

Introduction

There are several treatment options for rehabilitation of partially edentulous patient including conventional removable partial denture (CRPD) and implant-retained fixed prostheses.¹ And several clinicians considered the CRPD as cost-effective and acceptable alternative treatment option. However the distal-extension RPD, which is dual-support system (tooth and tissue supported), can be associated with several problems related to its limited stability, retention, aesthetics and masticatory efficiency.²

It has been suggested that the proper placement of one or more implants in conjunction with RPD may overcome some of the common problems with distal-extension RPD.¹ The retention and the stability of implant supported RPD(ISRPD) have been successfully improved by using different attachment systems, such as magnets, ball or telescopic attachments.^{3,4}

This case report represents the treatment using ISRPD with magnet (Dentium Co, Seoul, Korea) and stud type attachment (CM Loc®, Cendres+Métaux SA, Biel, Switzerland) in the mandibular Kennedy Class I patient.

Case report

1. Diagnosis & Treatment plan

- CC : Discomfort of mandibular RPD and abutment teeth
- Sex/Age : F / 71Y
- PI : Mandibular Kennedy Class I
- PMH : DM, HTN

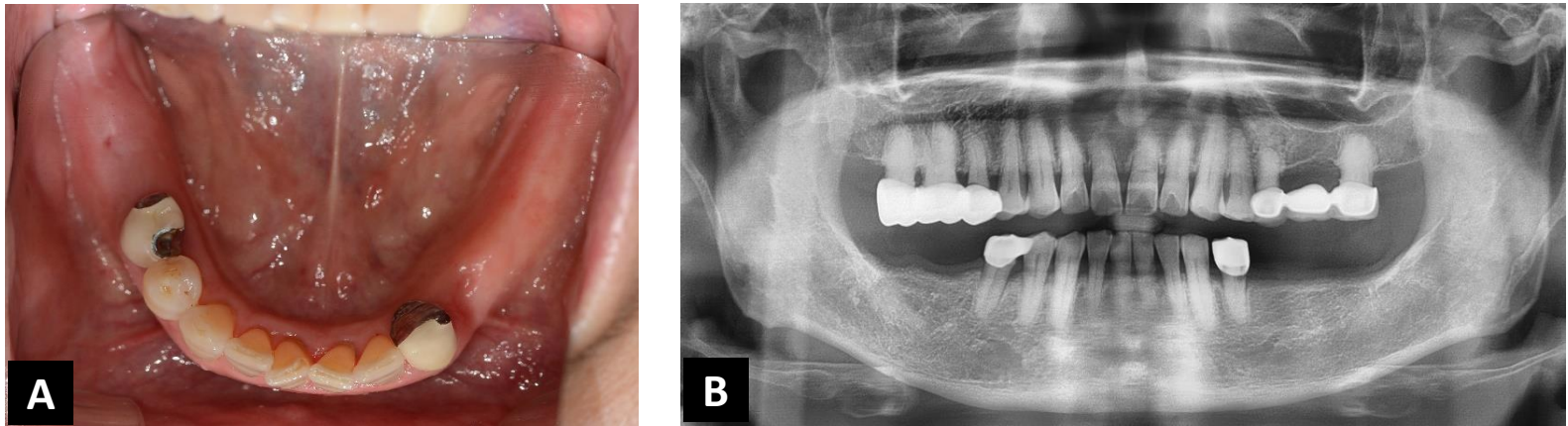


Fig.1 Patient statement. (A) Intraoral photo (B) panoramic view

Treatment plan → ISRPD using magnet attachment

2. Treatment Procedure

Implant Installation

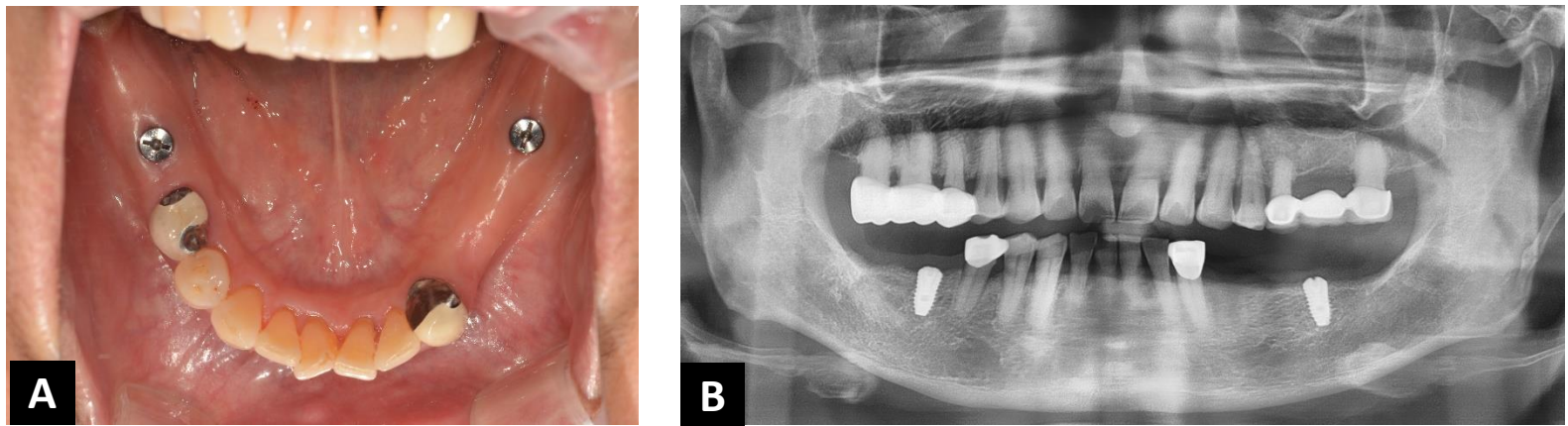


Fig.2 Implant installation (A) Intraoral photo (B) panoramic view

Two implant fixtures (Superline®, Dentium Co., Seoul, Korea) were installed on both mandibular first molar area

Fabrication of ISRPD

RPD was fabricated with conventional method after the implant placement. After the healing period, magnet keepers were connected to implant fixtures and magnet assays were attached to RPD with acrylic denture base resin using closed mouth direct technique.

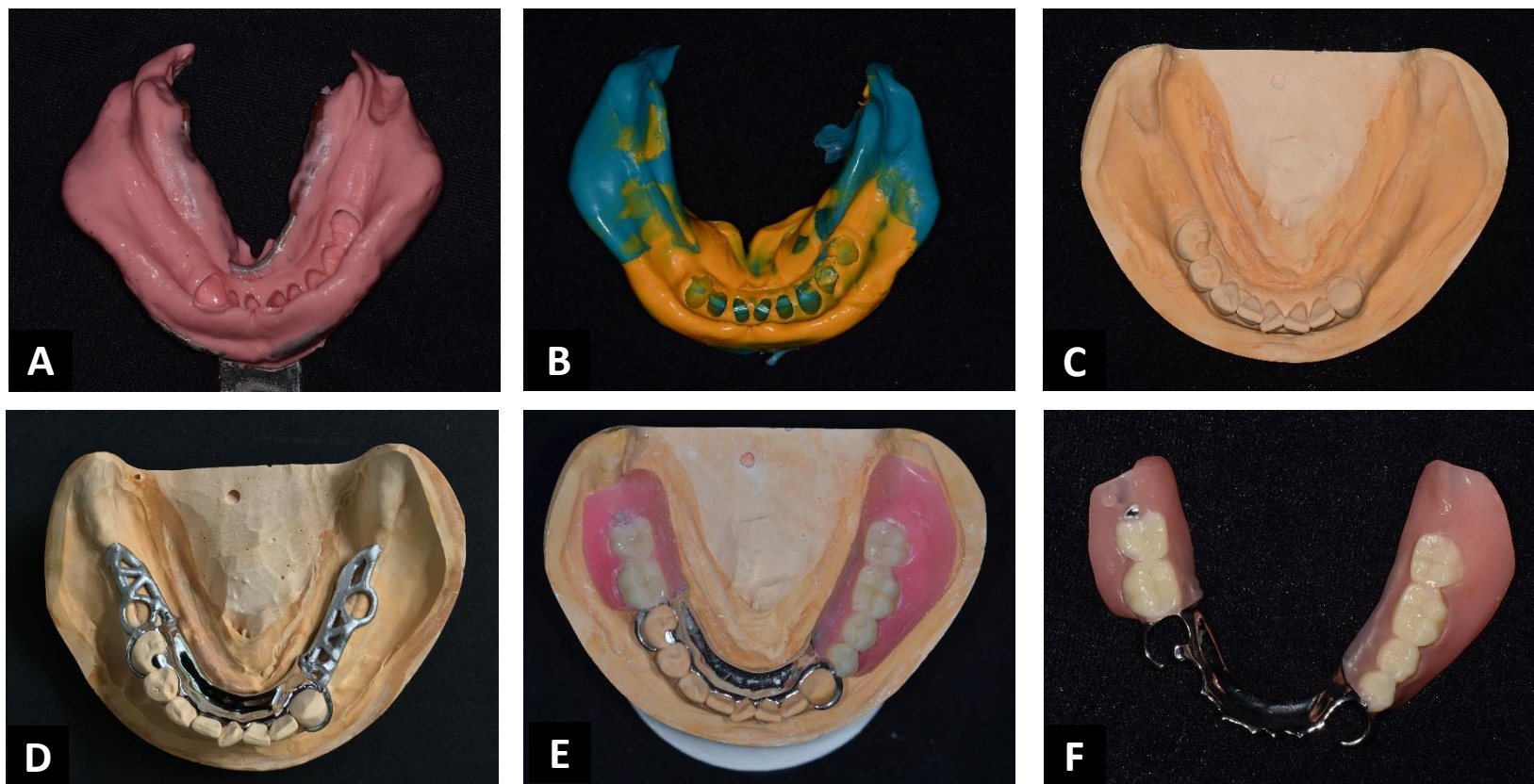


Fig.3 Fabrication of RPD. (A) Preliminary Impression (B) Final Impression (C) master cast (D) Framework (E) Wax denture (F) Completion of RPD

Final prosthesis delivery



Fig.4 Final statement of patient (A) Magnet attachment (B,C) Final prosthesis of ISRPD

1. Diagnosis & Treatment plan

- CC : Cyst on anterior teeth of maxilla, Discomfort of biting
- Sex/Age : F / 67Y
- PI : Mandibular Kennedy Class I
- PMH : DM, HTN, Angina pectoris

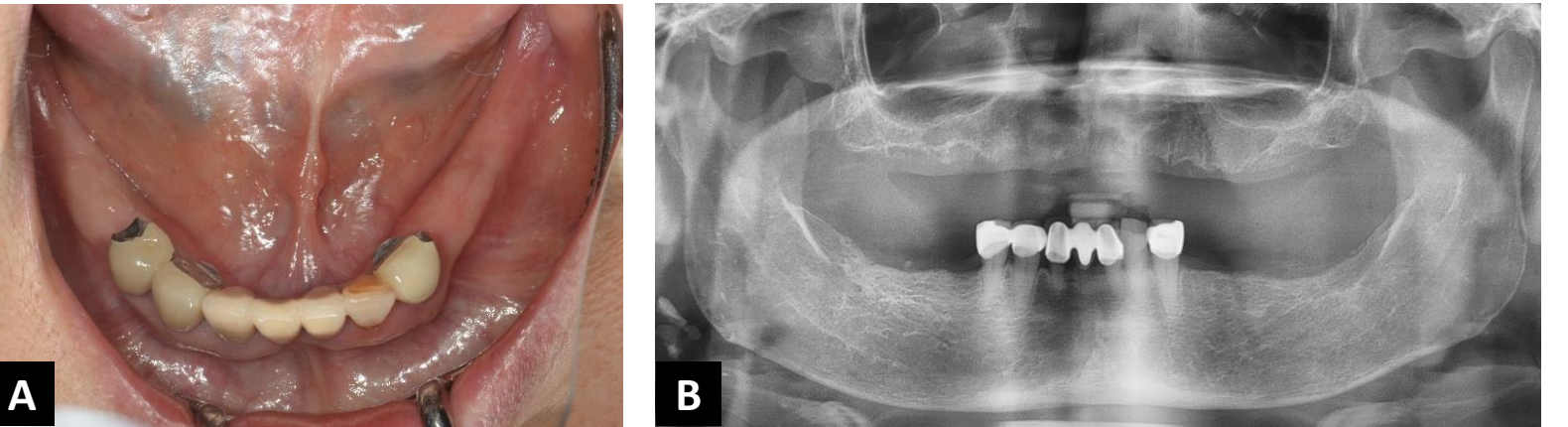


Fig.5 Patient statement. (A) Intraoral photo (B) panoramic view (C) Intraoral photo after delivery of surveyed crown (D) panoramic view after delivery of surveyed crown

Treatment plan → Converting old RPD to ISRPD using stud attachment

2. Treatment Procedure

Implant Installation

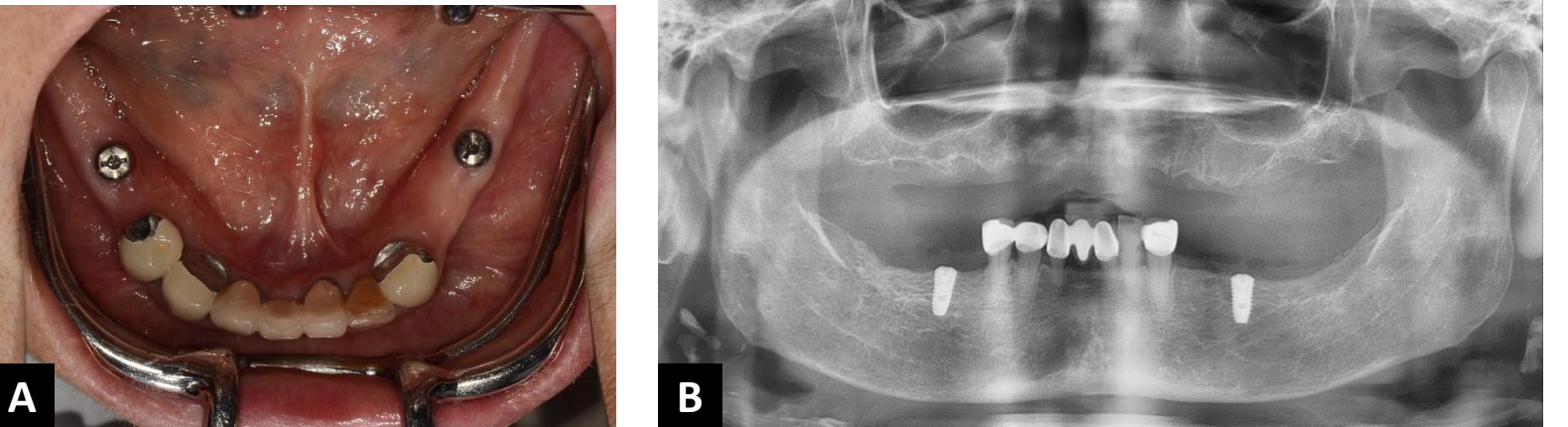


Fig.6 Implant installation (A) Intraoral photo (B) panoramic view

Two implant fixtures (Superline®, Dentium Co., Seoul, Korea) were installed on both mandibular second premolar area.

Fabrication of ISRPD

ISRPD was modified from patient's old denture. After the healing period, stud attachments (CM Loc®, Cendres+Métaux SA, Biel, Switzerland) were connected to old RPD with acrylic denture base resin using closed mouth direct technique.

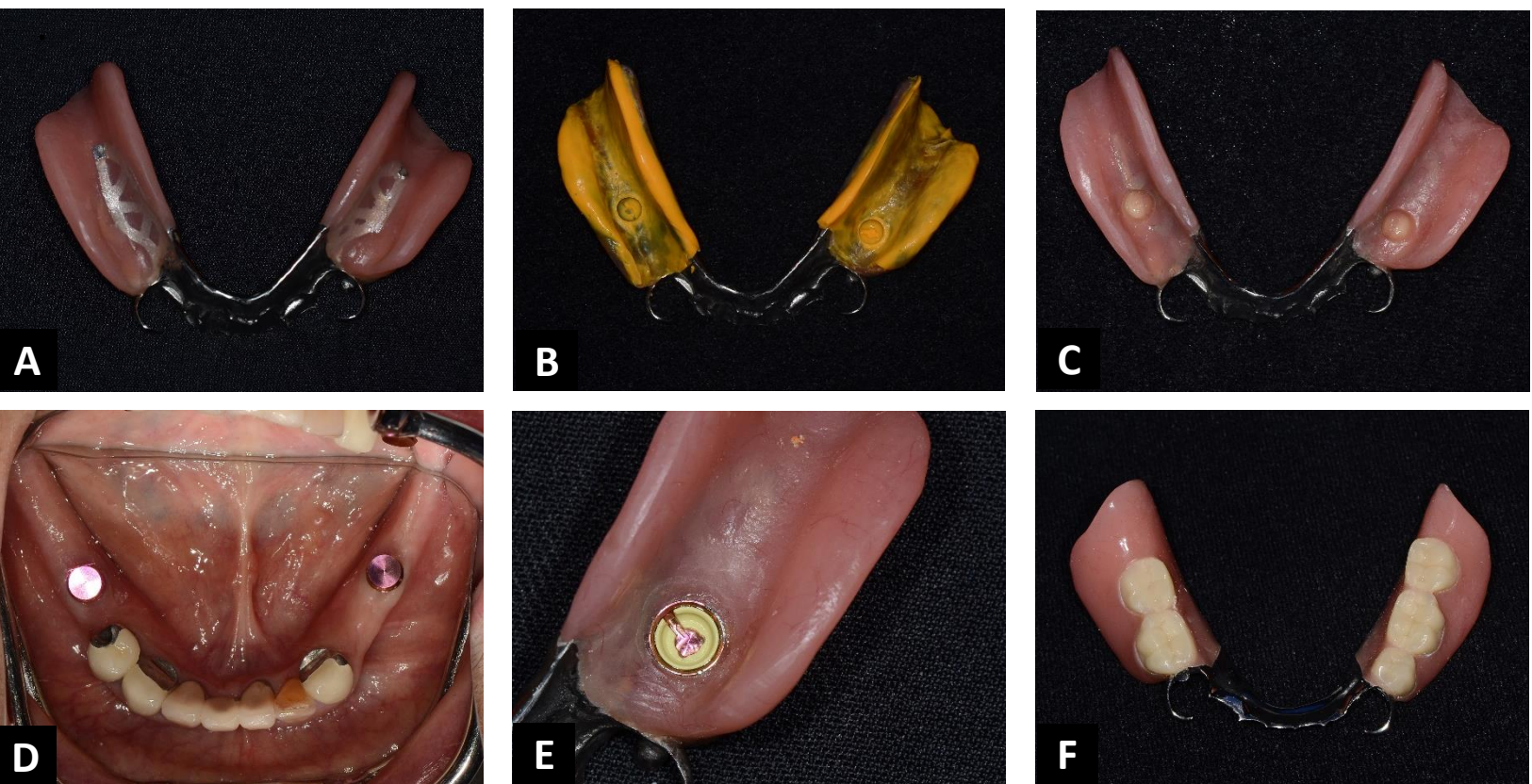


Fig.7 Fabrication of ISRPD (A) Old RPD (B) Functional impression of RPD for rebasing (C) Relief of denture for abutment space (D) Connection of attachment (female part) (E) CM Loc® attachment (F) Final prosthesis of ISRPD

Final prosthesis delivery



Fig.8 Final statement of patient (A) Stud attachment (B,C) Final prosthesis of ISRPD

Discussion

As the installation of implant for ISRPD would effectively change the Kennedy Class I situation to Class III, there were less pressure on both distal edentulous ridge and less displacement of denture. Also, this have improved the retention and stability of distal-extension RPD.² Accordingly, ISRPD have improved masticatory efficiency, functional movement and satisfaction of patient compared to CRPD. As the ISRPD have several advantages such as cost-effectiveness and minimal invasive procedure, ISRPD would be suggested as the alternative treatment option for mandibular Kennedy class I or II patient.

CM Loc® abutment is stud attachment system made from polyetherketoneketone (PEKK).⁴ PEKK are known to have high-quality characteristics such as high chemical and mechanical resistance against wear and high tensile, fatigue and flexural strength. They can provide additional stability, retention and support. The magnetic force of magnet attachment is direction dependent, being the strongest in the vertical dimension but relatively weak in the lateral dimensions. Even though magnet attachments have poor corrosive resistance, they have several advantages such as ease of cleaning, ease of placement for patients, automatic reseating and constant retention with number of cycles.⁵

Conclusion The patient was satisfied with esthetics and function of ISRPD. However, further studies are needed for long-term evaluation.

Acknowledgement

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Reference

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