

Treating stable periodontitis patients with two-piece implants

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In patients who suffer from periodontitis, the treatment with dental implants can pose unique challenges for clinicians. In most cases, periodontal therapy needs to be carried out first, before implants can be installed successfully. In the following, two clinical cases are described in which tooth replacement with dental implants was carried out once the patients had successfully completed preceding periodontal therapy.

Case 1

Initial situation

A 26-year-old female patient visited the Department of Periodontology at Rambam Health Care Campus. She was complaining about “advanced gum disease” and she expressed the fear of losing her teeth. She was healthy and a non-smoker. Periodontal examination revealed severe attachment loss in all quadrants, mobility of teeth, poor oral hygiene and insufficient restorations. Plaque and gingival indices were above 70%.

The patient was diagnosed with generalised periodontitis, stage IV, grade C, according to the 2017 workshop on the Classification of Periodontal and Peri-implant Diseases and Conditions (Fig. 1a).

Pre-surgical treatment

The first phase of periodontal therapy (cause-related therapy) involved a motivational interview as well as an explanation about the cause and progression of her periodontal disease. Thereafter, sub- and supragingival debridement was performed in all quadrants under local anaesthesia and systemic antibiotics were prescribed. The hopeless teeth #11, 12, 21 and 22 were extracted and the extraction sockets were filled with an alloplastic material (bi-phasic calcium sulphate). A provisional bridge was installed in the maxilla on #15 and 25. At the re-evaluation appointment six months after the first phase of therapy, the self-oral hygiene of the patient had improved with plaque and gingival indices below 15% (Fig. 1b). However, deep periodontal pockets up to 10 mm remained especially in the posterior segments of the dentition.

To further treat the periodontal disease, a second phase of therapy was planned, which involved the extraction of teeth #16, 26 and 28 owing to grade 3 furcation, and regenerative periodontal surgery (Fig. 1c). Repeated root surface debridement was performed for the single-rooted teeth with residual pockets of 5 mm. Six months after the periodontal surgeries, the case was re-evaluated. Intra-oral radiographs and a periodontal chart confirmed

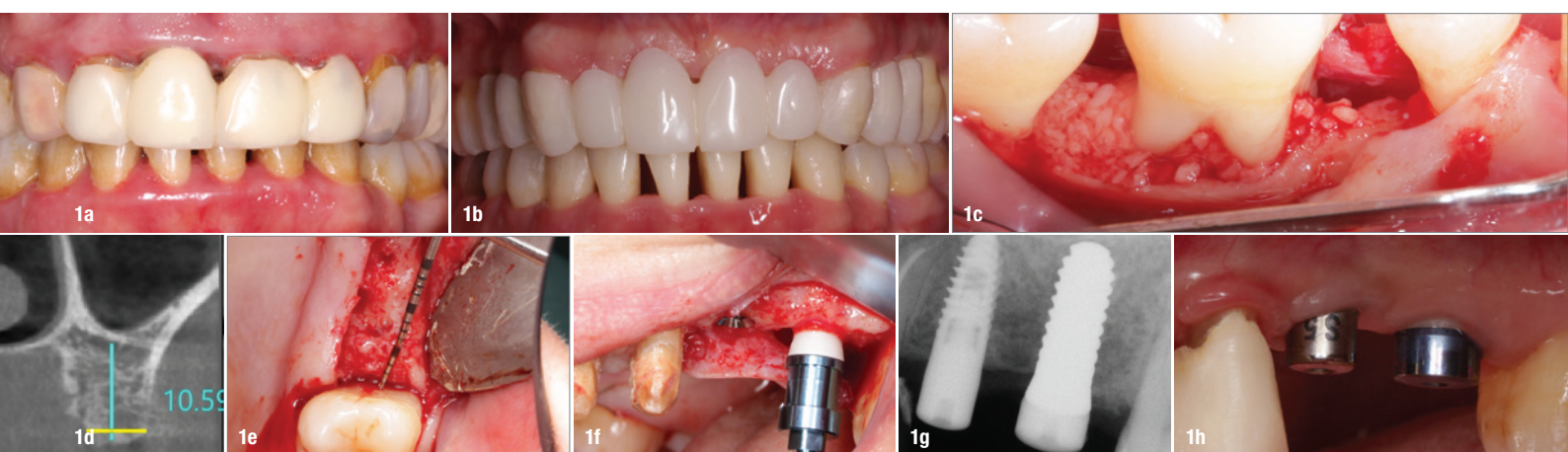


Fig. 1: Periodontal and prosthetic treatment of a patient with stabilised periodontitis, stage IV, grade C: baseline clinical findings (a), clinical situation six months after phase one periodontal therapy (b), periodontal regeneration of intra-bony defect (c), CBCT of the edentulous area (d), interdental space allowing placement of two implants (e), installation of bone-level titanium implant in the mesial position and two-piece zirconia tissue-level implant in the distal aspect (f), intra-oral radiographs immediately after implant placement (g), uneventful healing of the peri-implant soft tissue (h).

the elimination of deep pockets and the stability of the periodontal disease. At that point, after prosthetic consultation, it was decided to restore the missing teeth #16 and 26 with dental implants and to realise a cross arch, tooth-supported, fixed partial denture between tooth #15 and 25.

Implant surgery

The partially edentulous ridge at positions #16 and 26 was evaluated by means of CBCT (Fig. 1d). The interdental space was 15mm, which allowed the insertion of two dental implants in each side. On each side of the maxilla in position of the missing teeth #16 and 26, two implants were inserted: a standard titanium-based implant on the mesial side and a two-piece zirconia tissue-level implant on the distal side (4.1 mm in diameter and 10mm in length; TAV Dental; Figs. 1e–g). In both sites healing was uneventful (Fig. 1h). The final restoration of the implants was planned to be carried out four months after insertion.

Case 2

Initial situation

A 57-year-old female patient with a medical history of osteopenia, and who had undergone six years of Zoledronic acid treatment, presented at the Department of Periodontology at Rambam Health Care Campus. There, she was diagnosed with localised periodontitis, stage II, grade B (Figs. 2a–c).

Pre-surgical treatment

The first phase of periodontal therapy included sub- and supragingival debridement, and the extraction of tooth #14, which was diagnosed with vertical root fracture. The periodontal pockets of teeth #11 and 21, which had been successfully treated with a Slow-Release device (Perio-Chips, Dexcel Pharma), had depths of 6–7 mm. Treat-

ment outcomes were re-evaluated four months after the first phase of periodontal therapy had ended, revealing the elimination of deep pockets (Fig. 2d).

Implant surgery

Before dental implant placement, the patient paused her Zoledronic acid treatment for three months. After the evaluation of the partially edentulous ridge by means of CBCT (Fig. 2e), a two-piece zirconia implant, 4.1 mm in diameter and 11.5mm in length (TAV Dental), was installed (Figs. 2f–h). Subsequent healing was uneventful. Six months after insertion, the implant was rehabilitated with a crown (Figs. 2i & j).

about the author



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Fig. 2: Periodontal and prosthetic treatment of a patient with stabilised periodontitis, stage II, grade B: baseline clinical and radiographic findings (a–c), clinical assessment of edentulous area at missing tooth #14 (d), CBCT analysis of the edentulous area (e), edentulous ridge after flap elevation (f), installation of two-piece zirconia tissue-level implant (g), intra-oral radiographs immediately after implant insertion (h), rehabilitation of the implant with a crown (i & j).