GIULIANO FRAGOLA ARNAU AND JAVIER PÉREZ LÓPEZ
Repositioning of an upper right lateral incisor using the Straumann® Standard Plus Narrow Neck CrossFit® Implant

Background
Male patient, age 46, showed a missing upper right lateral incisor (#12) at the consultation and requested a fixed, esthetic restoration. The patient wore a Maryland bridge which repeatedly debonded due to a crossbite, making it uncomfortable to wear (Figs. 1, 2). He brought a few older periapical and panoramic X-rays in which the presence of a non-restorable root remnant could be observed. The patient reported that the tooth had been extracted previously due to the fracture of a post and core. After extraction, an implant was inserted immediately. This implant failed during the period of osseointegration and had to be removed (Figs. 3, 4).

Diagnosis
The patient did not have any systemic diseases, was an occasional smoker and had good periodontal health; an anterior crossbite was observed, leading us to believe that these teeth were subjected to a visible occlusal load. This would explain the frequent debonding of the Maryland bridge. Clinical and radiological examinations were carried out and no gingival or bone alterations were observed in the remaining teeth.

Treatment plan
The plan was to place a small-diameter Straumann® Standard Plus Roxolid® Narrow Neck CrossFit Implant [NNC, Ø 3.3 mm,
10 mm SLActive®] with a screw-retained Straumann® NNC Gold Abutment. The patient’s Maryland bridge was used as a temporary restoration until full osseointegration was achieved. In a second step, a screw-retained provisional was made in order to create the emergence profile before the final restoration was placed.

**Surgical procedure**

The NNC implant was positioned with a full thickness flap that included the adjacent teeth, without vertical releasing incisions. A wide bone crest was observed without hollows in the vestibular area but with a narrow mesiodistal space. The coronal area of the bone was carefully drilled and prepared for...
placing the implant in the bone. The shoulder of the smooth neck was positioned 2 mm from the amelocemental junction of the neighboring teeth, leaving it in the supracrestal position (Figs. 5 – 9).

A 1.5 mm-high NNC closure screw was placed, and the site was closed by suturing with simple 4/0 stitches. The patient’s Maryland bridge was cemented to provide a provisional prosthesis (Figs. 10*, 11).

After four weeks, we examined the patient and the 1.5 mm NNC closure screw was replaced by a 3.0 mm NNC Healing Cap. Perfect integration of the soft and hard tissue was observed (Fig. 12 – 13*).

Restoration procedure
Impressions were taken seven days later to produce a working model and make a temporary screw-retained crown with the NNC post for temporary restorations which would be in place for two weeks (Figs. 14 – 19). Next, the final crown was made using a Straumann® Customized NNC Gold Abutment for crowns. A metal test was carried out to check the correct fit before completing the veneering of the final restoration. The final step was to insert the screw with 35 Ncm and check the occlusion (Figs. 20 – 23).

Outcome and conclusions
Using small-diameter NNC implants offers a predictable restoration of small interdental spaces. The smooth neck ensures...
the restoration is reliable in terms of soft tissue healing; the Roxolid® alloy and SLActive® surface treatment give us the necessary performance in terms of strength\(^2\) and osseointegration\(^1\).

NNC implants present a clear case demonstrating technological innovation for the benefit of our patients. We are able to achieve good results without having to perform additional procedures involving bone or soft tissue grafts. The esthetic advantages are obvious: rapid soft and hard tissue integration. In this case, the number of procedures for the patient was minimized, making it possible to reduce overall treatment time and achieve a stable, predictable treatment outcome in six to seven weeks.

References: \(^1\) The complete list of scientific references is available in PDF format and can be downloaded from the Straumann website: www.straumann.com/ST311REF.pdf
\(^2\) The closure screws and healing caps used in this case report are yellow color-coded – the final market versions of these components will be colorless (titanium).