Computer-Guided Implant Dentistry

A hands-on course on virtual implant planning, computer-guided surgery and restorative collaboration

Herman Ostrow School of Dentistry of USC
Saturday - Sunday, August 1 - 2, 2015
9:00 am - 5:00 pm
Implant dentistry is a predictable treatment modality providing function and aesthetics. Proper implant positioning is a critical factor to ensure a successful outcome. There are many methods to place implants that allow for adequate osseointegration. However, these traditional techniques do not guarantee accurate implant positioning. Factors such as the surgeon’s hand stability, variation in bone quality, visual obstacles and improper surgical guides can compromise the implant surgery. The misplacement of implants leads to non-axial implant loading, complicated restorative process, increased expense, compromised esthetics as well as biologic and prosthetic complications.

This course will present optimal techniques and technology for accurate placement of implants and their predictable restoration. Participants will be exposed to a restoratively driven process coordinated between the different members of the dental team. The course will review the process of pre-surgical design of the definitive restoration through laboratory wax-up or a computer-assisted design (CAD). The benefits of creating a virtual patient image, diagnostics and surgical simulation will be outlined. Course participants will be exposed to the advantages of computer surgical navigation leading to accurate implant positioning.

The hands-on exercises will allow participants to virtually plan multiple cases and gain knowledge on using implant-planning software. A computer-guided implant placement followed by fabrication of an immediate restoration is included in the exercise.

The course will provide clinicians with knowledge on the optimal way to practice implant dentistry from restoration design, through patient imaging and virtual implant simulation to a computer-guided surgery. This well-coordinated team approach leads to a more predictable implant positioning and an optimal restorative process while promoting patient safety.

**Topics to be covered:**
- Principles of proper implant positioning
- Limitations of traditional implant placement
- The diagnostic and virtual wax-up
- Radiographic templates and scan appliances
- Patient imaging protocols
- How to “read” a CT scan
- Implant-planning software
- Image analysis for anatomic/restorative diagnosis
- Virtual implant surgery
- Fabrication of surgical guides
- Computer-guided surgery techniques: advantages and limitations
- Immediate implant provisional fabrication
- Management of complications
- Creating a virtual wax up
- Computer surgical planning of different clinical case scenarios
- Fabrication of an immediate provisional restoration
- Capture of the peri-implant tissue for proper emergence profile
- Review of participants’ clinical cases with computer software and help with planning and obtaining surgical guides