

Complete prosthetic restoration in a patient with cleft palate

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_Introduction

Have you already performed lots of full-mouth restorations? Do you always know immediately what the optimal solution is? The majority of dentists, in all honesty, answer 'no' to these questions, since patients seldom have only an isolated problem. Uncertain prognosis for existing teeth, poor oral hygiene or oral and systemic comorbidities can make choosing the right treatment a real challenge. Here, extensive clinical knowledge is called for. With the new e-learning platform *Dental Campus*, you can extend your clinical knowledge with the help of case studies of varying complexity. Benefit from the experiences of other clinicians, discuss cases with

your peers and collect continuing medical education credits at the same time, regardless of time or place. Dental campus contains numerous, uniformly structured case studies. From the initial findings to the maintenance therapy treatments, you can follow all details step-by-step. Thanks to interactive platform features, you can discuss each treatment step with the dentists who actually treated the patients as well as with other practitioners in the forum. In the following, we present a *Dental Campus* case with a highly complex initial situation.

You will find the complete case under:
www.dental-campus.com/cases/complete-rehabilitation-of-a-cleft-patient

Fig. 1 Screenshot of the initial findings. The case presentation simulates the situation on the desk of the practitioner.

Fig. 2 Initial clinical findings.

Fig. 3 Intraoral radiographs at initial exam.

Figs. 4a & b Intraoral wax-up with corrected vertical dimension.

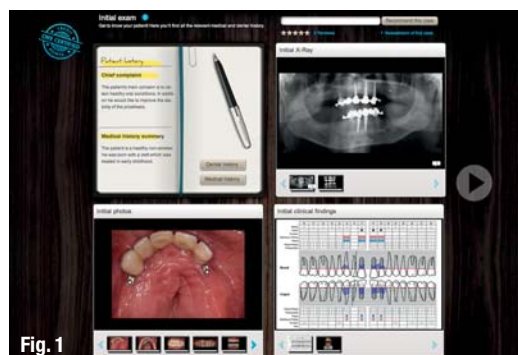


Fig. 1



Fig. 2



Fig. 3



Fig. 4a

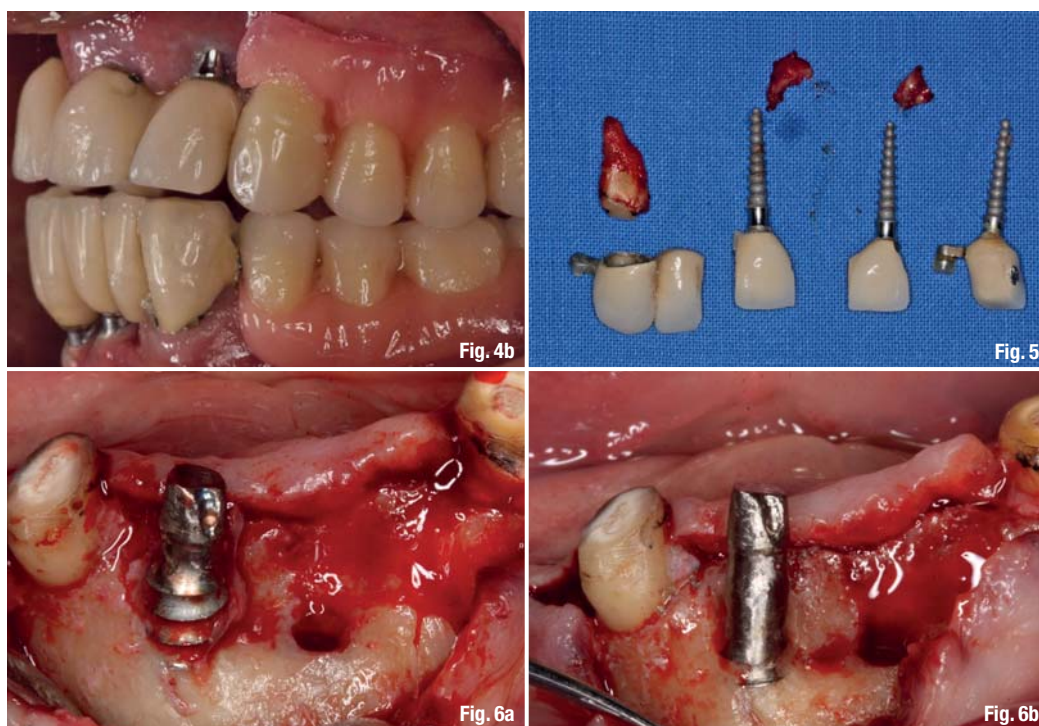


Fig. 5 _Maxilla: Extracted canine and explanted implants.

Figs. 6a & b _Mandible: An implant is explanted, the remaining implant is cut and left *in situ*.

_Initial examination

The patient, a healthy non-smoker, presents with anterior residual dentition (Figs. 1 & 2). He wishes to have improved oral health and increased stability of his prosthesis. At birth he had a cleft palate, which was treated in childhood. All teeth are missing except 13, 33 and 43, 13 and 43 have been endodontically treated. Four years earlier, in the context of a complete prosthetic restoration, implants were set in positions 11, 21, 22 and 41, 42. Upper and lower jaws have received combined fixed and removable solutions. The patient has an open bite in the anterior region, deficiently short incisors in the upper jaw and an unstable occlusion in the posterior region. Periodontitis is evident and found to be serious in the mandible and moderate to severe in the maxilla. Insufficient oral hygiene has led to plaque accumulation with resulting gingivitis. There are pronounced recessions around the implants with exposed machined and partially exposed rough surface areas. Radiologically, peri-implantitis at implants (Bauer screws) 11, 21, 22 is diagnosed (Fig. 3) with suspicion of a foreign body in region 26. Region 13 shows a failing edge of the crown. Mesial lesions in the crown are detected in region 31, 41.

_Interactive diagnosis

Would you recommend a conventional or implant-supported solution for this patient? Or would you opt for root caps in the lower jaw? View the findings of this complex case in detail online.

Compose your own prognosis for each tooth with just a few mouse clicks and create your own treatment plan with the help of the digital dental chart. Then compare your plan with those of other users as well as with the actual treatment choice and discuss it in the forum.

_Treatment

The patient is supplied with a removable prosthesis, supported by four implants in the maxilla and two root caps in the mandible.

a) Hygiene phase

After taking the impressions, the vertical dimension in the wax-up is raised (Fig. 4). In the maxilla, the bridge is removed and implants are explanted, tooth 13 is extracted due to a major loss of substance (Fig. 5). Implant 31 is explanted while implant 41 is treated by implantoplasty whereby the coronal aspect is removed (Fig. 6). An explanation would endanger the preservation of tooth 43, due to its location. For this reason, the endosseous portion is left below the cortical bone level. The patient is immediately supplied with a temporary prosthesis. To select the optimal aesthetic tooth shape, two alternative setups for the maxilla are created.

b) Surgical phase

Implant restorations in the maxilla are performed using computer-assisted navigation (Figs. 7-9). The lacking keratinised mucosa is reconstructed in the maxilla with a palatal graft and a ro-

Fig. 7 The radiographic template is placed in the mouth for the CBCT scan: the Lego brick (yellow) is used as the reference mark.

Fig. 8 Computer-aided planning of implant placement.

Fig. 9 Lifted flap with proper placement and fixation of the surgical template.

Fig. 10 Missing mucosa is reconstructed with palatal grafts and rotation flap.

Fig. 11 The remaining implant in the lower jaw presents with a bone defect. It is cut and left *in situ*.

Fig. 12 The initial diagnostic set-up must be adapted to the altered mucosal contour.

Figs. 13a & b Cementation of root caps.

Figs. 14a & b Final maxillary prostheses.



Fig. 7



Fig. 8

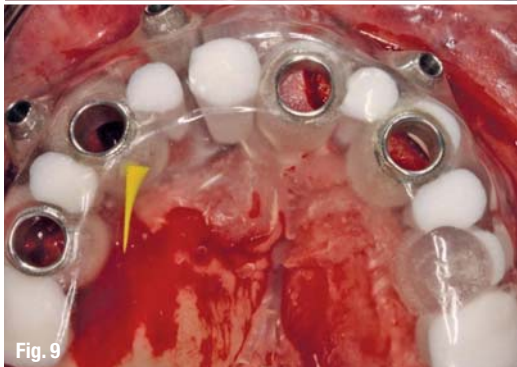


Fig. 9

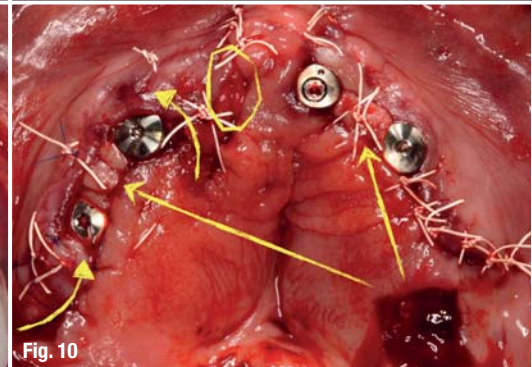


Fig. 10

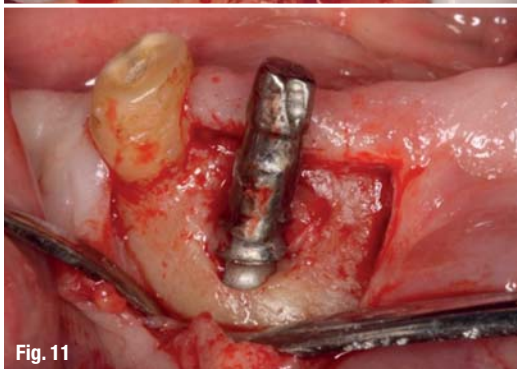


Fig. 11



Fig. 12



Fig. 13a



Fig. 13b



Fig. 14a



Fig. 14b



Fig. 15

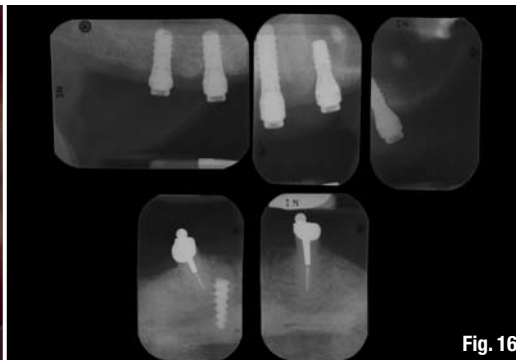


Fig. 16



Fig. 17a



Fig. 17b

Fig. 15_Final clinical results.

Fig. 16_Final radiological findings.

Figs. 17a & b_Clinical situation before and after therapy: optimised tooth alignment and smile line.

tational flap (Fig. 10). After lifting the flap, the remaining mandibular implant reveals bone loss, due to an inadequately inserted implant (Fig. 11). The implant is cut and left *in situ* to avoid creating a large bone defect by explantation.

c) Prosthetic restoration

The canines are supplied with root posts. The original diagnostic setup is adapted to the altered soft tissue structure. The prosthetic restoration is shown in part in Figures 12 to 14. You can follow the detailed procedure online, documented with numerous images.

_Join in the discussion

The patient adapted well to the new prosthesis. He was pleased with the stability and aesthetic appearance (Figs. 15–17).

The case described here provides an example of a case documentation found on *Dental Campus*. Extensive background information and detailed description of the individual treatment steps enable you to understand the treatment planning and implementation, and to translate this into high practical value for your own practice. Unlike other online platforms, *Dental Campus* is characterised by a clear, well-structured design with high practical relevance and interactive capability. The learning content can be tailored individually. In addition to the case library, system-independent online lectures provide current, comprehensive expertise. Associated with each presentation you will

find the appropriate implant-specific product information. The combined information enables you to immediately translate your newly acquired knowledge into practical treatment know-how. The *Implant Campus* Board, composed of internationally recognised experts, is responsible for the quality and content of the platform.

How do you rate the choice of treatment and the final results in the presented case? Register as a user, discuss the treatment with your dental colleagues and gain two CME credits for working on the case.

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