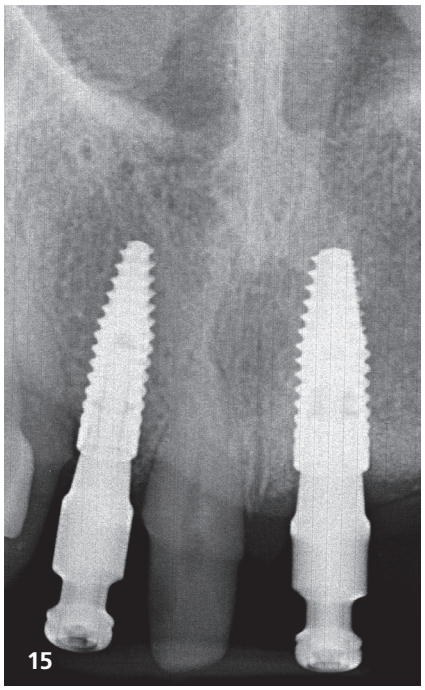


Fig. 12: Successful soft-tissue healing observed at the seven-month follow-up. – **Fig. 13:** Placement of the final restorations. – **Fig. 14:** The aesthetically pleasing appearance of the final crowns. – **Fig. 15:** Radiographic assessment at the time of final impression confirmed precise implant placement and verified bone structure integrity.

Surgical procedure

Local anaesthesia with lidocaine 2% with epinephrine 1:100,000, was administered. This was followed by atraumatic extractions of teeth #12, #21, and #22, with alveolar curettage. Additionally, dental preparations on teeth #13, #11, and #23 were carried out (Fig. 6).

A temporary resin-based bridge was placed in the second sextant (Fig. 7). Following wound healing, horizontal and vertical deficiencies were observed at ridge position #21 (Fig. 8).

At the six-week follow-up post dental extractions, the patient presented with uneventful wound healing (Fig. 9). A mucoperiosteal flap, with a crestal incision, was raised to facilitate implant placement. The Straumann® Surgical Cassette was employed to prepare the implant bed. Subsequently, a Straumann® Roxolid® SLActive® BLT 3.3 mm implant was positioned at site #12, and a Straumann® Roxolid® SLActive® BLT 4.1 mm implant was placed at position #21 (Fig. 10). The implants were positioned using the handpiece in a clockwise direction with a speed of 15 rpm and torqued to 35 Ncm. Simultaneously, bone augmentation was carried out at position #21 to enhance the structural integrity of the implant site.

A radiographic control was conducted on implant #21, five months post implant surgery, to assess the progress and ensure the integrity of the implant in its position (Fig. 11).

Prosthetic procedure

Soft-tissue conformation was evaluated seven months after the delayed loading of implant #21, with the aim to assess the maturation and adaptation of the surrounding soft tissues to the implant site (Fig. 12).

After the successful healing and osseointegration of both implants, the final restorations were placed on the implants, and the screws were tightened within the

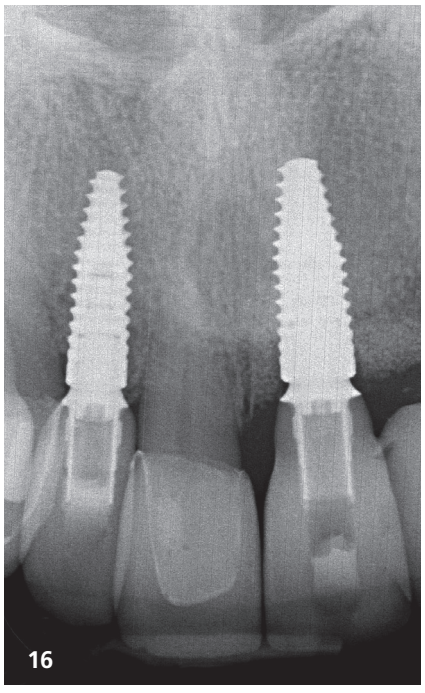






Fig. 16: A follow-up radiographic evaluation assessed the long-term stability and health of the implant sites. – **Fig. 17:** Six-year follow-up showing favourable aesthetic results. – **Fig. 18:** Six-year follow-up demonstrating a satisfactory clinical outcome.



Fig. 19: Nine-year follow-up revealing successful results, with healthy soft and hard tissues maintained.

range of 15 to 35 Ncm revealing a natural and aesthetically pleasing appearance of the final crowns (Figs. 13+14).

Oral hygiene instructions were provided, and occlusion was checked. Recall appointments were efficiently scheduled to ensure ongoing monitoring and maintenance of the achieved oral health.

Treatment outcomes

Radiographic control was conducted at the time of the final impression to ensure an accurate assessment of the implant placement and surrounding structures (Fig. 15). Additionally, a follow-up radiographic evaluation was performed six years after the completion of the treatment to monitor the long-term stability and health of the treated area (Fig. 16).

At the six-year (Figs. 17+18) and nine-year (Fig. 19) follow-ups, comprehensive clinical and radiographic assessments underscored favourable outcomes, including osseointegration, the maintenance of bone density around the implants, and pleasing aesthetics. These findings collectively indicated the success of the long-term treatment.

The treatment journey has resulted in exceptional health outcomes for both hard and soft tissues. The patient expressed her gratitude to the team, who meticulously managed each phase of the treatment.

The effectiveness of the maintenance programme has been fundamental in preserving the achieved results over time. The patient reported enhanced functionality, enabling proper eating and confident speech. Furthermore, the realisation of the "dream smile" stands as a testimony to the comprehensive and successful nature of the provided care.

Authors' testimonial

In our daily practice, Straumann® BLT implants have consistently delivered predictable results, particularly in the aesthetic zone. We ensure seamless integration and long-term patient satisfaction through meticulous treatment planning and interdisciplinary collaboration.

Dr Karim Dada

Dr Léon Pariente

References

Contact address

Cabinet dentaire Paris-Invalides
Paris, France
62LTM@orange.fr
www.dr-dada-karim.chirurgiens-dentistes.fr



Dr Karim Dada, DDS, MS has a private practice in Paris focusing on perio-plastic surgery and implant dentistry. He graduated with a degree in dental surgery and post-graduate certificates in implant prosthodontics and implant surgery from the Paris Descartes University. He was recognised in 2005 by the Académie Nationale de Chirurgie Dentaire for his work in providing implant treatment to patients with head and neck cancer who are undergoing radiotherapy.



Dr Léon Pariente, DDS has a private practice specialised in Implantology and Periodontology in Paris. He graduated of the Paris Descartes University and absolved in 2012 an advanced programme in implant dentistry at the New York University College of Dentistry. He has several research projects at the Prosthetic and Implant Department of the Paris Descartes University.