

One straight maxillary bridge prosthesis on three implants

A case report on Vario SR abutments

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_Introduction

- Fig. 1_Pre-op radiological exam: tomography.
- Fig. 2_Post-op clinical view.
- Fig. 3_Post-op radiological exam: periapical radiograph.
- Fig. 4_Clinical view after healing.

This clinical case report presents the fabrication of a straight maxillary bridge prosthesis on three implants. The prosthesis is screw retained on Vario SR abutments. The techniques are detailed step-by-step with additional practical advice.

_Case presentation

The 50-year-old patient was in very good health and an athlete. He had been wearing a removable partial denture for more than five years to compensate for maxillary right tooth loss when he came to us for the first time. His request was clear, "I don't want to have an appliance anymore."

He had set his goal more for functional than for cosmetic reasons. The existing prosthesis covering the sectors adjacent to the missing teeth was fully satisfactory to him both cosmetically and functionally. The edentulous space was large, and a bridge on the teeth would have led to short-term failure. The treatment plan was therefore straightforward: replace teeth #13, 14, 15 and 16 with a fixed prosthesis on implants.

Clinical evaluation of the case showed sufficient inter arch space, good occlusion, and a significant amount of attached gingiva. The mucogingival junction was located far away enough from the middle of the crest. The mesiodistal distance was insufficient to replace the four missing teeth. We opted to replace three teeth: one canine, one premolar and one molar.

The cone-beam tomography scan showed significant residual bone volume, which gave us the best conditions for implant insertion (Fig. 1). It was therefore not necessary to perform pre-implant surgery to augment hard or soft tissue.

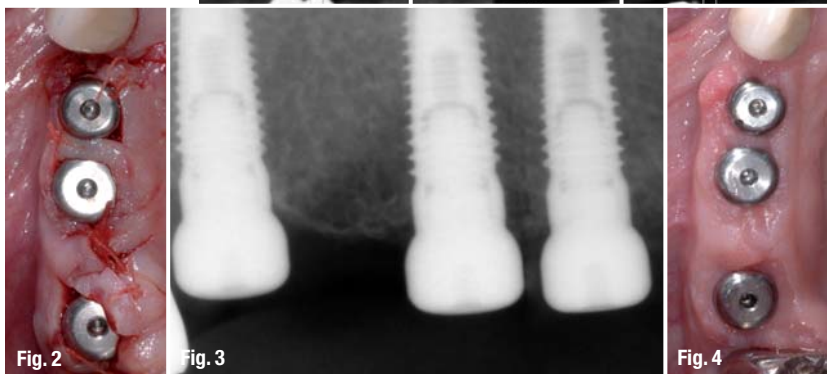
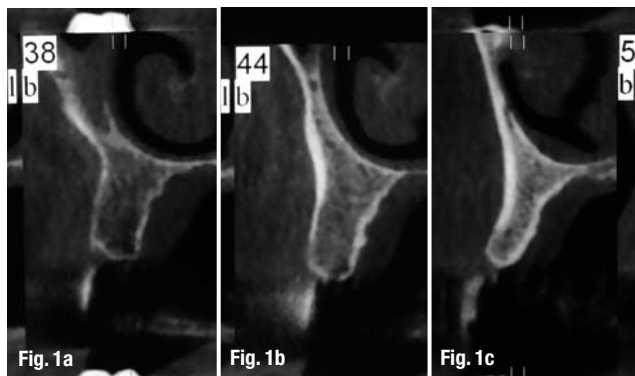




Fig. 5

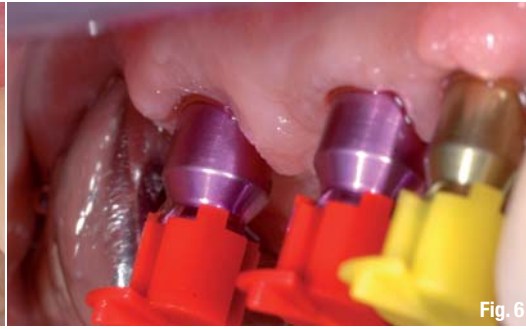


Fig. 6

Fig. 5_Clinical view after eight weeks (at the time of impression taking).

Fig. 6_Pop-in impression transfers in place.

_Treatment

The full-thickness flap with no incision for tension reduction was raised after placing the three implants (3.8 x 11 in position 13, 4.3 x 11 in positions 14 and 16) and their healing screws (wide body, 4 mm in length). The small pedicle flaps (using a technique derived from Palacci) provided for closure of the edges without tension, forming the future papillae (Figs. 2 & 3).

After the wounds had healed, irregular wounds were corrected by gingivoplasty with a cautery knife (Figs. 4 & 5). Closed-tray pop-in impression transfers were then applied, which are easier to use than open-tray transfers and are just as precise in the CAMLOG Implant System when the implants show little angulation towards each other (Fig. 6). With the impression transfers in place, the impression was taken (Fig. 7). Figure 8 shows the positive model

with artificial gingiva and a view of the parts used by the laboratory for fabricating the bridge.

Since the implants showed little divergence, straight Vario SR abutments were placed in the model (Fig. 9). Burn-out copings with no anti-rotation plane were then placed (Fig. 10) and fitted (Fig. 11). The next step entailed the placement of the wax model teeth on the copings (Fig. 12). The cast framework was then produced (Fig. 13) and checked on the model (Fig. 14). Figure 15 shows the rough framework.

After reviewing the gingival wells formed by the healing caps (Fig. 16), Vario SR prosthetic abutments were placed (Fig. 17). The gingival quality at this point promoted overall stability (Fig. 18).

Several X-rays were taken during the insertion of the abutment screws to check for complete passiv-

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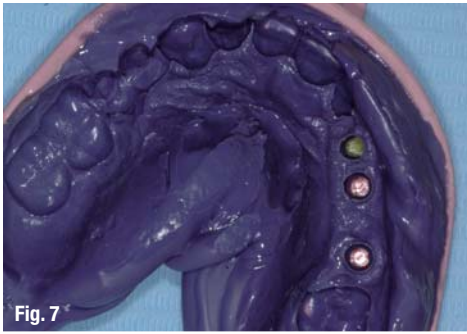


Fig. 7

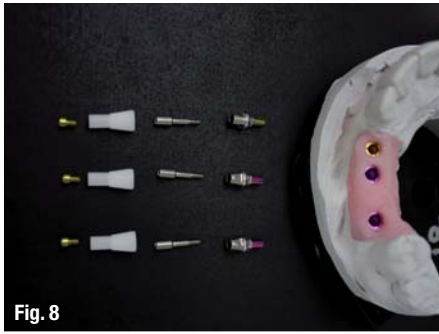


Fig. 8



Fig. 9

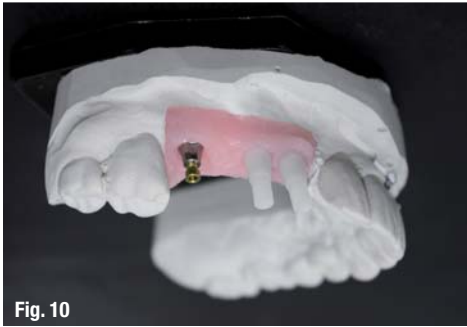


Fig. 10



Fig. 11



Fig. 12

Fig. 7_Impression (note that the coloured caps have been removed).

Fig. 8_Positive model.

Fig. 9_Vario SR abutments in place.

Fig. 10_Burn-out copings in place.

Fig. 11_Fitting of copings.

Fig. 12_Wax model.

Fig. 13_Cast framework.

Fig. 14_Checking the framework on the model.

Fig. 15_Rough framework.

Fig. 16_View of the gingival wells formed by the healing caps.

ity of the framework (Figs. 19 & 20). During the try-in of the bridge, there were slight gaps in the mesial implants (Fig. 21). These resulted from a contact point with tooth #13 that was too low. After some adjustments had been made, the gaps disappeared (Fig. 22). Figure 23 shows the occlusal view of the bridge during the try-in. The abutment screws were then tightened to 20 Ncm, and the prosthetic screws were tightened to 15 Ncm.

The occlusal access wells were filled with a cotton pellet and composite (Fig. 24). In spite of the resulting irregular and non-homogeneous appear-

ance, the patient was not bothered in the least by the cosmetic outcome. Figures 25a and b show the final result three months after the insertion of the prosthesis, with the cosmetic irregularities still visible from the palatal perspective. Note the final X-ray (Fig. 26).

_Discussion

The significant amount of attached gingiva and bone volume in this case allowed us to perform surgery with minimal detachment of soft tissue. With the raising of the flaps, we did not have to work



Fig. 13

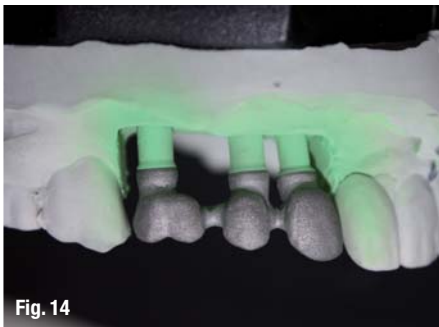


Fig. 14



Fig. 15



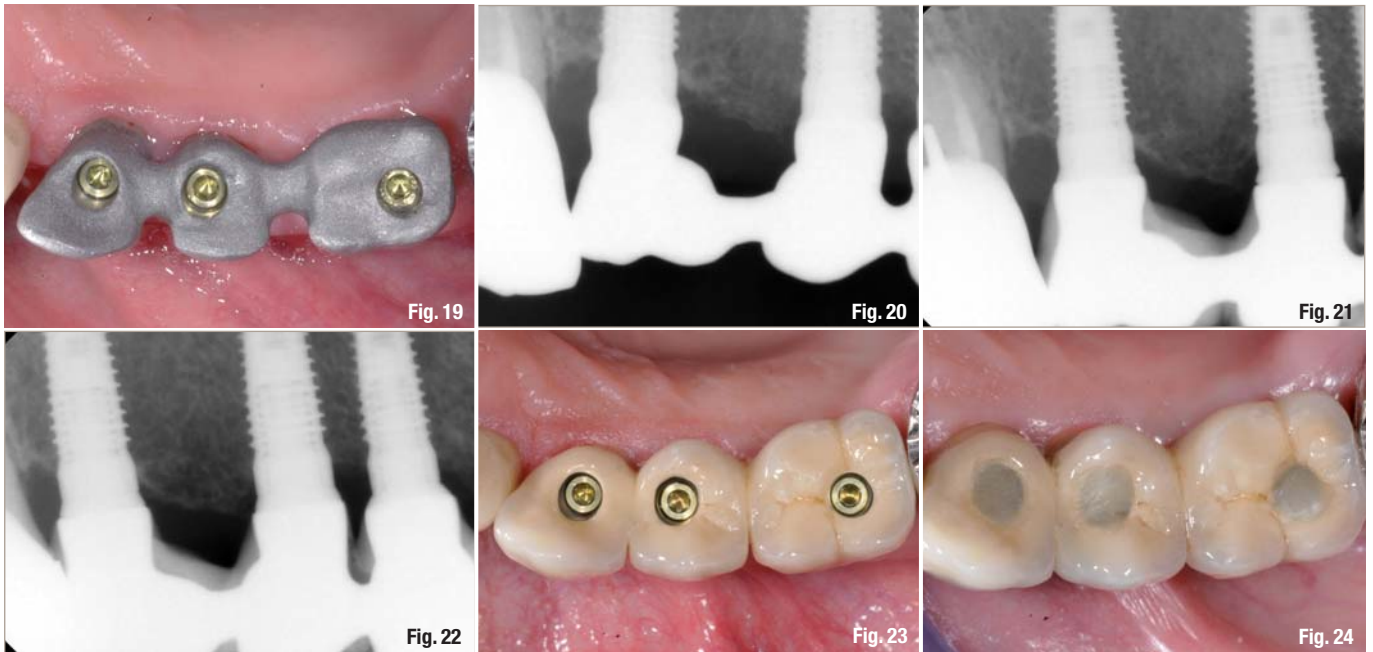
Fig. 16



Fig. 17



Fig. 18



blindly in the bone crest, and we were able to manage the inter-implant gingival volume optimally. It is important to adjust the temporary removable denture properly during the osseointegration phase. Moreover, the patient must be informed that any contact between the temporary prosthesis and the healing screw can result in the loss of the underlying implant. The impression with the pop-in system shows a precision similar to a pick-up impression in so far as the implants are not divergent. We use these transfers in over 99% of our cases.

Conclusion

The one-stage surgical procedure enables us to take advantage of a longer period of mucosal and bone healing in cases in which burying the implant during the osseointegration phase can be avoided. There is also good primary stability, which can easily be obtained with the SCREW-LINE implant shape.

The Vario SR abutments allow us to make a screw-retained prosthesis on implants in a straightforward and precise manner. In addition, time is

saved—with no compromises on precision or quality—by using clinical protocols that are more straightforward and rational than traditional protocols. These include one-stage surgery, limited non-invasive flaps, impression taking with pop-in transfers, easy repositioning of abutments, use of only one screwdriver throughout the treatment and splinted crowns. The screw-retained prosthesis also avoids any risk of residual cement around the implant neck.

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Fig. 17_Vario SR prosthetic abutments in place.

Fig. 18_Detail of the abutment in place.

Fig. 19_Framework try-in.

Fig. 20_X-ray check.

Fig. 21_X-ray check of the bridge during the try-in (note the slight gaps in the mesial implants).

Fig. 22_X-ray after adjustments.

Fig. 23_Occlusal view of the bridge during the try-in.

Fig. 24_Occlusal view after the occlusal access wells had been filled with a cotton pellet and composite.

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Figs. 25–26_Situation three months after insertion of the prosthesis:

buccal view (a) and palatal view (b).

Fig. 27_Final X-ray.

