New CAD/CAM and analogue technologies to rejuvenate old smiles

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Dental History:
The patient lost her front teeth in a horse accident 15 years ago. The four front teeth were replaced with four single implant crowns.

Problem statement:
The front teeth appears long with dark triangles. Excessive bone and soft tissue loss (Figure 1-5). No facility is available to scan the implant in12 area (Nobel replace external hex implant).

Treatment Plan:
Three implants were used (areas 12,21,22: Branemark external hex implants) with extensive soft tissue grafting and a vip-ct over the 11 area (Figure 6).

A temporary metal reinforced bridge were made to assess aesthetics, function and speech. Gradia® gum shades (GC) composite was used to improve aesthetics (Figure 7). A smile design was duplicated to the mouth to assess possible crown lengthening of the canines, premolars and molars in the maxilla (Figure 8).

A second surgery was performed with crown lengthening of the mentioned teeth. Four months later the anterior implant supported prosthesis was connected to the implants. Veneers (13,23) and lithium disilicate crowns (14,15,16,24,25,26) were placed (Figure 10).

Methods and materials:
An impression was taken with Impregum TM Penta TM (3M ESPE) and a zirconia substructure were milled (CAD/CAM) and cemented on gold adapt cylinders (Figure 9). Individualized single lithium disilicate crowns were pressed and veneered. Veneers were made from lithium disilicate full pressed contour using a high translucence ingot (HT) and veneered.

Problem list and lessons learned:
There is no option to scan the Nobel replace external hex implant, since the external hex is higher than the standard Branemark external hex implant.

Conclusion:
New CAD/CAM and analogue technologies can can produce superior results.

References:
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Figure 1: Pre operative occlusion


Figure 2: Occlusal view of implant crowns


Figure 3: Implant 12 to buccally placed


Figure 4: Excessive bone and soft tissue loss


Figure 5: Teeth appears long with dark triangles


Figure 6: Healed vip-ct covering implant in 12 area


Figure 7: Temporary implant bridge


Figure 8: Smile design duplicated to the mouth


Figure 9: Zirconia CAD/CAM milled substructure


Figure 10: Aesthetic smile