Objective

The ideal treatment planning, accurate placement, and functional restoration of dental implants for the completely edentulous patient can be challenging. Anatomical limitations can make implant location difficult to determine.

The use of CT scans and surgical planning software to produce a CAD/CAM surgical guide, as well as the use of a flapless surgical technique, can make implant placement more predictable, safer, and easier for patients. Furthermore, CAD/CAM-guided fabrication of an provisional restoration and screw-retained definite prosthesis can result in predictable and successful full mouth reconstruction.

Study Design (Case Report)

- Immediate Removable Complete Denture
- CAD / CAM Surgical Guide : OsstemGuide
- CAD / CAM Provisional restoration
- Convertible Abutment, Lateral fixation screw
- CAD / CAM full Zirconia prosthesis

Conclusions

The advantages of this procedure, for the completely edentulous arch, include (1) shorter surgery times, (2) shorter treatment times, (3) less invasive, flapless surgery and, therefore, less chance of swelling, less pain, and faster healing.
Using the surgical guides and radiographic guide duplications, stone casts are mounted on the semi-adjustable articulator. Then surgical indexes are made on the mounted casts.

**Upper and Lower Surgical Index**

**Surgical Procedure: Flapless Implantation**

Flapless Tissue Punch

Installation of Osstem TSIII SA implants

Surgical Guide oriented in the mouth using a surgical index fitted to the opposing radiographic duplication and stabilized with anchor screws.

8 fixtures positioned and seated correctly on the sleeve of surgical guide.

Convertible Abutments

16 fixtures in maxilla

Minimally invasive guided surgery results in minimal postsurgical trauma of periimplant soft tissue.

Precise osteotomy by Osstem Guide

Healing Caps screwed into convertible abutments

Relining of dentures with soft tissue conditioner

2 months after extraction.

Pre-surgical Procedure:

**CAD/CAM Planning and Fabrication of Surgical Guide and Surgical Index**

**CAD/CAM planning for mandible.**

**CAD/CAM planning for maxilla.**

Osstem Guide software Planning Program allows for prosthetic guided implant positioning.

**CAD/CAM manufactured surgical guides**
18 implants installed at the time of surgery

Prosthetic Procedure: CAD/CAM Provisional Restoration

Lingual-screw-retained PFM bridge for maxillary anterior implants
Screw-retained CAD/CAM full zirconia bridges

Final radiograph

Screw-retained full mouth implant rehabilitation