Predictable 3-D-face-reconstruction using facial and dental implants

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Fig. 1a


Fig. 1b

Fig. 1a–b_Front and semilateral view before surgery. Maxillary prognathism, retrogeny, gothic maxillary arch, labial protrusion of the incisors.
Fig. 2a–b_Plaster analysis.
Fig. 3_Nobel Speedy RP 12 mm.
Fig. 4a–b_Implant guided palatinal distractor (IGPD) for transverse distraction of the palate. The IGPD was adjusted beforehand and intraoperatively fixed on four implants using guided temporary abutments. Anterior gap for oral feeding.
Fig. 5_Lateral x-ray before operation.
Fig. 6a–b_Exact planning for LeFort I osteotomy, palatinal split and volumetry of the chin was performed by CMF®-Software (Simplant Pro10.01; Platform V10.0.1.6).

_Abstract

Surgery of craniofacial deformities is a complex task that requires careful preoperative planning. In this field Nobel-Guide®-System made a great impact of predictable implantology. Using these for computer-aided surgery (CAS) the patient outcome of extreme dental and facial makeovers can be anticipated. The following case report shows new indications for dental implants by using Nobel-Guide®-System for fixation of a prefabricated "Implant Guided Palatinal Distractor" (IGPD) and for an implant bridge. Thus, embedding dental implantation in maxillofacial procedures like LeFort osteotomy, forced guided palatinal distraction, chin augmentation and septorhinoplasty can be performed in a single-step operation. Operation time and costs can be reduced.

_Introduction

With traditional two-dimensional preoperative work-up, the prediction of the postoperative appearance of the patient's face is limited. Today's surgery simulation systems do not anticipate soft tissue changes resulting from the alteration of underlying bones. Implant simulation programs do not realistically predict exact implant positions. Nobel-Guide®-System made a great impact on the field of predictable implantology and was used for exact implant positioning. Facial performance was planned by CMF®-module to visualize three-dimensional operation procedures and soft tissue movement in maxillofacial surgery.


Fig. 2a


Fig. 2b


Fig. 5


Fig. 3


Fig.. 4a

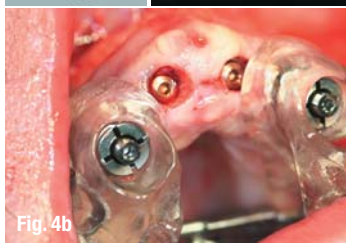
Fig. 4b

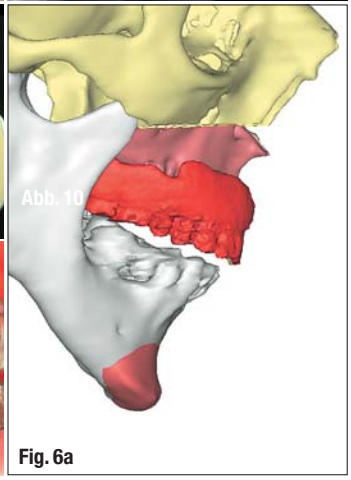
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Fig. 6a