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Dr. Scherer is a full-time private practice prosthodontist in Sonora, CA, and an Assistant Clinical Professor at Loma Linda University. He has published articles related to implant dentistry and digital technology with a special emphasis on implant overdentures.

Dr. Scherer's involvement in digital implant dentistry has led him to develop and utilize new technology with CAD/CAM surgical systems and outside-the-box radiographic imaging concepts. Dr. Scherer also maintains four YouTube channels—"LearnLOCATOR," "LearnLODI," "LearnSATURNO," and "The 3D Dentist"—focusing on standard and narrow diameter dental implant procedures and digital dentistry.



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CASE PRESENTATION

Stabilizing a Maxillary Denture with Narrow-Diameter Overdenture Implants

A healthy 75-year-old female presented with a loose maxillary complete denture and the desire to place implants to assist the denture to remain in place. Approximately 20 years ago, she had implants placed on her mandibular arch and an implant overdenture fabricated. She was always told, however, that her bone was insufficient in her maxillary arch for implants. She was referred to the author's practice for evaluation for narrow diameter implant placement.

A CBCT scan of the patient was made using cotton rolls for occlusal and soft-tissue separation in combination with a radiopaque PVS impression liner placed on the intaglio of her maxillary denture to enhance the radiographic visualization. A second CBCT scan of the denture was made and an extraoral digital impression was used with an intraoral scanner (True Definition, 3M Oral Care). Six 2.4mm x 12mm ZEST LOCATOR Overdenture Implants (LODI, ZEST Anchors) were planned in the computer software (Invivo, Anatomage). A computerized surgical guide was planned and fabricated (Anatomage Guide, Anatomage).

The patient was anesthetized, complete adaptation of the surgical guide confirmed, osteotomies prepared, and implants (LODI, ZEST Anchors) were placed using a minimally invasive technique. Recesses in the denture were prepared

using specialized burs specifically designed for overdentures (Denture Prep & Polish Kit, ZEST Anchors). LOCATOR abutments (ZEST Anchors) were attached to the implants and connected the denture the same day using an overdenture attachment material (CHAIRSIDE, ZEST Anchors). The LOCATOR Black Processing Male inserts were kept inside of the denture and the patient was seen for recall 8 weeks later, when the tissues were fully healed. At the recall appointment, the inserts were changed from the processing males and into the light, standard-range retentive male inserts. The patient was followed up over the course of several years and has continued to report a high degree of satisfaction.



Figure 1—The patient presented with a loose maxillary complete denture, requesting implants to help stabilize her denture. Examination of the maxillary ridge shows adequate keratinized soft tissues, narrow alveolar ridges, and adequate prosthetic space for flapless dental implants.



Figure 2—Radiopaque PVS impression material (Green-Mousse, Parkell) was placed onto the intaglio surface of the complete denture and a closed-mouth



Figure 3—Cotton rolls were placed and a CBCT scan of the patient was completed. A second scan of the patient's denture alone with the radiopaque PVS liner was also completed.



Figure 4—An intraoral scanner (True Definition, 3M Oral Care) was utilized to scan the radiopaque PVS liner to generate a soft-tissue model for computer planning.

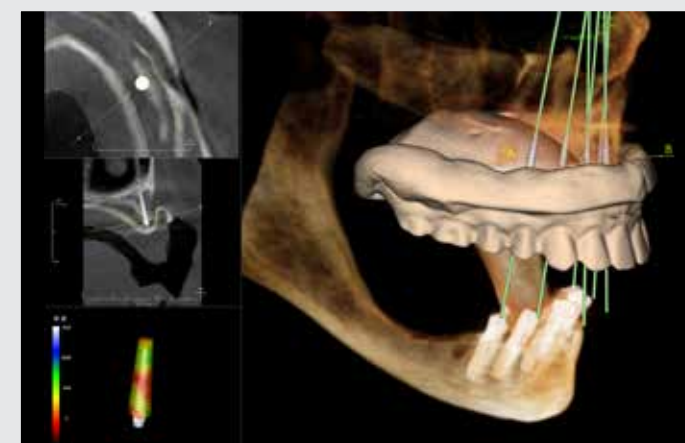


Figure 5—Six 2.4mm x 12mm LOCATOR overdenture implants (LODI, ZEST Anchors) were planned in CBCT dental implant planning software (Invivo, Anatomage).



Figure 6—The patient was anesthetized, the surgical guide placed, and sequential osteotomies were prepared with the assistance of the surgical guide.



Figure 7—LODI implants were placed through the guide using a minimally invasive, flapless approach.



Figure 8—LOCATOR abutments were placed onto the LODI implants using the LOCATOR core tool.



Figure 9—Final appearance of maxillary implants with abutments firmly placed onto each implant.



Figure 10—Denture caps were placed on the LOCATOR abutments with block-out spacers and PVS utilized to verify passive fit of the denture over the caps. Recesses were created within the underside of the complete denture using specialized overdenture preparation burs (Denture Prep & Polish Kit, Zest Anchors).



Figure 11—The denture caps were attached to the denture using an overdenture attachment material (CHAIRSIDE, ZEST Anchors). Processing males were left inside of the denture for 8 weeks.



Figure 12—Final appearance of the LODI implants at 2 years.