

Screw-retained restoration of upper right first molar and second premolar

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In the following case report the intended screw-retained restorations was successfully achieved by using the DS OmniTaper Implant System to restore both the upper right first molar as well as the second premolar. This case report is published as an inspiration for clinicians or technicians, not necessarily as a recommendation from Dentsply Sirona.



Introduction

The 64-year-old female patient already had a heavily restored dentition. She had recently lost the upper right first molar and second premolar, leaving an unbounded edentulous area. An implant solution was provided using two individual screw-retained crowns supported by two OmniTaper EV implants (Dentsply Sirona) and using a digital workflow using Prime-scan and Atlantis.

The failing upper right second premolar and first molar had already been ex-

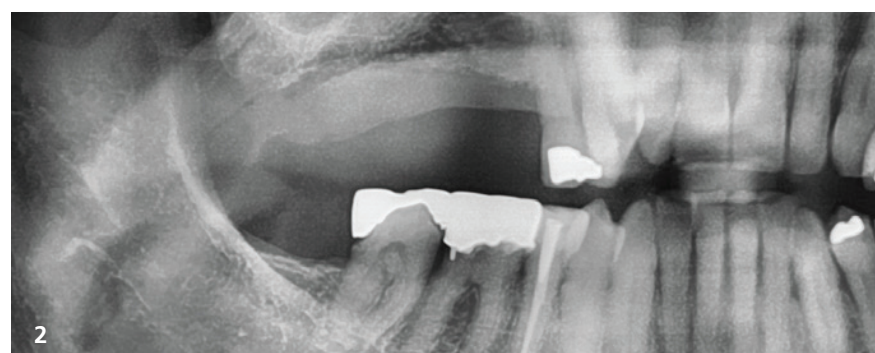


Fig. 1: The failing upper right second premolar and first molar extracted prior to implant treatment.

Fig. 2: Radiographic assessment: ample bone depth in posterior maxilla. **Fig. 3:** Full thickness envelope flap and Direction Indicators in situ. **Fig. 4:** Installation of an OmniTaper EV Ø 3.8 x 11 mm implant in tooth #4 (FDI 15) position using the TempBase Driver. **Fig. 5:** Both OmniTaper EV implants placed with the help of the pre-assembled TempBase abutments.

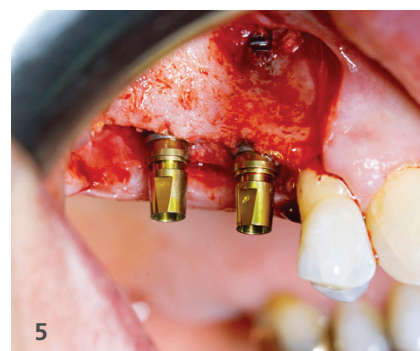
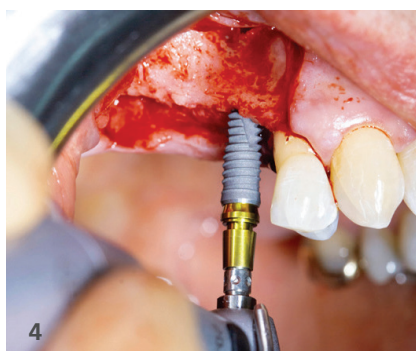




Fig. 6: Use of Dentsply Sirona disposable BoneTrap to augment the small bone fenestration.

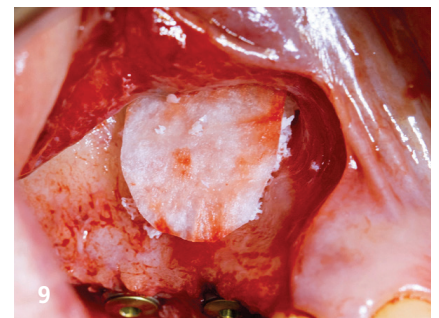
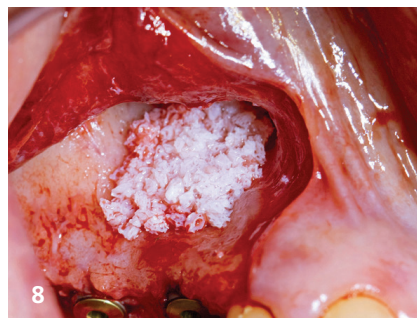
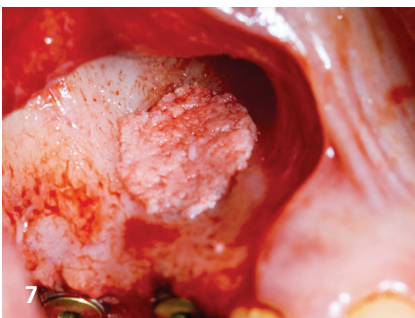


Fig. 7: Large quantity of autogenous bone collected from the BoneTrap. **Fig. 8:** Symbios Xenograft Granules layered over autogenous bone. **Fig. 9:** Symbios collagen membrane SR 15 x 20 trimmed to shape.

tracted by the patient's general dental practitioner prior to the planned implant treatment (Fig. 1). The radiographic assessment indicated that there was ample bone depth available in the posterior maxilla to allow for a satisfactory implant placement (Fig. 2).

Prosthetic procedure

After an initial preparation with an OmniTaper drill of 2.0 diameter a full thickness envelope flap was achieved, and direction indicators placed (Fig. 3). In the following an OmniTaper EV (Ø 3.8 x 11 mm)

implant was installed and nicely aligned in both tooth #4 (FDI 15) and #3 (FDI 16) positions using the TempBase Driver (Figs. 4 & 5) with the help of the pre-assembled TempBase abutments. The implant–abutment connection size was medium (M) as indicated by the yellow colour in Figure 5.

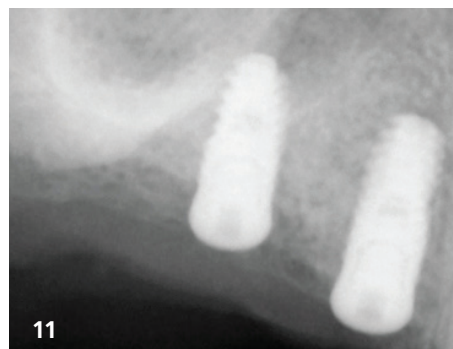
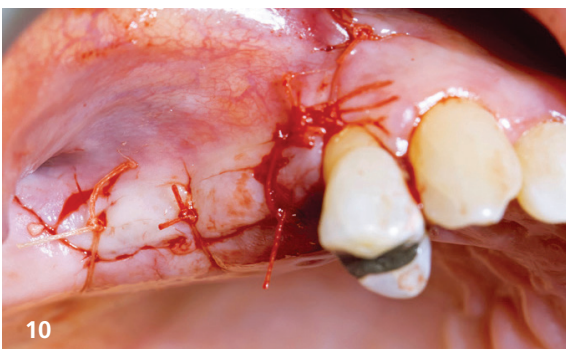


Fig. 10: Passive primary closure with PGA sutures. **Fig. 11:** Radiograph of implants postoperatively.

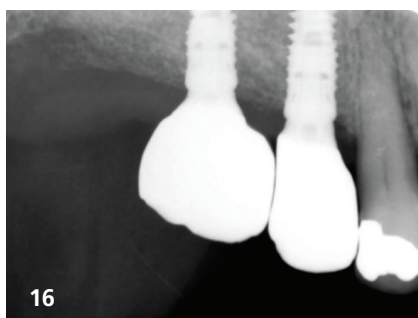
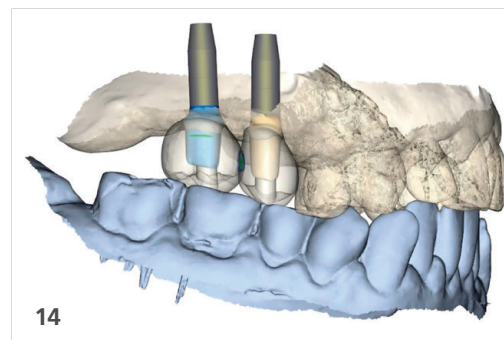


Fig. 12: Healing Abutment EV (M) placed after three months. **Fig. 13:** Atlantis IO FLO *in situ* ready for Primescan digital impression. **Fig. 14:** Design of Atlantis abutments and zirconia crowns. **Fig. 15:** Well-fitting screw-retained Atlantis CustomBase abutments and zirconia crowns. **Fig. 16:** Radiograph to verify correct seating of restorations. **Fig. 17:** Screw-access channels sealed and amalgam tooth position #5 (FDI 14) replaced with composite. **Fig. 18:** Final restorations completed.



The small bone fenestration was then augmented by using the Dentsply Sirona disposable BoneTrap (Fig. 6) and a large quantity of autogenous bone collected (Fig. 7).

In the next step Symbios Xenograft granules were layered over the autogenous bone and a Symbios collagen membrane (SR 15 x 20) was trimmed to shape to complete the guided bone regeneration procedure (Figs. 8 & 9). A passive primary closure was achieved with polyglycolic acid (PGA) sutures (Figs. 10 & 11).

Three months after the initial surgery healing abutments (M) were placed (Fig. 12). Next the Atlantis IO FLO were placed to complete the Primescan digital impression in order to achieve the planned

design of the Atlantis abutments and zirconia crowns (Figs. 13 & 14). A Radiograph to verify the correct seating of the restorations was taken following the process and showed well-fitting screw-retained Atlantis CustomBase abutments and zirconia crowns (Figs. 15 & 16). As no adjustments were necessary the screw-access channels could be sealed and the amalgam tooth position #5 (FDI 14) was replaced with composite (Figs. 17 & 18).



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