

Case Report: Implant-Supported Removable Partial Denture In A Mandibular Kennedy CL II: A Clinical Report



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Citation: Hendi A, Koochaki M. Implant-Supported Removable Partial Denture In A Mandibular Kennedy CL II: A Clinical Report. Journal of Dentomaxillofacial Radiology, Pathology and Surgery. 2019; 8(2):26-30. <http://dx.doi.org/10.32598/3dj.7.4.145>

<http://3dj.gums.ac.ir>



ABSTRACT

The implant-supported removable partial dentures should be an alternative to conventional removable partial dentures and implant-supported fixed partial prostheses when the implant's insertion is confined by bone height and thickness. Placing a single implant in the posterior region would modify the Kennedy Class II configuration to a Kennedy Class III and increase the stability and retention of the prosthesis. The present report describes the clinical techniques of implant-supported RPDs (ISRPDs) in a Kennedy Class II patient.

Article info:

Received: 2019/05/06

Accepted: 2019/05/16

Keywords:

Prosthesis Retention,
Mandible, Denture,
Partial, Removable

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Case Report

The present report describes the clinical techniques of implant-supported RPDs (ISRPDs). The patient is a 45-year-old woman with maxillary and mandibular CL II Mod I dental status.

(Fig 1 A-C) Problem list was inability to properly chewing food due to breaking of the previous denture and lack of aesthetic restorations. The patient did not accept removable denture due to dissatisfaction with the previous dentures and was unable to perform implant assisted FDP due to economic difficulties. Because of marginal gap and metal show, maxillary crowns should be replaced.



Fig 1 A-C: Intraoral and smile view before treatment.

Maxillary FDP and attachment assisted partial denture and mandibular implant-assisted partial denture were considered after diagnostic procedures and consulting with the patient.

Initially, transitional acrylic RPD was designed in CR and favorable VD. In the next step, transitional RPD duplicate and radiographic template was made and CBCT was captured. Then radiographic template became to surgical guide.

Two implants (Implantium , Dentium , Korea) were inserted in the mandibular zone of teeth #18,20.(Fig 2)

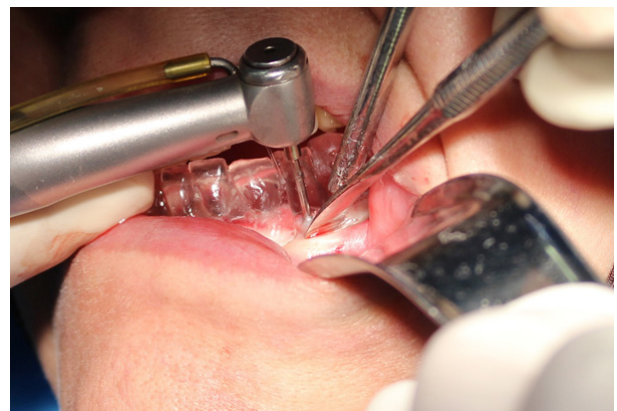


Fig 2: Inserting implants by using surgical guide.

After relining with Tissue Conditioner (GC, japan), transitional prosthesis was delivered to the patient.(Fig 3)



Fig 3: Adjusting transitional prosthesis.

After diagnostic wax up metal ceramic restoration for teeth # 6,7,9,10,12,15 and lithium disilicate veneers(IPS Emax , ivoclar vivadent , Lichtenstein) for teeth #8,11 was considered. Impression was taken with custom tray and 2 phase puty and xlight body additional impres-

sion material (Panasil , Kettenbach , Germany)

Rest seats was designed on the wax of teeth # 6,7,12,15 and extra coronal strategic attachments (Rhein 83 , USA) was inserted on distal of teeth # 6,12 and mesial of tooth # 15 by surveyor.

(Fig 4 A-B)

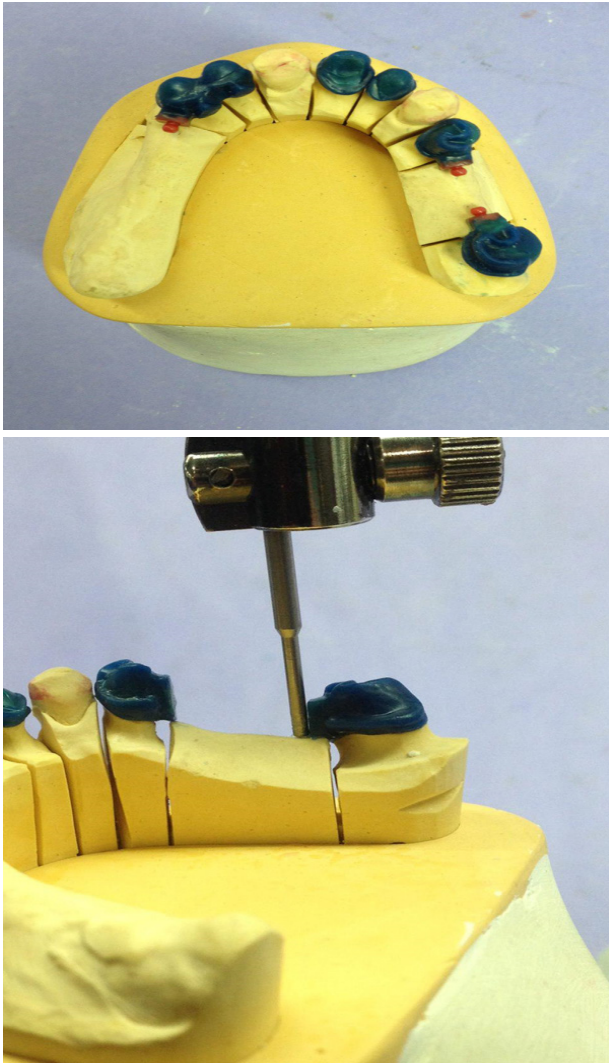


Fig 4 A-B: Master cast on surveyor.

After mounting MCR and veneers on the master cast, relief and block out was done. Then master cast was duplicated and anterior posterior Palatal strap major connector waxed up on the refractory cast. Metal frame work of maxillary RPD was prepared.

3 months after surgery, open tray mandibular impression was taken. Ball on bar treatment plan was considered because

of distal implant angulation (30 degree) and crown height space (CHS=10 mm).

The wax bar with 2 ball attachment was casted and then tested in the mouth. Ultimately, after relief and block out and duplication of mandibular master cast , the framework were designed as lingual bar and embrasure clasp on tooth # 20 ,21 and circumferential clasp on tooth # 18.

After occlusal recording, tooth were arranged with bilateral balance occlusion and dentures were delivered after final processing. (Fig 5 A-B)



Fig 5 A-B: Final restoration delivery view.

The patient had no problem in the 2 year follow and had complete satisfaction with the treatment.(Fig 6)



Fig 6: Smile view after two years of follow-up.

Discussion

The free-end mandibular removable partial denture (RPD) presents some circumscriptions because of its dual support system (teeth and fibro mucosa) with different resilience, anatomical characteristics and transmission of masticatory loads. (1) Serious problems, such as ill-fitting retainers, occlusal disharmony and pain of the soft tissue under the connector or denture base, may happen from the displacement of distal extension RPDs.(2)

So, it is the mutual purpose of the clinician and patient to restore the partially missing dentition with a fixed restoration that represent better longevity. (3) Implant-supported restorations have become a predictable treatment modality to obtain this desirable treatment consequence. Nevertheless, for various reasons, fixed implant-supported restorations might not be prescribed. (4-6)

The implant-supported removable partial dentures should be an alternative to conventional removable partial dentures and implant-supported fixed partial prostheses when the implant's insertion is confined by bone height and thickness. In this situation, a minor number of shorter implants can be placed to stabilize the RPD in vertical direction, provide comfort and increase patient masticatory efficacy (1) , improve the RPD support, enhance retention and stability, preserve the residual ridge underneath the denture base, reduce the stress applied on the abutment teeth, eliminate the need for unesthetic clasp assemblies, and modify unfavorable arch configurations.(7)

Suzuki et al. reported that mandibular implant-supported dentures were extremely reliable for rehabilitation with a high survival rate and showed a good prognosis. (8) Mitrani et al. observed an increase in patient satisfaction, minimal component wear, bone loss within the normal limits and stability of peri-implant soft tissues .(9) Keltjens et al. stated that the insertion of implants in a distal RPD extension provided more stable and dependable occlusion.(10)

The implants might be used for support only using healing caps or for retention with resil-

ient attachments connected to the implants. The Kennedy Class II partially edentulous arch has a unilateral distal extension. An Implant-Assisted Removable Partial Denture (ISRPD) should be used when the tooth loss is extensive. Placing a single implant in the posterior region would modify the Kennedy Class II configuration to a Kennedy Class III and increase the stability and retention of the prosthesis.(11)

Conclusion

In the current case report with Implant-Assisted Removable Partial Denture, optimal aesthetics and function were provided in 3years follow-up.

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