

Case Report - Dr. med. dent. Wolfgang Prinz, MDSc, Switzerland

Biodenta® Tissue Level Implants placed in the atrophic posterior mandible

Introduction

Accurate planning is essential for success in implant therapy.

Specific surgical and prosthetic aspects have to be considered.

Precise planning prior to insertion of the implants reduces the risk of complications when subsequently restoring the implants.

Case report

A 41 year old patient wanted to fill the space in her lower left mandible. More than 10 years ago, teeth 36 and 37 had been extracted due to problems with decay. In the meantime, the patient had had all her amalgam restorations replaced with gold inlays. Her oral hygiene had improved significantly since then. The patient was in general good health. An intraoral examination showed a well restored partial edentulous dentition with healthy periodontal tissues.

In the region of the missing teeth 36 and 37, an hourglass defect was visible. For the radiographic examination an OPG was taken (Fig.6).



Fig.2: Extra oral front view



Fig.3: Profile view



Fig.6: Panoramic radiograph (OPG) taken at first consultation



Fig.1:
Intraoral labial view



Fig. 4 and 5:
Occlusal view of the upper and lower jaw

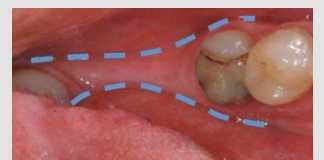


Fig. 7:
Hourglass defect of the edentulous area

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Three significant factors applied:

- a) The inter-maxillary distance (8mm)
- b) The mesio-distal distance (13.1mm)

This space allowed room for only one premolar and molar, instead of two molars.

- c) Occlusal relationship (static and dynamic)
 - I) Axial loading was possible.
 - II) Slight elongation of tooth 26 complicated the design of the occlusal surface of the crowns (shear forces had to be avoided).
 - III) Occlusal analysis showed normal incisal guidance.

The surgical planning depended on the following radiographic diagnostics:

- a) The distance to the mandibular canal was 17mm and 15mm respectively.
- b) The roots of the adjacent teeth were not in the area of the planned implants.



Fig.9: Detailed picture of the panoramic radiograph - mandibular canal outlined



Fig.8:
Intermaxillary relation

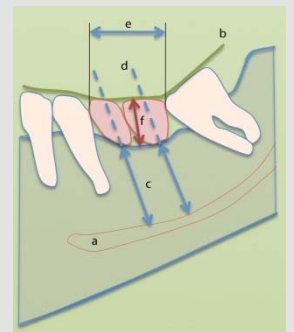


Fig.10: Parameters of the surgical and prosthetic planning:

- a) Course of the inferior alveolar nerve
- b) Course of the Curve of Spee
- c) Distance to the mandibular canal
- d) Ideal insertion axis
- e) Distance between the contact points of the adjacent teeth
- f) Intermaxillary distance

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Two adjacent Biodenta[®] implants were placed in the region of tooth 36 and 37 (at tooth 36 a 3.5/14mm implant and at tooth 37 a 4.1/12mm implant).

A safety distance of more than 3mm to the mandibular canal was maintained.

Instead of healing abutments, closure screws were used to enable a stress-free closure of the flap.

The implant axes were parallel to the axis of the adjacent tooth in order to attain axial loading.

After three months healing time, the implants were exposed and healing abutments were inserted.

Two weeks later an impression was taken using Impregum[®] impression material and a customised impression tray for a screw retained restoration.

A check x-ray confirmed the precise fit of the impression copings on the implant platforms.



Fig.11:
Post-surgery radiograph



Fig.12:
Biodenta[®] Tissue Level Implants
(3.5 and 4.1mm)

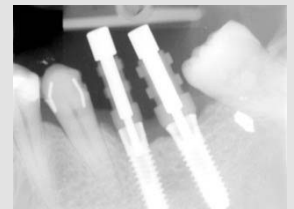


Fig.14:
Check x-ray prior to the impression



Fig.13: Healing Abutments in situ



Fig.15: Close-up of the impression



Fig.16:
The impression

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Two titanium abutments were fitted with a torque of 35Ncm.

For biomechanical reasons, both PFM crowns were splinted together. Space was provided interproximally between both crowns to allow insertion of an interdental brush to enable maintenance of an adequate hygiene protocol. For the cementation zinc phosphate cement was used.

After 6 months, a check x-ray was taken and showed typical bone-remodelling to the first implant thread of tissue level implants.



Fig.18: Fitted titanium abutments



Fig. 20: Occlusal view of the final restorations



Fig.17:
Check x-ray after 6 months



Fig.19:
Buccal view of the final restorations

Clinician

Dr. med. Dent. Wolfgang Prinz has completed a Masters in Dental Science (Oral Implantology) at the University of Vienna, Austria.

Dr. Prinz is a member of the IADR, EAO, DGP and Advisory Board Member of Implant Industry



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