

A case report of maxillary IARPD using magnetic attachments and anterior milling teeth

A. Tokue¹, H. Shimpō¹, D. Kurihara¹, Y. Suzuki¹, N. Harada², and C. Ohkubo¹

¹Department of Removable Prosthodontics, Tsurumi University School of Dental Medicine

²Dental Technician Training Institute, Tsurumi University School of Dental Medicine

Abstract

The patient was a 51-years old female with partially edentulous maxillary jaw (six anterior teeth remained, Kennedy classification I, Eichner classification B4). Her chief complaints were difficulties of mastication using existing denture and bad esthetic by metal clasps on the anterior teeth. Prosthetic rehabilitation was planned using an implant assisted removable partial denture (IARPD) with magnetic attachments and milling crowns on the anterior remaining teeth.

Two implants (GENESiO Plus, GC, Japan) were placed in the regions of # 14 and # 24 and magnetic attachments (GIGAUSS D400, GC) were set on the custom abutments using adhesive cement (Super Bond, Sun Medical, Japan). The porcelain fused to metal crowns with milling on their lingual sides were placed on the six anterior remaining teeth. IARPD with Co-Cr framework were delivered after vertical dimension was heightened.

Sufficient retention and stability could be provided by the combination of milling crowns and magnetic attachments, and satisfactory aesthetic and function could be achieved using the IARPD.

Introduction

From an aesthetic reason, patients are distinguished by metal clasps on the anterior teeth. In this case, an implant assisted removable partial denture (IARPD)^{1,2)} with magnetic attachments³⁾ and milling crowns on the anterior remaining teeth was fabricated for aesthetic appearance.

Patient's characteristics

The patient was a 51-years old female with partially edentulous maxillary jaw including dental root fractures #16, #15, and #24 (Fig. 1, 2). Maxillary acrylic partial denture was worn for five years. Her chief complaints were difficulties of mastication using existing denture and bad esthetic by metal clasps on the anterior teeth (six anterior teeth remained, Kennedy classification I, Eichner classification B4). There was no significant medical history.



Fig. 1 Intraoral photograph at the first visit

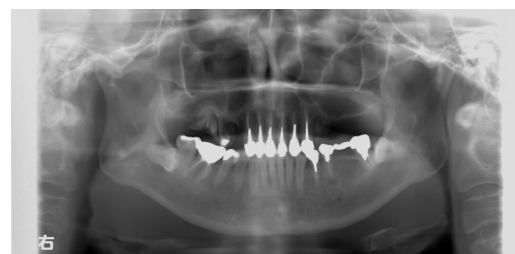


Fig. 2 Panorama radiograph at the first visit

Treatment progresses

2014/ June	First visits
September	Extraction of #16, #15, and #24.
2015/ February	Two implants (GENESiO Plus, GC, Japan) were placed in the regions of # 14 and # 24 with socket rifting.
May	Second-stage surgery for the implants
November	Vertical dimension was increased using a treatment denture.
2016/ July	Functional Bite Impression (FBI) ⁴⁾ was made
2017/ January	Porcelain fused to metal crowns with milling on their lingual sides were placed on the six anterior remaining teeth. IARPD with Co-Cr framework were delivered.
February,	Magnetic attachments (GIGAUSS D400, GC) were set on the custom abutments using adhesive cement (Super Bond, Sun Medical, Japan).



Fig. 3 Magnetic attachments (GIGAUSS D400, GC) were set on the custom abutments using adhesive cement (Super Bond, Sun Medical, Japan).

Functional Bite Impression (FBI)

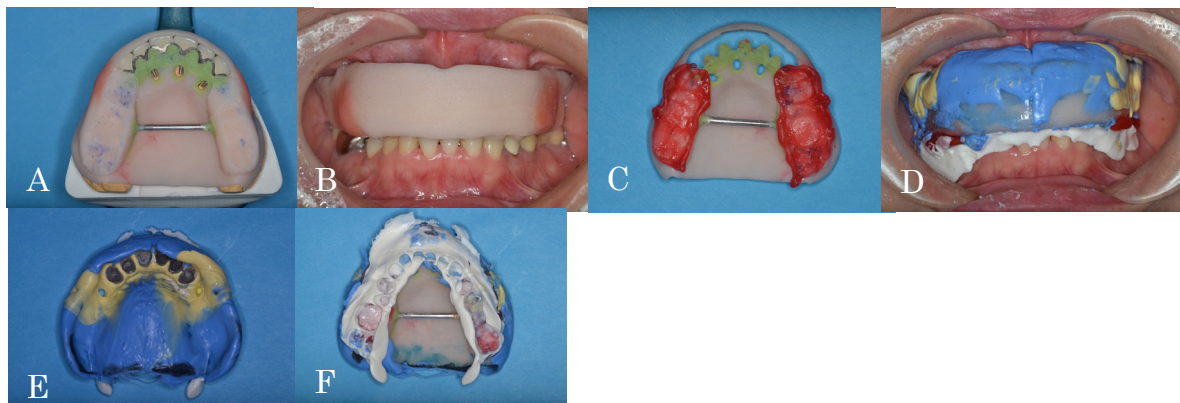


Fig. 4 FBI tray (Fig. A) was fabricated and tried in the oral cavity (Fig. B). Using the auto-polymerized resin (Pattern resin, GC) on the occlusal surface, the functional generated path was recorded (Fig. C). The definitive impression (Exafine, GC) was made under the occlusal pressure after the border molding, and the anatomical morphologies of the opposite teeth were recorded with white silicone impression material (fit checker, GC).

Delivered the prosthetic appliances



Fig. 5 View of mucosal surface of metal base denture (Fig. a). Fabricated porcelain fused to metal crowns with milling on their lingual sides and IARPD with Co-Cr framework (Fig. b), Intraoral photograph when wearing prosthesis (Fig c, d).

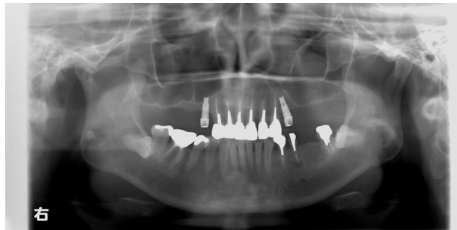


Fig. 6 Panorama radiograph at the postoperative visit

Discussions

Sufficient retention and stability could be provided by the combination of milling crowns and magnetic attachments, and satisfactory aesthetic and function could be achieved using the IARPD.

References

1. Ohkubo C, Effect of implant support on distal extension removable partial dentures: in vitro assessment, J Oral Rehabil 34(1):52-56, 2007.
2. Ohkubo C, Effect of implant support on distal-extension removable partial dentures: in vivo assessment, Int J Oral Maxillofac Implants 23(6):1095-1101, 2008.
3. Suzuki Y, Kono K, Shimpo H, et al, Clinical Evaluation of Implant-Supported Removable Partial Dentures With a Stress-Breaking Attachment, Implant Dent 26(4):516-523, 2017.
4. Shimizu S, Sato Y, Shirai M, et al, Occlusion accuracy of restorations and removable partial dentures fabricated using the impression under Occlusal force with FGP, J Oral Sci, in Press.