



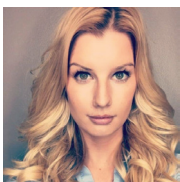
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# GDIA

## Dental Implant CASE REPORT

### Utilization of the Three Implant Overdenture in the Mandible to Increase Retention and Patient Satisfaction



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#### Background & Purpose

The concept of implant-supported/retained overdentures has become a popular treatment modality and gained considerable acceptance.<sup>1,2</sup> In addition, considerable overdenture information has emerged regarding comparisons with other prostheses, such as improvement in the stability and the retention of the complete denture allowing better chewing ability and consequently the use of such prostheses enhances the patient quality of life<sup>1</sup>. Conventional implant overdentures are associated with more complications than any other type of implant prosthesis<sup>3</sup>.

However, the complications do not negate the benefits these prostheses provide for patients<sup>3</sup>. Implant overdentures have been more successful in the mandible than in the maxilla.<sup>4</sup> Maxillary overdentures have a much higher number of mechanical problems than mandibular overdentures. Goodacre et al<sup>5</sup> showed that the most common implant complications for implant overdentures (those with a greater than 15% incidence) were loosening of the overdenture retentive mechanism (33%)<sup>5</sup>

In the mandible, clinicians have successfully used



**Figure 1a,b.** a) Pre-operative clinical view.  
b) Post-operative overdenture.



one implant and have also successfully used multiple implants.<sup>3</sup> Other criteria have been proposed that identify clinical conditions where more than two implants in the mandible may be advantageous. The presence of 1) a large V-shaped anterior ridge, or 2) reduced flanges due to high muscle attachments, or 3) increased occlusal forces (dentate maxilla present or parafunctional habits present), or 4) atrophic ridges that require implants of less than 3.5 mm in width or less than 8 mm in length, are clinical conditions where more than 2 implants are advantageous in the mandible.<sup>3</sup>

The purpose of this case report is to describe a clinical situation where a 3-implants in the mandibular arch are necessary.

### Case Report of a Mandibular 3-Implant Overdenture: Treatment Sequences.

The treatment sequence is summarized as follow:

1. A CBCT radiograph was made and shows that the quality and the quantity of bone available in the mid anterior region of the mandible is acceptable for the placement of 3 implants. Three implants were indicated according to the mandibular bone situation and the opposing arch situation.
2. Surgery was completed in one stage and done under IV sedation by a certified dental anesthesiologist. All remaining teeth in the mandible were carefully extracted, and venipuncture was completed to obtain platelet rich fibrin (PRF) and autologous fibrin glue (AGF) for guided bone regeneration (GBR). Once all mandibular granulomatous tissue was removed with the piezoelectric surgical device, the lower left and right implants were placed at site #22 and #27

respectively. Middle anterior implant was placed at the midline edentulous site. Lower arch osseous resection was reduced via piezoelectric surgery to create appropriate restorability space for the prosthesis. Chromic gut sutures were used, and implants were buried under membranes of CGF and collagen.<sup>6,7,8</sup>

3. An immediate temporary soft relined denture is placed during the healing phase.

4. After four months of healing, all implants were uncovered via button hole approach, healing abutments were placed, new soft liner is placed. Lower implants had parallel angulation and classic locator abutments were selected according to the implant cuff height, and installed.

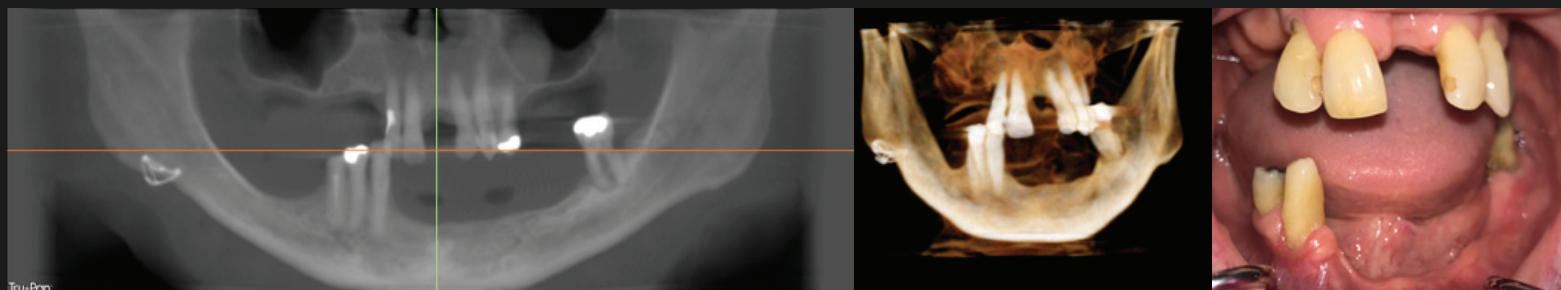
5. Final impressions of the DENTIST™ implants were made via open tray impression protocol and sent to the lab. Wax rim, and teeth try-in were done. Patient was elated to have retentive upper and lower prostheses that were not only functional, but very esthetic.

6. A trial lower denture is verified and approved by the patient.

7. The final lower complete denture is placed and fitted using pressure indicating paste and occlusion is checked and adjusted.

8. Then the lower overdenture is attached to the 3 locator abutments. Instructions were given how to place, to use, and to clean the prosthesis and the implants.

### Pre operation



## Conclusion

With a three-implant overdenture, patient satisfaction was greatly increased compared to the minimum two-implant overdenture. Even though this prosthesis is still implant assisted, not supported, the reduction of anterior posterior rocking can be greatly decreased and can give the patient maximum retention without investing in more implants.

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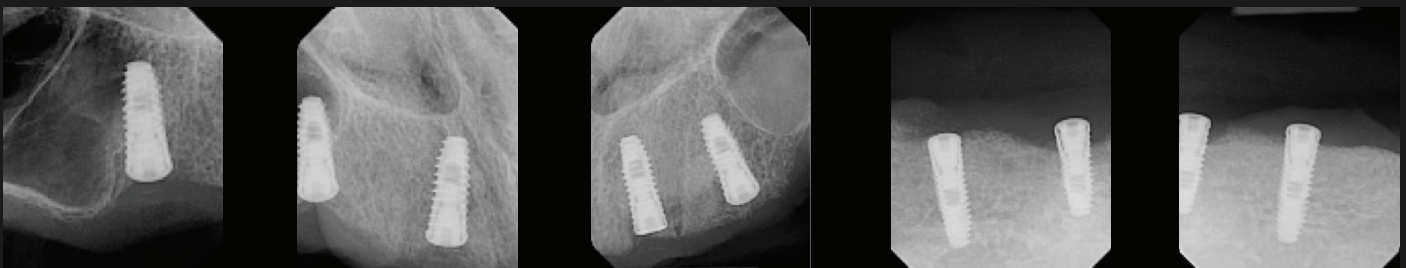


Figure 2. Before.



Figure 3. After.

**Post operation** : 4 month progress after post operation.





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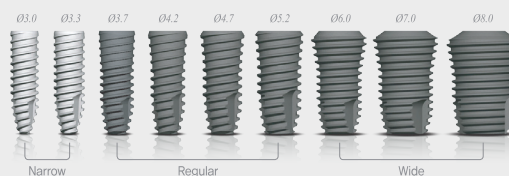
#### Conflict of interest:

The author declares that he has no conflict of interests relating to this article.

# OneQ-SL

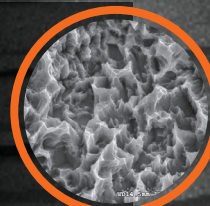
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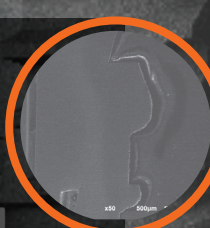
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