CLINICAL CASE PRESENTATION OSSDSIGN® FACIAL

Bioceramic Implant for Complex Maxillofacial Reconstruction: A Case Report

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Introduction
Reconstructive surgery of complex three-dimensional defects of the midface/maxilla following treatment of advanced squamous cell carcinoma of the maxilla is challenging. Primary or secondary reconstruction using autogenous bone grafts or alloplastic materials are standard procedures, however such procedures may be associated with complications.

This case presentation is a summary of a poster presented at SFOMK in Helsinki, June 2017. It describes the use of a patient-specific calcium phosphate implant (OSSDSIGN® Facial PSI) to restore a challenging and extensive midface and maxillary defect in a patient who had previously undergone several attempts to restore a maxillary defect.

Fig. 1 Male patient, 41 years old, diagnosed with advanced stage squamous cell carcinoma of the left maxilla. Initial treatment of maxillary resection including removal of left orbital floor, followed by chemoradiation and subsequent bony reconstruction. The secondary bony reconstruction failed and resulted in severe scar contracture and collapse of the left midface. A 3D scan of the patient illustrates the extensive bilateral bony defects of the maxilla.
Procedure

A CAD-designed implant based on the patient’s CT scan was created to reflect and compensate for the missing bone anatomy of the left maxilla (Fig. 2a), and optimized according to the selected surgical approach. The number and location of the implant’s fixation points are pre-determined to secure the implant’s position, and are connected to a titanium skeleton embedded inside the calcium phosphate material. The implant was inserted into the defect with a perfect fit, and fixated with titanium screws to the remaining bone of the left and right zygomatic complex (Fig. 2b). To achieve a sufficient soft tissue coverage of the implant a radial forearm flap was raised and restored the anterior part of the maxilla and vestibule.

Outcome

The postoperative course was uneventful and resulted in improved facial appearance, giving the patient more sagittal projection of the midfacial complex (Fig. 3). The patient was very satisfied with the intermediate result, and postoperative CT scans documented exact fitting of the implant (Fig. 4). A short follow-up of five months demonstrates that the use of OSSDSIGN Facial is technically feasible to restore complex defects in the maxillofacial area.

References