

IMMEDIATE TEMPORIZATION AFTER IMMEDIATE IMPLANTATION COMBINED WITH A GBR PROCEDURE

PAOLO CASENTINI

Patient history

A 52-year-old Caucasian woman, non-smoker in good general health, was referred for teeth mobility and pain in the anterior mandibula. The patient reported that the same teeth had been previously prosthetically treated and endodontic surgery had been performed twice to treat a recurrent infection in the same area.

Clinical examination revealed a degree I or II mobility of teeth 42, 41, 31, 32, 33 that previously received single metal-ceramic crowns. Tooth 31 was restored with a temporary resin crown. Tooth 43 was splinted to a distally extended bridge and affected by a lack of keratinized tissue. A fistula without suppuration was present buccally between teeth 31 and 32 (Fig. 1).

Radiographic examination revealed aggressive apical resection of teeth 43, 41, 31, 32, 33 and the presence of periapical radiolucency affecting all the roots (Fig. 2).

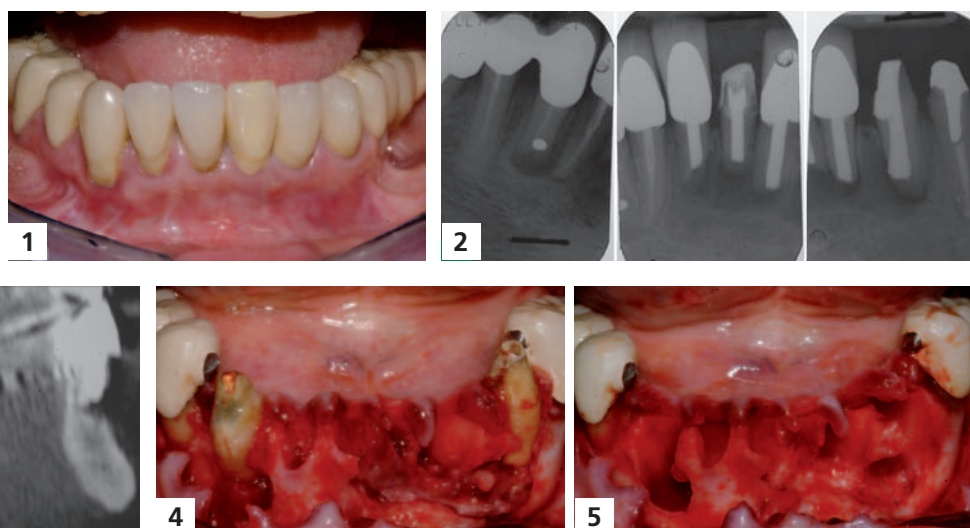
The patient's plaque control was considered adequate and no

periodontal disease or occlusal problems were diagnosed. The inter-maxillary relationships were normal.

Treatment planning

Teeth 43, 41, 31, 32 and 33 were considered hopeless and implant therapy was chosen to treat this area. The patient underwent Computerized Tomography to evaluate the morphology of the residual bone in the region. The CT scan revealed the loss of the buccal plate and a considerable amount of dense bone apically to the root sockets (Fig. 3).

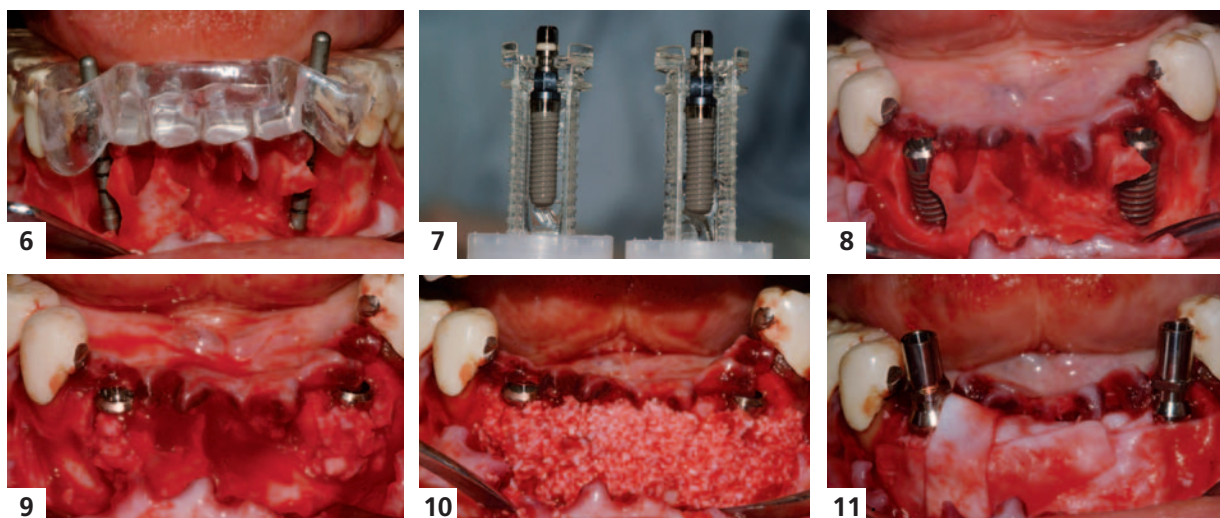
Extraction of the residual roots and immediate placement of two Straumann® Tapered Effect implants was planned. An immediate implant-supported temporary restoration was planned in case of sufficient primary stability of the implant.



Dr Paolo Casentini Milan, Italy

E-mail: paolocasentini@fastwebnet.it

Teacher of the Post-Graduate Courses in Oral Implantology and Oral Surgery at the University of Milan. Private practice in Milan, specialized in Implant Dentistry and Oral Surgery.



Surgical procedure

The flap was elevated and all inflammatory tissue was removed revealing large fenestrations of the buccal cortical plate as expected from the CT scan (Figs. 4–5).

The implant bed preparation was carried out in the sockets of the former canines. The surgery was prosthetically driven and a surgical stent was employed (Fig. 6).

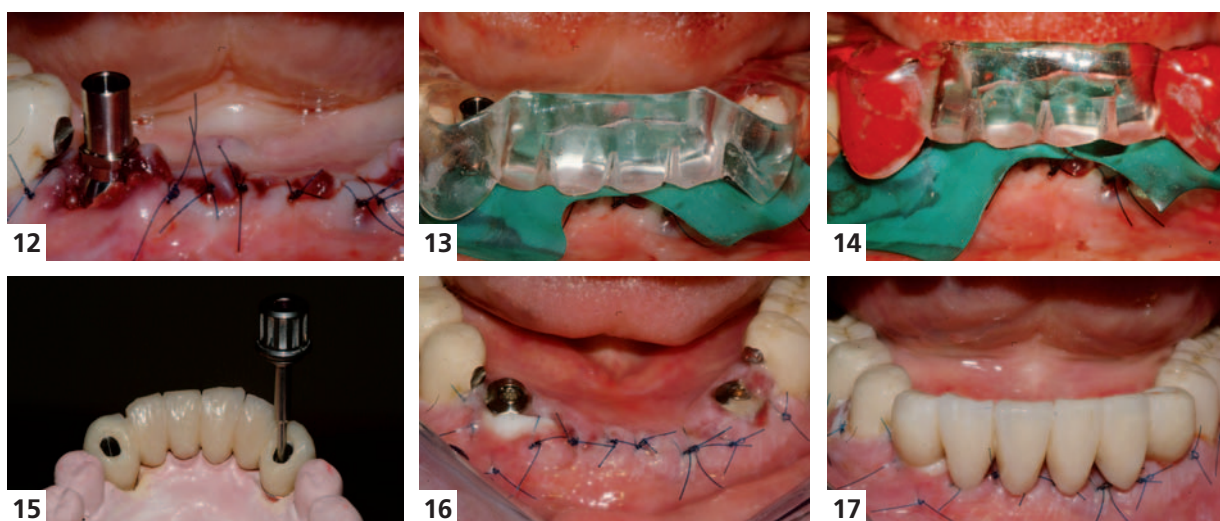
Two Straumann® Tapered Effect implants (Ø 4.1mm, 14mm, SLActive) were placed in the pre-pared canine alveolar sockets (Figs. 7–8). Both implants reached an insertion torque higher than 35N/cm. Because of its osteocon-ductive properties, the Straumann® SLActive surface was chosen to speed up the osseointegration process. Despite large buccal fen-estration

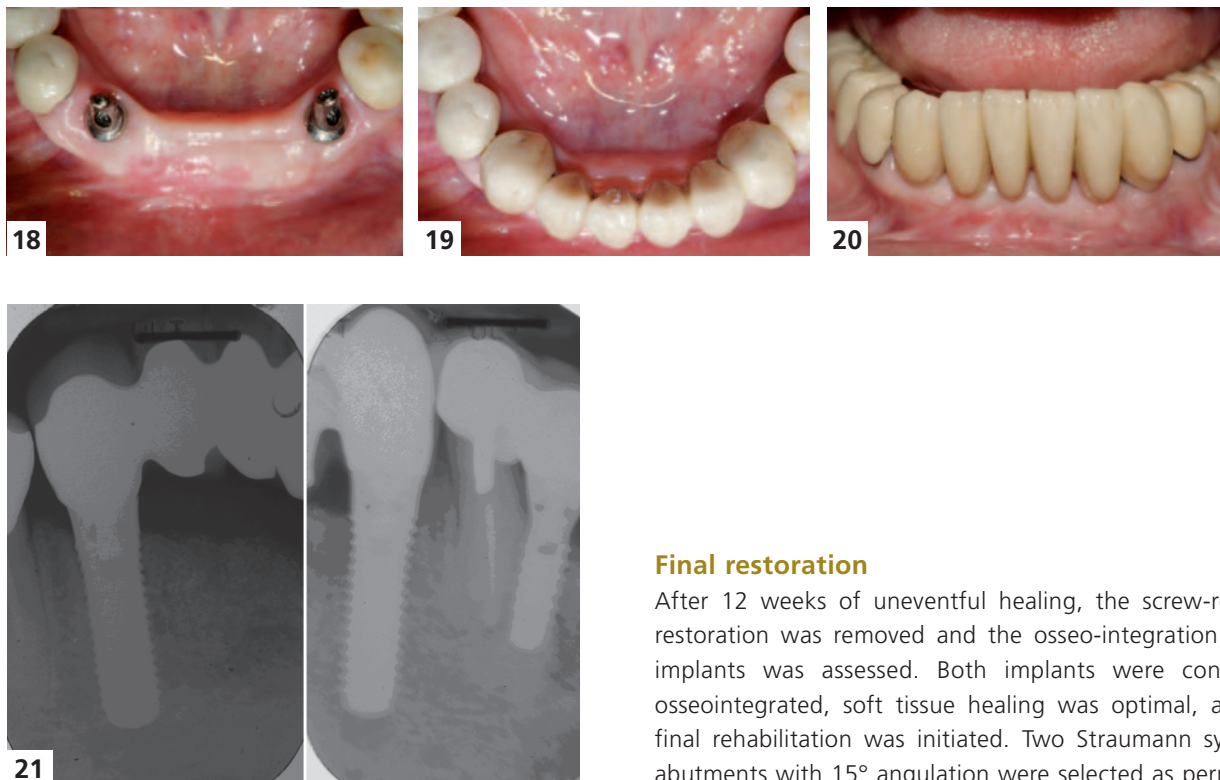
both implants reached optimal primary stability since the apical half of each implant was anchored in very dense bone. In addition, the implants were in contact with the lingual, mesial and distal walls of the sockets.

A Guided Bone Regeneration pro-cedure was performed to treat the buccal fenestrations. The exposed implant surface was covered with autogenous bone chips harvested from the adjacent sockets (Fig. 9).

The particulate bone graft containing autogenous bone chips was finally covered with a layer of bone substitute material that was also used to fill the harvest area (Fig. 10).

The augmented area was covered with a double layer of a resorbable collagen membrane (Fig. 11).





A tension-free suture with a 5-0 polyamide was created after inci-sion of the periostium at the basal level of the flap (Fig. 12).

Indexing of the implant position

Since primary stability of the implants was evaluated sufficient, the indexing of the implant positions could be performed to realise the planned immediate temporary restoration. Two titanium temporary abutments were screwed into the implants. The soft tissues were insulated with sterile rubber dam and the indexing of the implant positions was performed by fixing the abutments to the surgical stent using auto-poly-merizing resin (Figs. 13–14).

A connective tissue graft was then applied to site 43 to correct the lack of keratinized tissue. Finally, two 4.5 mm healing caps were screwed into the implants. Antibiotics and chlorhexidine mouth rins-es were prescribed to the patient.

Immediate temporary restoration

48 hours after the surgery a screw-retained temporary restoration was inserted (Figs. 15–17). Any contact with the opposite arch was carefully avoided and a soft diet for some weeks was suggested to the patient. The sutures were removed after 10 days.

Final restoration

After 12 weeks of uneventful healing, the screw-retained restoration was removed and the osseo-integration of the implants was assessed. Both implants were considered osseointegrated, soft tissue healing was optimal, and the final rehabilitation was initiated. Two Straumann synOcta® abutments with 15° angulation were selected as permanent abutments for a six-unit cemented bridge. The final aspect of the restoration before and after cementation can be seen in the pictures 18–20.

The 12 months radiographic follow-up shows stable peri-implant bone level and absence of radiolucency (Fig. 21).

Conclusion

Faster osseointegration and osteo-conductive properties make implants with a modified Straumann SLA® surface particularly suitable for indications involving bone defects and/or early loading protocols. In general terms, immediate temporization of implants improves patients' quality of life by avoiding temporary removable solutions, but it cannot be considered a standard procedure – especially if performed in combination with immediate implantation, bone defects and GBR procedures. For this reason the presented case has to be considered an “extreme” case and the application of the same procedure in similar cases should be considered with extreme caution. In the reported case, despite the presence of bone defects, an immediate temporary restoration without loading was performed because primary implant stability was considered optimal. The characteristics of the Straumann® SLActive surface seem to be promising in reducing the risks of implant failure, especially in stability-critical and early loading cases.