Straumann® BoneCeramic / Straumann® MembraGel ®

Treatment of a dehiscence-type defect around a dental implant

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Case description

The patient (female, 59 years, non-smoker, general good health conditions) presented purulent pulpitis at tooth #46. As endodontical treatment did not succeed in improving her symptoms it was decided to extract tooth #46 and place an implant in combination with a guided bone regeneration procedure in a submerged healing approach after the site has healed. The bone defect after tooth removal at site #46 was obvious in the radiograph as well as during visual inspection **(Figs. 1–3)**.

Surgical procedure

Treatment planning. Preoperatively, antibiotics were given (Penicillin, 1.5 mg). The surgery was performed under local anesthesia (3.4 mL Articain + Epinephrin). In addition, an intraossary anesthesia was performed (Anesto, W&H).

The horizontal incision was performed mid-crestally, with one vertical releasing incision 1 tooth distant in the mesial aspect of region #46; care was taken that the flap was elevated sufficiently in all directions. To improve access to the implant site, the lingual flap was slightly elevated, approx. 3 mm **(Fig. 4)**. The implant (Straumann® Standard Plus ∅ 4,8 WN, 10 mm) was inserted according to the standard protocol. After the placement of the implant, a small dehiscence-type alveolar bone defect of approx. 4 mm was present. Small bleeding points were created in the cortical layer of the augmentation site to improve bone healing capability **(Fig. 5)**.

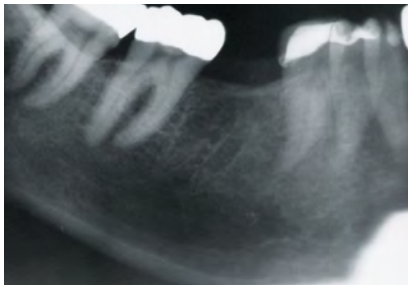

Fig. 1

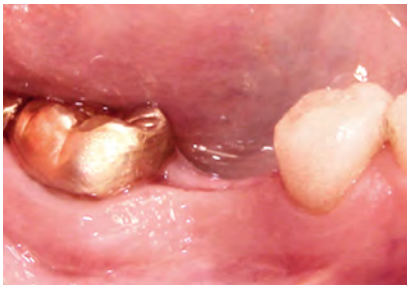

Fig. 2

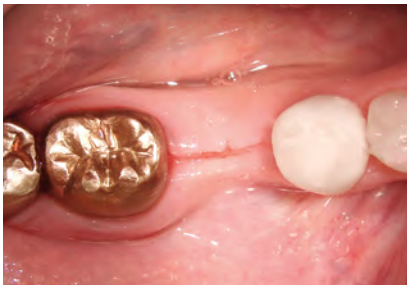

Fig. 3

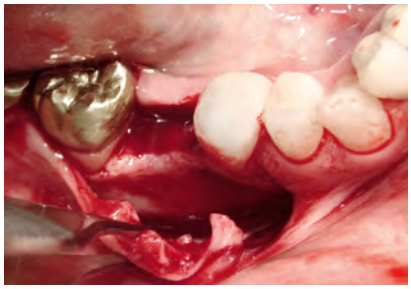

Fig. 4

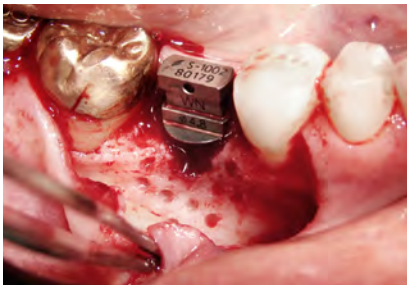

Fig. 5

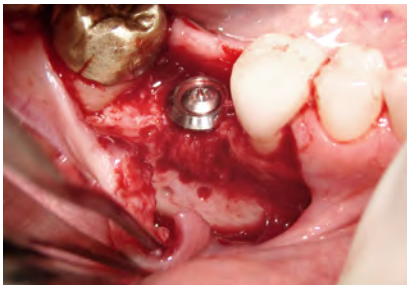

Fig. 6

Using the sandwich technique, the implant surface was augmented first with a layer of autogenous bone which was collected during careful implant site preparation. Straumann® BoneCeramic™, proven to be a slowly resorbable scaffold for bone regrowth, was added to the outer layer of the lateral defect. Prior to its application, Straumann BoneCeramic was slightly rehydrated in blood collected at the defect site. Overbuilding of the defect was avoided during augmentation procedure **(Figs. 6, 7)**. In order to optimize the attachment of Straumann® MembraGel to the recipient site, the host bone was carefully dried with a sterile gauze immediately before application.

Straumann® MembraGelwas applied to the defect site in a thin layer, outlining the bone substitute material with 1–1.5 mm in all dimensions. To avoid full coverage of the implant head with Straumann® MembraGel in the crestal aspect, the membrane surface was reduced carefully with a sharp scalpel **(Figs. 8, 9)**. Flap release for tension-free wound closure was achieved by means of periosteal releasing incision. Healing was attempted with the implant in a submerged position after tension-free closure of the released mucoperiosteal flap. The wound was closed with interrupted sutures (Gore-Tex® 0–5 RT16, **Fig. 10**).

Postoperative treatment and result. The patient was instructed to rinse 3–5 times daily with CHX (0.1%) and, for post-surgical pain, to use analgesics according to her individual need. Furthermore, antibiotics were prescribed for 5 days (Penicillin 1.5 Mega, 3×daily). The sutures were

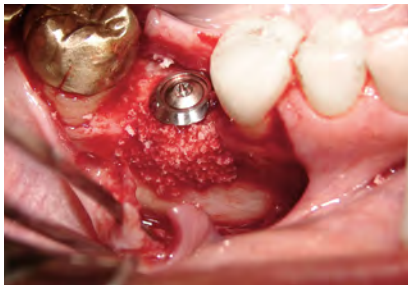

Fig. 7

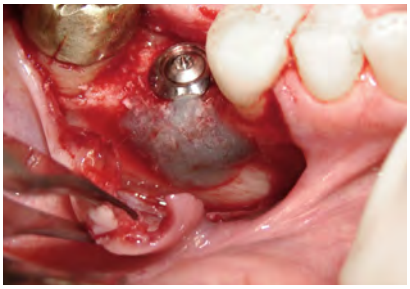

Fig. 8

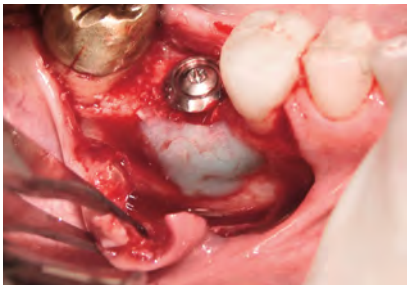

Fig. 9

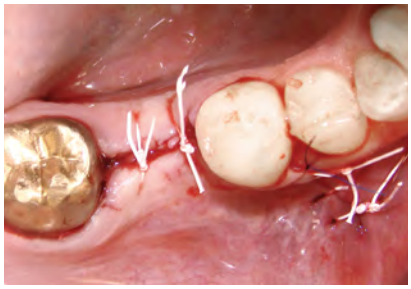

Fig. 10

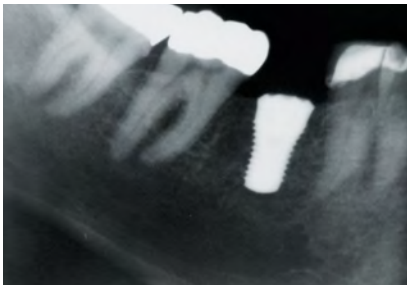

Fig. 11

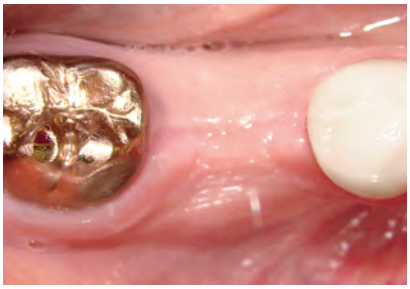

Fig. 12

removed 14 days after the implantation procedure. The overall healing period was uneventful. At time of healing cap insertion 6 months post-surgically clinical and radiological evaluation showed stable hard and soft tissue conditions **(Figs. 11–14)**. The final restoration by means of a full ceramic crown was completed 6 months later **(Figs. 15, 16)**. The patient presented a fully restored buccal profile.

Findings

It could be demonstrated that the employment of Straumann® MembraGel and Straumann® BoneCeramic can be very useful for lateral recontouring of this dehiscence type defect and, in this regard, this case report confirms the data* on the osteoconductive properties of Straumann® BoneCeramic.

▸ ***Scientific reference:*** *see www.straumann.com/stargetref*

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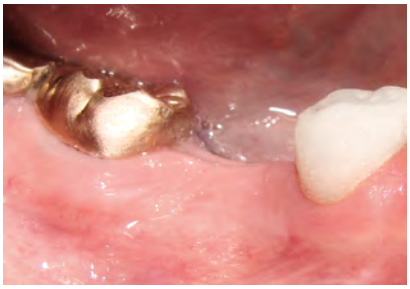

Fig. 13

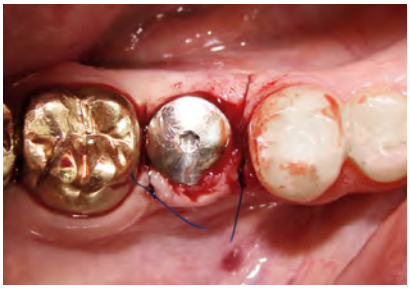

Fig. 14

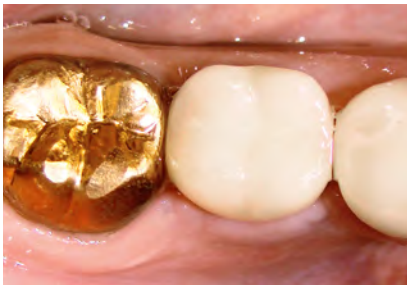

Fig. 15

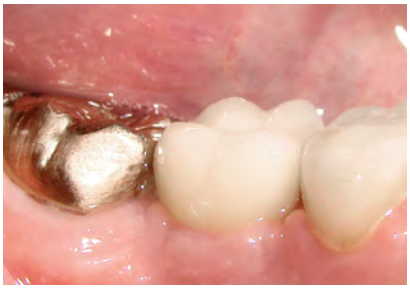

Fig. 16