Team Approach to Implant Dentistry:
Your Recipes for Success
August 19-23

Harvard School of Dental Medicine,
188 Longwood Avenue, Boston, MA
PROGRAM

Monday August 19, 2013

08:00-08:30  Registration/Breakfast

08:30-10:30  “Treatment Planning for Periodontally Compromised Patients”
Dr. Myron Nevins

10:30-10:45  Break

10:45-12:00  “Risk Factors for Periodontally Compromised Patients”
Dr. Myron Nevins

12:00-13:00  Lunch

13:00-15:00  “Current Approaches in Periodontal Regeneration”
Dr. Myron Nevins

15:00-15:15  Break

15:15-17:00  “Teeth: Too Early to Condemn for Extraction”
Dr. Liran Levin

17:00  Adjourn
PROGRAM

Tuesday August 20, 2013

08:00-08:30  Breakfast

08:30-10:30  “Management of Extraction Sockets”
Dr. David Kim

10:30-10:45  Break

10:45-12:00  “Piezoelectric Surgery in Periodontology
and Oral Implantology”
Dr. Soo Woo Kim

12:00-13:00  Lunch

13:00-15:00  “Current Treatment Concepts and Techniques
in Sinus Augmentation Procedure”
Dr. Wahn Khang

15:00-15:15  Break

15:15-17:00  Case Presentations by Participants

17:00  Adjourn
PROGRAM

Wednesday August 21, 2013

08:00-08:30  Breakfast

08:30-10:30  “Enhanced Patient Care with Immediate Dental Implant Therapy: Immediate Placement with and Without Concurrent Loading”
Dr. Ronald Orr

10:30-10:45  Break

10:45-12:00  “From Tooth Loss to Tooth Regeneration”
Dr. Samuel Koo

12:00-13:00  Lunch and Transportation to Live Surgery

13:00-17:00  Lecture and Live Surgery
“3D Guided Implantology: Total Integration from Start to Finish”
Dr. Yong-Han Koo

17:00  Adjourn
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PROGRAM

Friday August 23, 2013

08:00-08:30  Breakfast

08:30-10:30  “Immediate Function for the Edentulous Patient Using Guided and Non-Guided Surgery in Oral Rehabilitation”
Dr. John Chang

10:30-10:45  Break

10:45-12:00  “Guided Implant Surgery”
Dr. Sang Lee

12:00-13:00  Lunch

13:00-15:00  “All Ceramic Restorations for Esthetic Dentistry”
Dr. Mark Wang

15:00  Adjourn
Dear Colleague,

First let us welcome you to the Harvard School of Dental Medicine. The educational program for this special course is directed toward contemporary clinical and scientific knowledge regarding osseointegrated implants.

Recent years have observed the transformation of dental implant therapy from the edentulous to the partially edentulous patient. This expansion has resulted in major changes for tooth replacement and frequently is of great benefit to the patient, but also results in new challenges.

Our program will range from treatment planning with a focus on the clinical decision of whether to save the tooth or replace it with a dental implant to placing and restoring the implant on the same day. It will focus on the decision tree that helps to decide which procedures are most predictable to resolve individual problems. New biologics have brought about much enthusiasm for bone enhancement of local edentulous ridges in sites that previously were impossible. And finally, the implant restoration! There will be a demonstration of the evolution of new thoughts for implant restorations.

We expect this to be a very valuable educational experience and are pleased to have you visit Harvard.

Myron Nevins
Myron Nevins DDS
Associate Clinical Professor
Course Introduction

The introduction of endosseous dental implants in 1969 by Per Ingvar Brånemark was a milestone for contemporary dental treatment. A subsequent report provided 15-year data that helped secure the place of osseointegrated dental implant in dentistry for edentulous patients (Adell et al., 1981). This therapy expanded to the partially dentate patients quickly, providing a paradigm change for the periodontally compromised individuals. Endosseous dental implants have become the treatment of choice to replace missing teeth and provide function and esthetics without damaging remaining dentition. Since their introduction, the patient population who would benefit from safe and efficacious prostheses anchored by titanium implants has continually expanded.

Implant dentistry requires a team approach (surgeon, restorative dentist, hygienist and lab technician) in order to execute comprehensive and competent treatment planning and to provide the most appropriate surgical and restorative treatments. A follow-up maintenance therapy for the patients will also need to be considered. Thus, an effective interaction and communication among all members of the implant team are crucial to deliver successful surgical and restorative treatment outcomes to patients requesting implant therapy.

This course is designed to present the most recent and innovative knowledge and clinical skills required to achieve successful clinical outcomes in implant dentistry. This HSDM course will consist of 5 days of intensive lectures, live surgeries and case presentations by participants. Lectures will be presented by full- and part-time HSDM periodontists and prosthodontists as well as invited lecturers on specific topics. Participants will be exposed to evidence based and biologically sound implant treatment protocols, emerging biomaterials and biologics, innovative minimally invasive technologies, and advanced soft and hard tissue grafting procedures.

Reference:

Course Goals & Objectives

The aim of this course is to provide participants with the foundation needed to make sound clinical judgments based on a predictable scientifically-based implant reconstruction protocols. After completion of this course, participants will:

1. Be able to review the evidence needed to make safe and predictable clinical judgments.
2. Be introduced to the concept of comprehensive interdisciplinary case presentations and treatment planning sequences for predictable Perio-Prosthetically driven implant dentistry.
3. Be able to understand hard and soft tissue anatomy and wound healing process.
4. Be exposed to the principles and steps needed to augment soft and hard tissues for dental implant placement and restoration.
5. Be able to recognize, manage and prevent surgical and prosthetic difficulties associated with dental implant.
6. Be familiar with all parameters of the latest digital imaging systems used to diagnose, treatment plan, place and restore dental implants in simple to complex cases.
Dr. Myron Nevins  
Associate Professor, Harvard School of Dental Medicine

“Treatment Planning for Periodontally Compromised Patients”  
“Risk Factors for Periodontally Compromised Patients”  
“Current Approaches in Periodontal Regeneration”

All periodontal therapeutic decisions must be predicated on reserving and improving the esthetic, phonetic and functional definition as perceived by both the therapist and the patient. Although it is impossible to circumvent the modifiers of physical health, patient behavior, financial capabilities and performance variability as they pertain to treatment modalities, there must be an end point goal of treatment that comes to fruition. These lectures will present a definitive goal of periodontal therapy for patients with chronic adult periodontitis. Topics to be discussed include treatment planning, pocket management, periodontal regeneration, furcation treatment and dental implants. The critical question: what would we do it if was our own dentition?

Learning objectives:
1. Understand the criteria of successful treatment planning for the periodontally compromised patient.
2. Consider and value the definition of an ideal maintenance program.
3. Learn to coordinate interdisciplinary treatment planning.
Over the past decade, the use of osseointegrated implants as a foundation for prosthetic replacement of missing teeth has become widespread. However, certain risk factors might predispose individuals to lower success rates and to a greater hazard for implant failure. The misleading public notion (sometimes supported by dentists) that implants will survive forever leads in some cases to early extractions of teeth. We, as dental professionals, should avoid basing our treatment planning on thoughts and beliefs and stick as much as possible to evidence based practice. Implants are not a magic solution for every diseased tooth.

Implants will not survive forever, probably, and are usually not a totally risk-free procedure. Though it seems very tempting to get rid of an unhealthy tooth and place an implant in its place, this is not always the standard treatment. Natural teeth can serve our patients for a very long term with proper management and maintenance. The option of replacing the tooth with an implant should not be a major factor leading to extraction. Furthermore, we must remember that most of the available literature concerning dental implants is of rather short term with regards to our patients’ life expectancy.

**Learning objectives:**
1. Learn about long-term tooth and implant survival.
2. Learn the correct sequel for implant treatment in periodontal patients.
3. Understand the limitations of current tooth prognostic systems.
Dr. David Kim  
Course Co-Director  
Director, Advanced Graduate Periodontology Program  

"Management of Extraction Sockets"

The success and application of osseointegration placed a new demand for post-extraction socket preservation, especially in maxillary anterior regions. These prominent rooted teeth have demonstrated significant loss of the buccal plate resulting in inappropriate bone morphology to achieve optimal esthetic results.

Recent reports indicated the advantage of bone grafting with and without a barrier membrane simultaneously at the timing of the extraction. The continuous evolution of new products has improved the likelihood of success. With this in mind, we will present our latest clinical results on the use of different biomaterials that can be successfully utilized to preserve remaining socket walls for future implant placement.

Learning objectives:
1. Review sequences of extraction socket healing including subsequent contour and dimensional changes, and recognize indications for bone grafting procedures.
2. Describe the appropriate choice of bone grafts and barrier membranes to reconstruct deficient alveolar ridges for implant placement.
3. Recognize potential complications of bone grafting procedures.
Dr. Soo Woo Kim
Acting Director, Predoctoral Periodontology

“Piezoelectric surgery in Periodontology and Oral Implantology”

Piezoelectric surgery has now become an important part of the atraumatic surgical treatment in periodontology and implantology. Piezoelectric surgery instrument enables us to make the surgery accurate, minimally invasive, and efficacious. It can be utilized in atraumatic extraction, osteoplasty, sinus lift and implant site preparation. This presentation will discuss the overview of instrument design rationales, and its application.

Learning objectives:
1. Understand the history of development and rationale for design.
2. Understand how to use the instruments in various clinical scenarios.
Dr. Wahn Khang  
Clinical Associate Professor,  
University of Maryland Baltimore College of Dental Surgery  

“Current Treatment Concepts and Techniques in Sinus Augmentation Procedure”  

A review of maxillary sinus floor elevation as an integral part of restoring the posterior maxilla will be discussed. The related anatomy of the area and the current techniques available will be reviewed. The classic lateral antrostomy pioneered by Tatum appears to be the most common sinus lift procedure. The more conservative crestal approach, advocated by Summers, provides another effective way of allowing implant fixture placement in the atrophic maxilla. There are newer approaches to gain access to the maxillary sinus area utilizing different surgical techniques and instrumentations. They seem to have helped clinicians achieve more favorable outcomes in effortless and simplified manner.  

Learning objectives:  
1. Understanding basics of sinus elevation surgery to gain alveolar bone volume.  
2. Discuss lateral window and osteotome technique.  
3. Introduce and discuss new technique to gain access to antral space by utilizing different instrument including drill sets and safety stop.
Dental implants have currently become the standard of care for tooth replacement. Implants are successful, however, there still exists the disadvantage of extended treatment time. Although the preservation of alveolar bone and soft tissue support is not ensured with implant placement directly following tooth removal, the technique does offer the advantages of shortened treatment time and the elimination of additional surgical procedures. Most importantly, immediate implant placement offers comparable success rates to staged technique. A goal of the modern implantologist is to do all possible to create timely, predictable, and aesthetic results. This clinically-oriented presentation will focus on the issues of immediate placement including historical perspective, patient selection, indications, contra-indications, armamentarium, surgical technique, complications, and special considerations. The option of concurrently placing a temporary crown over immediate implants in the anterior region will also be presented.

Learning objectives:
1. Understand the indications and contraindications for immediate implant placement.
2. Learn the surgical technique for immediate implant placement including the characteristics for the best implant selection.
3. Learn to manage compromised bone situations and post surgical complications.
4. Become familiar with the concepts of immediate placement versus immediate provisionalization and load.
Dr. Samuel Koo  
Instructor, Harvard School of Dental Medicine  

“From Tooth Loss to Tooth Regeneration”  

Many patients are still losing their teeth despite of advances in preventive and regenerative dentistry. Extraction of teeth may be avoided in certain cases using orthodontic and periodontal regenerative procedures. However, if the tooth extraction is indeed necessary, dental implant with or without bone augmentation should be planned as a team approach. This lecture will discuss current research leading to the regeneration of a whole tooth using stem cell and genetic modification.  

Learning objectives:  
1. Understand various orthodontic and periodontal procedures to avoid a tooth loss.  
2. Discuss the different treatment options from simple to complex cases involving dental implants.  
3. Understand current research leading to the tooth regeneration.
Dr. Yong-Han Koo
Private Practice

“3D Guided Implantology: Total Integration from Start to Finish”

This program is specifically designed to provide a unique experience in 3D implantology from start to finish. This course will demonstrate how to plan implants from a perio-prosthodontic prospective, present the case in the most comprehensive and clear format, and get precise surgical guides that match your plan. You will be able to execute the surgery with the highest predictability in the least invasive fashion.

Learning objectives:
1. Appreciate and understand the value of precision in dental implantology utilizing 3D CBCT from the diagnosis and treatment planning phase to the final surgical & prosthetic execution phase.
2. Identify significant anatomy and pathology to avoid complications and to increase predictability.
3. Treatment plan from a perio-prosthodontic prespective using 3D CBCT in order to provide an ideal, functional, and esthetic outcome.
5. Observe live surgery: 3D CBCT guided implant placement.
Dr. Shigemi Ishikawa-Nagai  
Assistant Professor, Harvard School of Dental Medicine  

“Color Science for Esthetic Dentistry”

Although technological advances have significantly benefited dental medicine, one area of restorative dentistry has lagged behind: Color. Color is a crucial aspect of esthetic dentistry, often has been treated as an art rather than as a science. Even at academic conferences, both dentists and dental technicians tend to focus more on the beauty of their work than on the science behind it. However, in other industrial fields, color is considered a science. Engineers, for example, use spectrophotometers to analyze the color of materials such as paint, plastic, and fiber, utilizing scientific data: reflectance values or CIE L*a*b*. In contrast, dentistry has no iron-clad standard or scientific basis with which to accurately determine, assess and/or reproduce color.

This lecture will present the color science, which helps esthetic success for both restorative dentistry and implant dentistry.

**Learning objectives:**  
1. Learn to accurately determine the tooth color.  
2. Learn to reproduce the color on ceramic restoration.  
3. Learn about the origin of gingival color and etiology of discoloration.  
4. Learn about the gingival phenotype and clinical consideration.  
5. Learn about the esthetic clinical approach for success on anterior single implant restoration.
Dr. Giuseppe Intini  
Course Co-Director  
Assistant Professor, Harvard School of Dental Medicine  

"Platelet-based Therapy in Guided Bone Regeneration"

The goal of the lecture is to explore the potential of the platelet-based therapy for bone regenerative procedures currently utilized in dentistry. We will first look at the biology of the platelets and of the growth factors that they release upon activation. Subsequently, we will evaluate all the methods available to the clinicians for the preparation of platelet-based products, highlighting the pros and cons of each method. Finally, we will explore a series of clinical cases in which a method based on the combination of calcium sulfate and platelet-rich plasma has been successfully utilized for bone regenerative procedures.

**Learning objectives:**
1. Learn about the biology of platelets.
2. Learn about the current tools available to harness platelets for bone regenerative surgery.
3. Learn about novel clinical strategies to achieve success in bone augmentation therapy.
Conventional complete dentures have been shown to be poor replacements of the natural dentition in terms of masticatory performance. Implant overdentures (IODs) have been accepted as an alternative treatment option for edentulous patients; indeed, some have even gone so far as to deem mandibular implant overdentures the “standard of care” for edentulous patients. However, while it is the case that studies focusing on patient-centered outcomes have demonstrated greater patient satisfaction and perceived improvement in mastication, studies that rely on objective outcomes have not conclusively demonstrated that implant overdenture therapy routinely results in enhanced masticatory function compared to conventional complete denture therapy.

**Learning objectives:**
1. Review literature relevant to edentulous patients and masticatory function.
2. Understand the indications for IOD therapy.
3. Understand the role conventional dentures play in planning IOD therapy.
4. Be comfortable anticipating outcomes of IOD therapy, including potential prosthetic complications.
The demand on removable prosthetics is ever increasing with our aging population and growing acceptance of implant supported overdenture therapy. While various dental disciplines, such as implant dentistry and fixed prosthodontics have readily adopted digital technology, the traditions in treatment planning and processing of removable prostheses have changed rather minimally. Recently, CAD/CAM technology has been introduced as a unique revolutionary tool in the field of denture fabrication. The CAD/CAM dentures have great potential of improving patient care with increased precision, speed and productivity. This innovative technology could likely transform the concept of edentulous, full-mouth rehabilitation and treatment planning.

Learning objectives:
1. Introduction of CAD/CAM technology in complete denture prosthodontics.
2. Understand of current properties and procedures in CAD/CAM fabricated dentures.
3. Understanding of key advantages with the use of CAD/CAM dentures.
4. Understanding of areas of further improvements and research involved with CAD/CAM dentures.
5. Exposure to clinical outcomes with the use of CAD/CAM dentures.
Dr. John Chang  
Clinical Instructor, Harvard School of Dental Medicine

“Immediate Function for the Edentulous Patient Using Guided and Non-Guided Surgery in Oral Rehabilitation”

How does a clinician determine when to incorporate the concept of "immediate function" into the treatment plan? Does the choice of restorative material make a difference? What are the indications for using "guided" or "non guided" (open flap) surgery? The presenter will use an innovative surgical technology to explain his criteria in treatment planning and practice.

Learning objectives:
1. Learn to determine the appropriate patient specific surgical guide system for computer guide cases.
2. Learn the theory and technique of immediate function using a minimum number of 4 implants per arch.
2. Learn to select cases which can be treated with either guided- or non-guided approach.
3. Learn to integrate CAD/CAM technology to your patient treatment planning.
4. Learn to recognize, manage and prevent complications associated with guided surgery.
Computer guided minimally invasive implant treatment promises to revolutionize the way we practice implant dentistry. This new technology allows implants and associated restorations to be precisely placed at the same procedure directly through the gingiva in an hour or less. The advantages of computer guided surgery include a less invasive implant placement with minimal post-operative discomfort or swelling and associated immediate fixed restoration delivery in one relatively short appointment, minimizing possible bone grafting and avoidance of destruction of vital structure. This presentation will cover the computer guided implant placement in different clinical situations, combined application with cad-cam technology and a workflow of the steps: a) diagnosis b) fabrication of radiographic guide, c) 3-d planning, d) fabrication of surgical stent, e) digitally guided implant placement.

Learning objectives:
1. Understand how computer guided surgery works and how to formulate a restorative driven implant treatment plan using interactive ct software.
2. Understand how different approaches of guided surgery depend on clinical situations.
3. Understand sequencing of treatment and case management.
4. Be familiar with the application of digital implant dentistry along with the computer-guided system.
5. Learn to incorporate the concept of interactive planning and computer generated surgical guides to perform implant surgery.
Dr. Mark Wang  
Instructor, Harvard School of Dental Medicine

"All-ceramic Restoration for Esthetics Dentistry"

All-ceramic restorations are presented to dentistry as ultimate choice for esthetic rehabilitation. The presentation will discuss the following:
1. The history of dental porcelain and dental ceramics.
2. The classification of dental ceramics according to the fabricating processes.
3. The comparison of the different dental ceramics.
4. The evolution of the dental ceramics into cad-cam dentistry era.

Learning objectives:
1. Understand the role of the contemporary dental ceramics in regard the properties, the materials of choice, the indications, and the applications.
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