

PROSTHODONTIC

—Insights—

A Digest of Recent Trends, Techniques and Clinical Concepts of Dental and Facial Esthetics

Single Tooth Incisionless-Sutureless Surgery

TEETH IN A DAY™



Glenn J. Wolfinger,
DMD, FACP



Thomas J. Balshi,
DDS, FACP

Introduction

Immediate loading of titanium implants intended to become osseointegrated has peaked the interest of many clinicians and researchers. The evolution from the traditional 2-stage protocol, originally developed by Per Ingvar Brånemark, has provided exceptionally excellent results over the past two decades.

However, patients' desires and needs have also traditionally encouraged clinicians and researchers alike to find new solutions. Thus, acceleration of the treatment process has occurred as a result of perspective scientific studies. Much of the immediate loading research performed over the past nine years has focused on extensive partial and full arch restorations. Researchers have demonstrated the efficacy of immediate loading using the TEETH IN A DAY™ protocol in the fully edentulous maxilla and fully edentulous mandible as well as partially edentulous conditions. The results of these studies clearly indicate that immediate loading under specific protocols can work successfully.

There is a distinct difference between immediate loading of multiple implants

and that of a single tooth. When functional loads are applied to a rigidly splinted multiple implant system, the majority, if not all the implants, absorb the load distribution in that system. However, any loading forces applied to a single tooth implant restoration are applied to the one implant. For this reason many clinicians believe that the initial restoration placed on the implant should be constructed in a manner that eliminates direct occlusal loading. After the implant has osseointegrated, the final prosthesis can be put into normal function. This is the procedure employed for the following patient.

Patient Treatment Review

The patient is a very lovely, energetic, athletic and highly motivated 26-year-old young woman who suffered a traumatic



August 5, 2002 2:10PM

Figure 2 -- Class IV smile line reveals the traumatically discolored right central incisor.



August 5, 2002 2:55PM

Figure 10A -- Front smiling view moments after the cementation of the restoration.

(Continued on Page 2)



Figure 1-- Preoperative smile



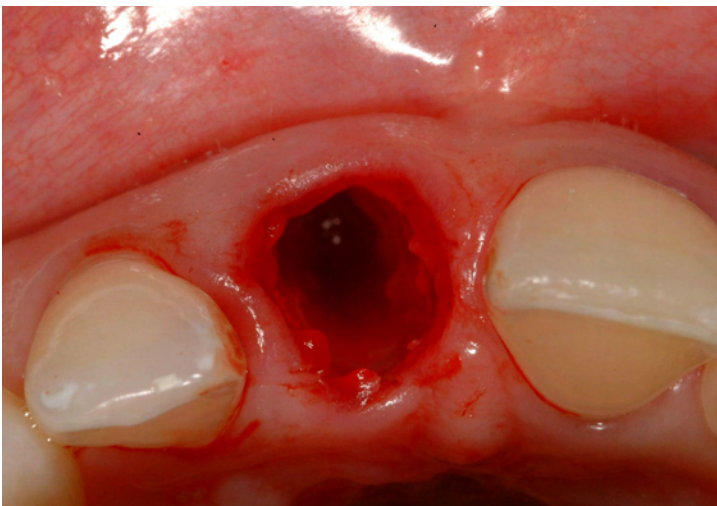
Figure 11 Post TEETH IN A DAY™ smile



Figure 3 Preoperative radiograph depicting extensive external root resorption on the distal at the osseous crest.



Figure 4A (above) 4B (below) Atraumatic extraction preserves the circumferential bone.



injury to her maxillary anterior teeth in adolescence. As a result of this injury the tooth eventually discolored from pulpal necrosis. Subsequent endodontic therapy was performed and the tooth remained clinically stable. In recent years the patient's family dentist identified external root resorption at the distal cervical region (Fig 1).

Clinical Evaluation

The patient presented with an intact dentition and significant discoloration of the maxillary right central incisor. Her smile line was graded Class IV smile line (gummy smile) making the dark coloration of the tooth obvious when she spoke and extremely evident upon smiling (Fig 2). Radiographic evaluation confirmed lateral root resorption and the position of proximal bone related to the resorptive process (Fig 3). Considering the external root resorption, this tooth would have a very poor



Figure 4C Gutta percha can be visualized through the external root resorption apical to the CEJ.

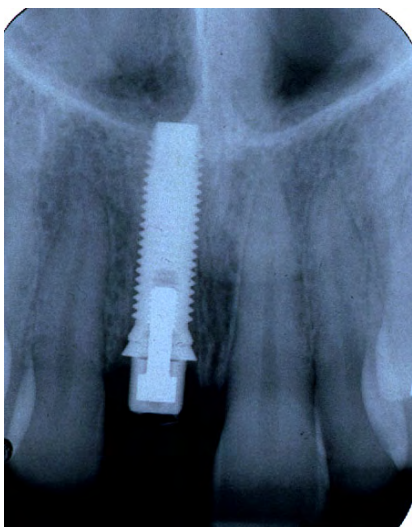


Figure 5A Periapical radiograph demonstrates the engagement of threads in the cortical plate of the floor of the nasal cavity.



Figure 5B Lateral cephalometric film demonstrates the long axis angulation of the central incisor implant.

prognosis for long-term conventional restorative treatment, especially since an area of apical root resorption was also noted. Alternative forms of prosthetic intervention were discussed with the patient including the use of a 3-tooth fixed partial denture, a removable partial denture, and the possibility of a resin-bonded bridge. Ultimately, the removal of the tooth and insertion of a Brånemark implant using the TEETH IN A DAY™ protocol was offered. The patient felt quite strongly about maintaining the integrity of the adjacent teeth and was resistant to the thought of a removable prosthesis. Therefore the treatment of choice to rectify this condition was an osseointegrated implant with an immediate loading protocol – TEETH IN A DAY™. Two weeks later the patient scheduled to begin this process.

TEETH IN A DAY™ Surgical Procedure

Local anesthesia was administered as follows: Marcaine 1:200,000 two carpules and Lignospan 1:100,000 2 carpules. The local anesthesia was tolerated well. Tooth # 8 was carefully removed using thin elevators to dissect the periodontal ligament to allow atraumatic removal of the tooth from the socket while maintaining all of the available bone surrounding the area (4a, b, c). Using finger palpation of the vestibular area, the labial anatomy of the premaxilla was digitally visualized. Clinical palpation and lateral cephalometric radiographs assisted in positioning the drills used to create the implant osteotomy site. Profuse saline irrigation was used throughout the drilling procedure, which was designed to orient the receptor site toward the palatal aspect of the socket to create an implant angulation similar to that of the natural root but extending far beyond the apex

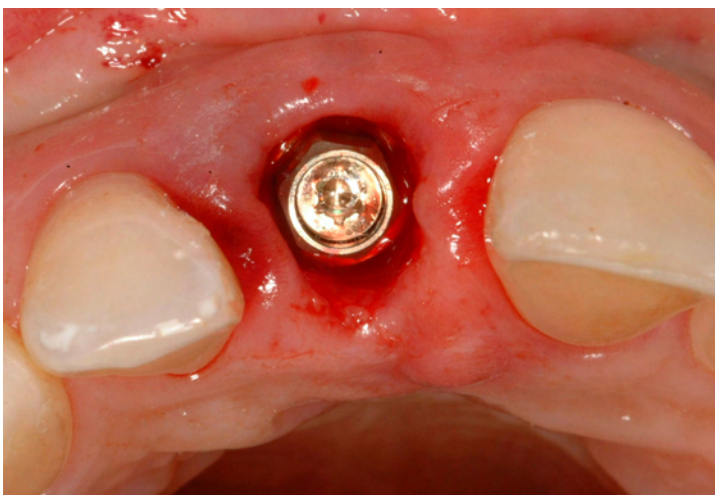


Figure 6 The incisal view of the CeraOne abutment.



Figure 7 The methylmethacrylate coping is seated on the CeraOne abutment.



Figure 8A Moist acrylic resin is applied to the coping at the level of the gingiva.



Figure 8B A prefabricated acrylic crown is then attached to the coping.



Figure 9 The finished TEETH IN A DAY™ restoration on the CeraOne stainless steel analogue.

into the pre-maxillary basal bone (Fig 5a, b).

Following preparation of the socket, a 15 X 4 mm TiUnite MK4 Brånemark implant was placed with the shoulder of the implant 4 mm below the crest of the gingiva on the labial

aspect. A bone guide was installed and the accompanying trephine used to remove peripheral bone from the proximal surfaces of the socket. Then a 1 mm CeraOne abutment was installed (Fig 6). The gold fastening screw was tightened with an electronic torque driver to 32 Ncm of torque force.

TEETH IN A DAY™ Prosthetic Procedures

With the abutment in place, a methylmethacrylate custom coping was fitted over the CeraOne abutment (Fig 7). A prefabricated acrylic crown was carefully connected to the plastic coping with a soft mix of acrylic resin (Fig 8a,b). One needs to be aware of the potential for acrylic engaging the interproximal undercuts during this phase of treatment. Once the acrylic polymerized to the coping, the crown was removed from the abutment and an abutment analogue was installed in the coping to preserve the integrity of the acrylic margins during the refinishing of the acrylic restoration. Small amounts of acrylic were added to any voids or thin areas that required reinforcement. Once set, recontouring and final polishing was accomplished (Fig 9).

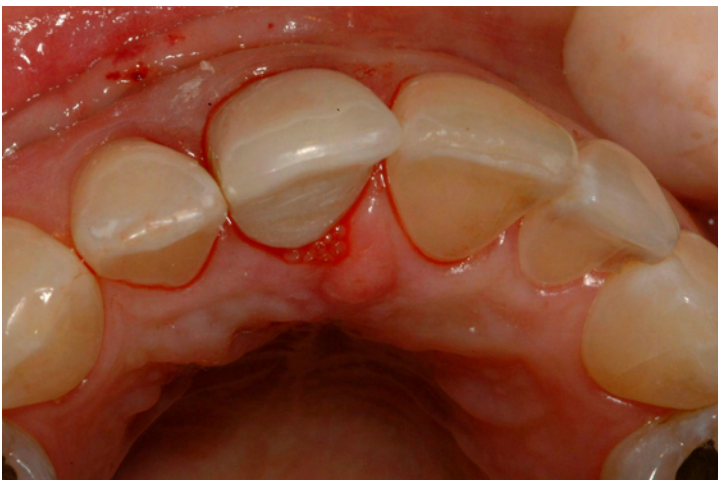


Figure 10B Incisal view of the TEETH IN A DAY™ crown.



Figure 10C Anterior-lateral view of the TEETH IN A DAY™ crown shows appropriate labial gingival support.

Clinical treatment continued during this laboratory phase. Autogenous bone obtained from the osteotomy site was used to fill voids between the socket wall and the implant surface.

Cementation of the acrylic crown was accomplished with a carboxylate cement (Duralon, ESPE America Inc., Norristown). Only the thinnest amount of cement was required in order to avoid the extrusion of excess into the crevicular area of the fresh extraction site. The contours of this restoration were designed to mimic the original tooth and root form, sealing the socket and maintaining clot formation subgingivally. The morphology of this restoration also provided support of the labial gingiva (Fig 10a, b, c).

No sutures are required when sculpting the restoration in this fashion. This *incisionless-sutureless* procedure provides an exceptionally fast recovery with very little if any postoperative discomfort. Standard protocol for medications following implant surgery was given to the patient along with postoperative instructions cautioning premature function on the individual implant (Fig 11).

In many similar patients, the master impression can be made at the time of this one-stage procedure, just prior to cementation of the TEETH IN A DAY™ crown. In this instance, the patient returned four months after the TEETH IN A DAY™ procedure for the final impression followed a few days later by delivery of the porcelain fused to gold implant supported crown.



Figure 10A -- Front smiling view moments after the cementation of the restoration.

The Institute For Facial Esthetics

Continuing Education

Traditional 2-Stage Implant Protocol

and

1-Stage TEETH IN A DAY™

Featuring the Brånemark System®

*Co-sponsored by Nobel Biocare USA, Inc.**

Course Dates:

September 15-16-17, 2003

January 19-20-21, 2004

September 20-21-22, 2004

Faculty:

Thomas J. Balshi, DDS, FACP

Glenn J. Wolfinger, DMD, FACP

Robert Winkelman, CDT, MDT

Time:

8:00 AM - 6:00 PM

Lunch 12:00 - 1:00 PM

Tuition:

\$ 1800

Credits:

Eligible for 24 hours of
continuing education credit

Location:

Institute for Facial Esthetics

467 Pennsylvania Avenue #201

Fort Washington, PA 19034

Educational Objectives: To teach and demonstrate the effect of osseointegrated dental implants on facial esthetics and general patient well-being; To provide clinical instruction and hands-on implant training; To provide clinical patient management before, during, and after dental implant rehabilitation; To provide post-prosthesis maintenance via home and professional oral hygiene.

Course Content: Includes the fundamentals of implant surgery and prosthetics, patient selection, treatment planning, drape and anesthesia, evaluation of implant sites, bone preservation, site preparation, implant placement, surgical closure, abutment connection, loading of implants, post-op instructions. Special considerations include graft areas, anatomic defects, immediate extractions sites, delayed extraction sites, complications, preventing and solving problems, and TEETH IN A DAY™ for the maxilla and mandible.

Teaching Methods: Lectures, slides, videos, hands-on surgical and prosthetic procedures. Live surgery observed.

Seminar Includes: Certificate of attendance, course materials, lunch and refreshments.

**Nobel Biocare is an ADA CERP Recognized Provider. The formal continuing education programs of this sponsor are accepted by the AGD for Fellowship/ Mastership credit. Participants are eligible for 24 hours of continuing education credit. Continuing education credits issued for participation in this CE activity may not apply towards license renewal in all States.*

For more information or to register:
call **215-643-5881** or fax **215-643-1149**

The Institute For Facial Esthetics Reserves the right to cancel the course at any time with no responsibility other than full refund of tuition paid. No refunds made within 48 hours of the course.

Immediate Functional Loading of Brånemark Single Tooth Implants. A 5-year clinical follow-up study. Ingvar Ericsson et al

In a long-term prospective study (5 years), the treatment outcome of single tooth replacements with artificial crowns retained to implants installed according to a one-stage surgical procedure and immediate loading (Experimental Group) in comparison to the original 2-stage concept (Control Group) was challenged.

The Experiment Group consisted of fourteen patients with a total of 14 missing single teeth. One Brånemark implant was placed in each patient according to the standard protocol (Table 1). A Brånemark System CeraOne abutment was then connected and a provisional crown was cemented to the abutment within 24 hours. Good clinical initial stability was obtained in all cases. Two of these fixtures were lost (14%) within the first 5 months of function. No further losses were observed. Thus, it is obvious that if complications occur, they occur early following placement and immediate loading.

The Control Group consisted of 8 patients treated with 8 single tooth replacements on Brånemark implants during the same period of time and according to the traditional two-stage protocol. No implants were lost up to 5 years follow-up.

This study indicates that immediate functional loading of implant-supported single-tooth restorations is possible. The design of the study was based on knowledge obtained mainly from previous studies.

Applied Osseointegration Research
Volume 2, Number 1, 2001



Prosthodontic Insights is published by Prosthodontics Intermedica and distributed without charge to qualified individuals. Please request a subscription on your organization's letterhead.

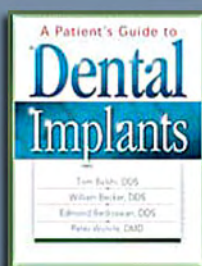
Prosthodontics Intermedica
467 Pennsylvania Avenue, Suite 201, Fort
Washington, PA 19034 U.S.A.
Tel: 215-646-6334 Fax: 215-643-1149
Email: PITEAM@aol.com

A Whole New World in Just One Day



*Dr. Glenn Wolfinger and Dr. Thomas Balshi,
Board Certified Prosthodontists present
real life stories about actual patients experiencing
Teeth In A Day™ Procedures step by step.*

*To Request a free Teeth In A Day™ Video
Call Prosthodontics Intermedica at
215-646-6334 or email us at PITEAM@aol.com*



Available March 1st 2003

A Patient's Guide to Dental Implants

\$14.95 plus shipping and handling

By Thomas Balshi, DDS, William Becker, DDS, Edmond Bedrossian, DDS, Peter Wohrle, DMD

Four dental implant specialists explain dental implant treatment step by step, in a first-of-its-kind book. Among the topics the authors cover: who is a candidate for implants, the advantages of implants, how implants are surgically placed, how to find a qualified dentist, and follow-up care. The book is loaded with before and after photos of patients.

This book can be ordered from Prosthodontics Intermedica as early as March 2003.