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**KEY TAKEAWAYS**

- The LOCATOR F-Tx Fixed Attachment System is delivered in a convenient all-in-one double-ended vial with a sanoprene cap used to deliver the abutment.
- Chairside conversion of an immediate mandibular denture was possible using traditional restorative techniques.
- The final overdenture required no retention screws, with no cement below the gingival tissues or screw-holes to fill.

## Avoiding a Full Immediate Mandibular Denture Using an Implant-Supported Fixed Prosthesis

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An 88-year-old man living overseas came to visit his daughter, a general dentist in South Florida. Several months prior, his general dentist back home had extracted his mandibular right third molar due to extensive submarginal decay. After the extraction, the patient became disconcerted because his existing partial denture was very loose. The original treatment plan was to extract his remaining mandibular left canine and lateral incisor and provide him with an immediate mandibular denture. However, to improve his quality of life, the present author instead recommended an implant-supported fixed overdenture. Because of severe bilateral posterior ridge resorption, implant placement was limited to the mandibular anterior region between both mental foramina. This case demonstrates the use of the LOCATOR F-Tx® Fixed Attachment System (Zest Dental Solutions, [zestdent.com](http://zestdent.com)), which represents a paradigm shift for fixed-arch implant-supported prostheses.



FIG 1.

**FIG 1.** Frontal view of 88-year-old male patient with a mandibular partial denture being poorly retained by two remaining mandibular teeth. Loss of the right third molar caused tilting of the partial denture, resulting in lift from the posterior left of the partial denture.



FIG 2.

**FIG 2.** Severe bilateral ridge resorption was evident with the partial denture removed. The patient was applying denture adhesive two to three times per day to be able to function without discomfort.

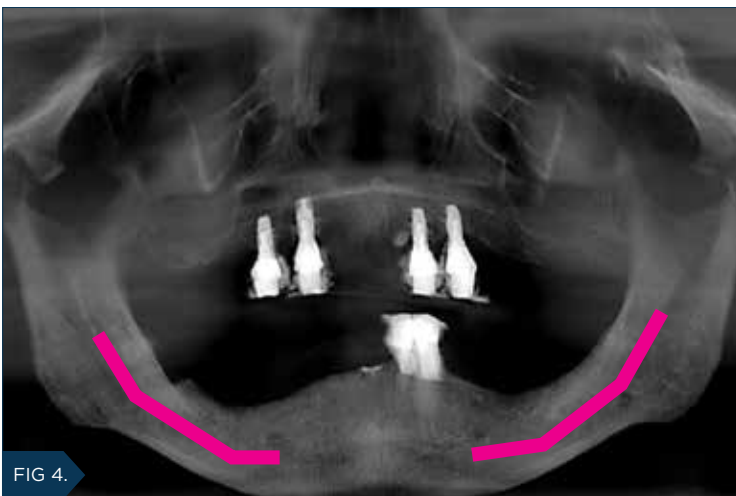


FIG 4.

**FIG 4.** Preoperative CT scan with reconstructed panoramic radiograph showing severe bilateral ridge resorption posterior to the mental foramina.



FIG 5.

**FIG 5.** Duplicate of immediate denture in clear acrylic with gutta-percha 10-mm-length pieces used as scanning appliance aid and implant surgical stent. A CT scan was taken after surgical extraction of the mandibular left canine and lateral incisor.



FIG 3.

**FIG 3.** The LOCATOR F-Tx all-in-one packaging includes: abutment, denture attachment housing with a black processing ball screwed in place for try-in and laboratory work, an additional black processing ball, three additional polyetheretherketone (PEEK) retention balls (low [blue], medium [tan], high [green]), and two blockout spacers.



FIG 6.



FIG 7.

**FIG 6.** New CT scan reconstructed panoramic radiograph with surgical stent/scanning appliance. The surgical stent was used to determine the position of the distal implants and anterior/posterior (A/P) spread. Gutta-percha points were used to help visualize tooth position and location of mental foramina. Posterior implants were tilted distally to help increase A/P to align immediate-load overdenture with opposing maxillary overdenture. **FIG 7.** Osteotomies were completed following the Southern Implants North America (SINA) ([southernimplants.com](http://southernimplants.com)) surgical protocol with guide pins. Posterior guide pins have a 12-degree offset to give orientation of SINA Tri-Nex Co-Axis® 12-degree 4/3 x 13 mm implants. Anterior implants planned were Tri-Nex 4/3 x 13 mm.



FIG 8.



FIG 9.

**FIG 8.** LOCATOR F-Tx abutments were inserted and torqued to the implant manufacturer recommended 35 Ncm. The abutment design focuses on incorporating similar “LOCATOR-like” concepts to a fixed prosthesis. New pink titanium carbo-nitride (TiCN) coating on the abutment is reportedly 32% harder than titanium nitride (TiN), with 26% greater wear resistance and a 64% reduction in roughness versus TiN. The abutment’s spherical interface design allows the denture attachment housing to pivot up to 20 degrees from the vertical to accommodate for implant divergence of up to 40 degrees. Monocryl® suture (Ethicon, Johnson & Johnson, [ethicon.com](http://ethicon.com)) was chosen for flap closure because of its low tissue reactivity and ability to essentially completely hydrolyze by 91 to 119 days. **FIG 9.** The LOCATOR F-Tx denture attachment housings, shown here with white blockout spacers, were rotated so they aligned parallel to each other on a common reference point. Blu-Mousse® VPS bite registration material (Parkell Inc., [parkell.com](http://parkell.com)) would be applied to the intaglio denture surface and the denture inserted over the denture attachment housings. The patient would be guided into proper centric relation until setting of the bite registration material.

**FIG 10.** The recess bur from the CHAIRSIDE® Denture Prep & Polish Kit (Zest) was used to create recess wells. The denture attachment housings would be processed into the wells using CHAIRSIDE Attachment Processing Material.



FIG 10.



FIG 11.



FIG 12.

**FIG 11.** CHAIRSIDE Attachment Processing Material was placed on each denture attachment housing and in each recess well. This material contains no potentially tissue-irritating monomers. A curing light to accelerate setting time of the material was activated twice per implant site both buccal and lingual. The patient was instructed not to open for an additional 5 minutes to ensure complete curing. The immediate denture was removed with the attachment housings and white blockout spacers picked up after the material set (shown here). The blockout spacers were removed, and remaining voids were filled with additional attachment processing material. **FIG 12.** Black processing balls were removed from the denture attachment housings, and polishing caps were placed before filling any voids. The CHAIRSIDE Denture Prep & Polish Kit was used to recontour the overdenture to final contours and to polish.



FIG 16.



FIG 13.

**FIG 13.** Lateral view of the overdenture final contours. New black processing balls were re-placed before try-in of the overdenture after final recontouring and polishing. The overdenture with black processing balls was then tried in, and occlusion was checked and adjusted.



FIG 14.

**FIG 14.** Final high-retention green balls then replaced the black processing balls, as all the implants had achieved the author's clinical criteria for inclusion in an immediate-load prosthesis.



FIG 15.

**FIG 15.** Overdenture inserted after inclusion of high-retention green balls in denture attachment housings.

**FIG 16.** Postoperative CT scan with reconstructed panoramic radiograph demonstrating tapered 12-degree posterior implants angled to improve overall A/P spread, and tapered anterior implants.