

ITI

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Treatment Guide

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Volume 3

Implant Placement
in Post-Extraction Sites
Treatment Options



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Preface

Today, the use of dental implants has become a standard of care in many clinical situations. A vast body of evidence proves implant therapy to be a safe and efficient treatment option. The undisputed advantages that implant therapy offers over conventional therapeutic intervention in many cases has further contributed to the swift growth of the number of implants placed.

The rapidly increasing relevance and popularity of this still relatively new therapeutic approach does not only entail advantages, but it also harbors risks. In addition to

treatment outcomes being largely dependent on the clinician's level of education, practical expertise, and sense of responsibility, one has to be aware of the uncertainties regarding the uses and successes of new treatment modalities, as these have not yet been sufficiently evaluated and documented in clinical long-term studies.

The present Volume 3 of the ITI Treatment Guide series has been designed to provide clinicians with practical and evidence-based data on implants inserted in post-extraction sockets.

Based in part on the results of the Third ITI Consensus Conference held in 2003, this ITI Treatment Guide volume provides an up-to-date analytical review of the current literature. In addition, it also offers an extensive overview of the advantages and shortcomings of the different treatment options in post-extraction sites.

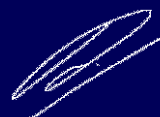
In addition to 15 case presentations that illustrate the application of the various placement protocols in clinical practice, factors influencing treatment outcomes of implant therapy in post-extraction sites are discussed, as are potential complications.

Volume 3 of the ITI Treatment Guide series is aimed at assisting clinicians in their evidence-based choice of implant placement protocol, at the same time supporting detailed treatment planning and execution. In this respect, Volume 3 of the ITI Treatment Guide series represents another effort to accomplish the mission of the ITI, which is "... to promote and disseminate knowledge on all aspects of implant dentistry [...] to the benefit of the patient."

Daniel Buser

Daniel Wismeijer

Urs C. Belser



Acknowledgment

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We would also like to thank Straumann AG, our corporate partner, for their continuing support, without which the realization of the ITI Treatment Guide series would not have been possible. The ITI and the authors are solely responsible for its scientific content.

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4.5 Immediate Flapless Placement of an Implant in a Maxillary Right Second Premolar Site

M. Rocuzzo

This 22-year-old female patient, a light smoker, came to the office in January 2007 because of a fracture of the endodontically treated tooth 15. The fracture had been caused by severe decay.

The periapical radiograph revealed the full extent of the loss of tooth substance.

The amount of healthy dentine was not sufficient for a stump preparation for a conventional crown due to the extent of decay and due to the fact that the fracture line extended below the bone level (Fig 3).

Therefore, the patient was offered the following treatment options:

- Extraction of tooth 15 and gap closure with a conventional tooth-supported bridge.
- Orthodontic extrusion of tooth 15 and subsequent cementation of a conventional single crown.
- Extraction of tooth 15 and replacement by a dental implant.



Fig 1 Orthopantomograph taken during the patient's first visit in January 2007.

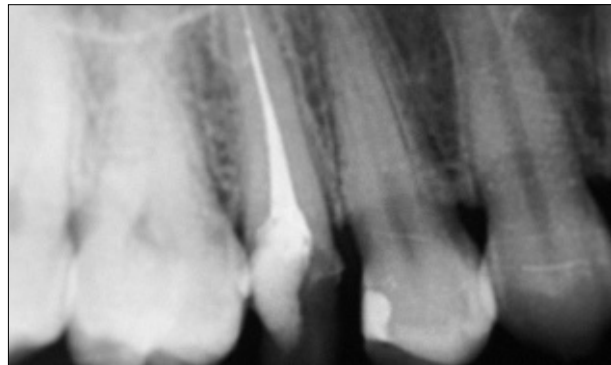


Fig 2 Periapical radiograph taken in January 2007.



Figs 3a-b Fractured tooth 15, buccal and occlusal view.

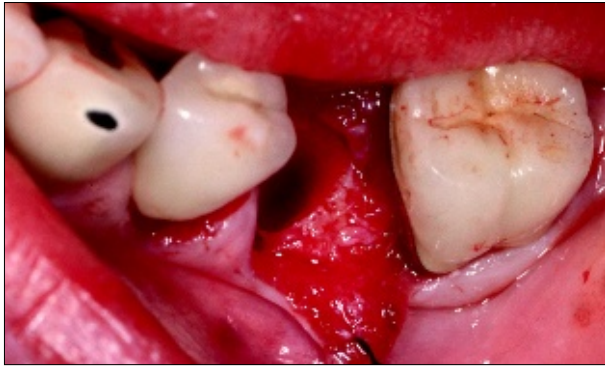


Fig 4 Intraoperative view of site 35 following flap-reflection and the extraction of tooth 35. The vertical height of the facial bone at the mid-point of the socket was lower than at the distal and lingual bone walls.



Fig 5 Occlusal view of the site following the placement of the implant.

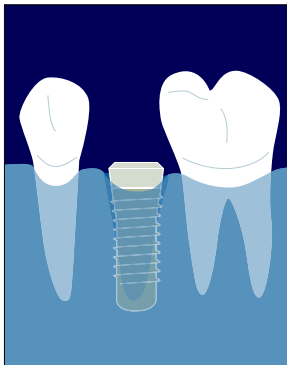


Fig 6 Diagram showing the implant at post-insertion site 35. The socket walls were higher on the mesial, distal, and lingual bone as compared to the facial bone. The rough-to-smooth junction of the implant was placed at the level of the mid-facial bone.

The treatment plan was to extract the root of tooth 35 and immediately place an implant into the socket (Type 1). Following flap reflection, the root of tooth 35 was carefully extracted (Fig 4).

The facial bone was thin and had a marked scallop with the mid-facial bone located apically of the mesial, distal, and lingual bone walls. The socket was debrided and a Straumann Tapered Effect implant (endosteal diameter 4.1 mm, length 10 mm, Regular Neck prosthetic platform 4.8 mm) with SLA surface was placed (Fig 5).

The implant was placed with the rough-to-smooth junction at the level of the mid-facial crestal bone (Fig 6).

The marginal gap on the facial aspect was less than 2 mm in width and no bone augmentation was performed. Following the attachment of a healing cap, the flaps were closed with resorbable interrupted sutures (Fig 7).

The radiographic appearance of the bone supporting the implant, taken 1 month after surgery, was good (Fig 8).

After 2 months of healing, restorative treatment commenced. A metal-ceramic crown was cemented onto a solid abutment. Clinical examination revealed healthy marginal mucosa and optimal plaque control (Figs 9 and 10).

A radiograph of the implant showed slight marginal bone loss and the appearance of a mesial and distal infrabony defect (Fig 11).

At the 2-year recall, slight swelling on the distal aspect of the implant was noted (Fig 12).

The peri-implant pocket on the facial aspect had increased to 4 mm in depth with bleeding after probing. Radiographic examination showed that the infrabony defect had widened slightly on the distal aspect (Fig 13). The patient reported no symptoms at the time. The peri-implant sulcus was debrided with carbon graphite curettes and plaque-control measures were reinforced with the patient.

At the recall visit 3½ years after the restoration of the implant, the patient complained of tenderness and swelling of the facial mucosa (Fig 14).



Fig 7 Occlusal view of site 35 following the attachment of a healing cap and flap closure.



Fig 11 Periapical radiograph of the implant at site 35 with crown, 3 months after surgery.

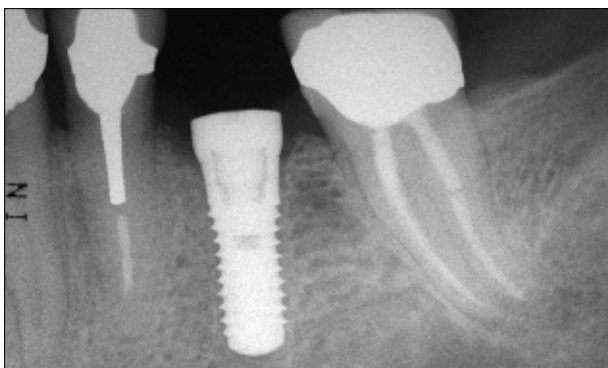


Fig 8 Radiograph of the implant at site 35 taken 1 month after surgery.



Fig 12 Facial view of the implant two years after the restoration was delivered. Slight swelling of the mucosa on the distal aspect.



Fig 9 Facial view of the implant-supported restoration 3 months after surgery. Plaque control was excellent and the marginal mucosa was healthy.

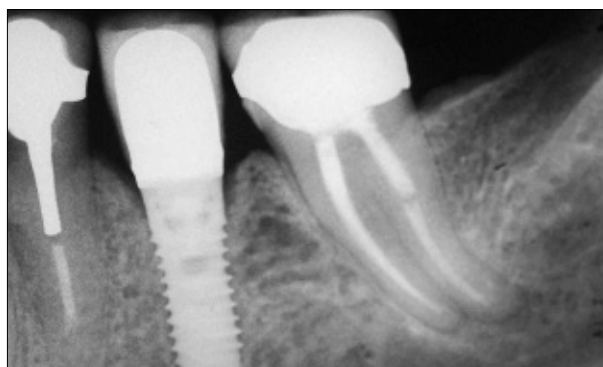


Fig 13 Periapical radiograph of the implant at site 35 and the crown, 2 years after the restoration was placed. Slight crestal bone loss was apparent on the distal aspect of the implant.



Fig 10 Occlusal view of the implant-supported restoration 3 months after surgery.



Fig 14 Facial view of the implant 3 years after the crown was placed. The patient complained of tenderness of the facial mucosa.